

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

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S U M M A R Y ¹

1. A glance at recent trends in business fixed investment reveals that, after suffering substantial reductions in 2001, investment has stopped declining and seems to be bottoming out, on the back of increases in exports and corporate profits in 2001. Assuming that the recovery in overseas economies becomes more definite, we can now look forward to these increases in exports and production becoming gradually more firmly entrenched, bringing capital spending back on line for recovery. According to the *Tankan*, if we look at large businesses' fixed investment plans by fiscal year, we see that, although extensive reductions were the likely results in fiscal 2002, in fiscal 2003 manufacturers are planning to increase investment, albeit only slightly, while in nominal terms the overall amount of investment seems set at least to level out. Turning to individual sectors, there has been a halt in the decline in the electrical machinery sector, which gives an indication of trends in investment aimed at expansion of the capacity of liquid crystal and electronic devices, while in both the steel and chemical sectors there are plans to increase investment.
2. However, although the improvement in corporate profits has been accompanied by an increase in firms' cash flow, in comparison to this the strength of the recovery in business fixed investment is only weak. In the background of this weakness lie the following facts: that the improvement in corporate profits has been, to a significant extent, built upon the effects of restructuring; and that there is still considerable uncertainty attending future demand. In addition to these, we should note that the weakness in capital spending relative to cash flow is not purely a recent phenomenon, but rather a characteristic that has become gradually more defined since the 1990s, and as such the influence of structural factors that have tended to suppress capital investment may well be considered important.
3. The first of these structural factors has been the pressure to reshape the industrial structure. Since the 1990s, with the progress of globalization and the spread of IT, Japanese firms have increased investment abroad, particularly in East Asia, strengthening their production bases overseas. At least regarding manufacturing industry, this may be considered to have acted as a constraint upon domestic capital investment.
4. The second factor is the rigidity that characterizes the Japanese corporate system. As is often pointed out, the traditional Japanese corporate system has several characteristic features: (1) low labor force mobility; (2) a lack of active participation by foreign-affiliated companies and new start-ups; and (3) weak corporate governance by shareholders. This corporate system may be deemed ill-equipped to encourage firms to reallocate resources beyond themselves in dynamic ways, thereby dealing with the rapid changes to the business environment that have been taking place since the 1990s.
5. The third factor is the decline in asset prices. The asset price declines, which were triggered by the bursting of the bubble at the beginning of the 1990s, persisted until recently, partly reinforced by the Japanese economy's continuing failure to respond fully to structural adjustment pressures. Since the nominal value of liabilities is fixed, such falls in the value of firms' asset holdings cause their balance sheets to deteriorate. This problem is particularly severe in the nonmanufacturing sector, and especially among small and medium-sized nonmanufacturing firms, where asset accumulation during the bubble period was funded with debt, and there is an increasing incidence of cases where companies are simply unable to repay their debts. Even among firms that did not accumulate large debts, a fall in the value of their assets affects their balance sheets in adverse ways, such as by reducing the unrealized gains on their asset holdings, and this has acted to weaken the appetite for risk-taking among a wide range of firms including large manufacturers. By comparison with the evident problems posed by this asset price deflation, it is rather less clear whether or not the gentle decline observed in the general prices has acted to suppress business fixed investment in any way.
6. The fourth factor has been the deterioration in financial institutions' performance of their function as financial intermediaries. The ill effects

1. This article is a translation from the Japanese original published on June 26, 2003. For a key to the symbols and abbreviations used in this article, see page 60.

on firms' balance sheets of asset price deflation have spread to the balance sheets of financial institutions, by obliging the latter to dispose of a huge amount of nonperforming loans (NPLs). The result has been to shake confidence in the continuity of corporate financing and the stability of the financial system, and also therefore to make firms even more cautious about risk-taking. In particular, firms' experiences in 1997-98, when corporate financing took on a crisis aspect, may well have acted to reawaken their sense of the urgent need to restructure their finances. At the same time, it is worth pointing out an issue that is to some extent distinct from the NPL problem, namely the fact that financial institutions have not yet developed a fully functioning credit intermediation model with which to replace the old model of lending with real estate as collateral. The result is that these financial firms' ability to support the risk-taking of entrepreneurial firms has been compromised. On the other hand, with low growth becoming a chronic condition, share prices falling, and opportunities to extend performing loans growing scarcer, there have been extra burdens weighing down the balance sheets of financial institutions. Added to this has been the decline in the effectiveness of monetary policy, which, though aimed at dealing with this vicious circle within which the financial and real economies are locked, has been hampered by the zero nominal interest rate constraint.

7. The fifth factor has been the decline in the expected growth rate. With both the real economy and the financial intermediary function in a weakened state, the actual growth rate has continued to be low, and this has driven firms' expectations of the growth rate into a declining trend since the 1990s. Since these low expectations suppress capital investment, thus weakening the real economy still further, we may also perceive certain aspects of a vicious circle at work here too.
8. Finding a way out of this low-growth vicious circle must ultimately involve increasing the flexibility of the corporate system through structural reform and restoring fully functional financial intermediation. In fact, there has already been some progress made, and with a new liveliness characterizing areas such as M&A and corporate reorganization, at least in comparison

with years gone by, there appear to be some signs of vigor in firms' efforts to think beyond their own boundaries when deciding how to reallocate resources. For example, in materials industries such as iron and steel there has been progress made in reorganization aimed at consolidating excess capital, and with growth in the East Asian economies providing the tail wind, capital investment is looking up. Also in the electrical appliances sector, under their enhanced concentration policy, firms are giving up on domestic production of commodity-type goods and concentrating their strategic efforts on high-value-added electronic devices for which worldwide demand is expected to expand. These strategic decisions entail their overall business consolidation and capital spending. Such developments, however, are taking place only in selected parts of the economy, and it will take quite some time before we can see an expansionary dynamism on the macroeconomic level that involves activity even at small and medium-sized firms.

9. Looking forward, the industrial structure will be characterized by the following basic trends: (1) higher intensity of technology in the manufacturing industry and (2) a migration of labor from manufacturing and construction to tertiary industries. An example of high economic growth that concurred with a massive reallocation of resources was seen in the United States in the 1990s, where an increase in total factor productivity in manufacturing industry, significant employment gains in the service sectors, and active capital investment in IT-intensive nonmanufacturing sectors such as finance and telecommunications took place simultaneously. Of course, we should bear in mind that Japan will have its own unique optimal prescription in terms of industrial restructuring and the distribution of its resources. The precise make-up of that prescription, however, is something that should be left to market mechanisms, to be discovered as results of firms' own efforts to maximize their profits.
10. The point, therefore, in promoting the optimal distribution of resources throughout the economy as a whole, is not only to improve the functioning of the markets for shares and corporate bonds, but also to create an environment in which

Recent Trends in Business Fixed Investment and the Issues

Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

market prices are readily available for real estate, loan claims, and as broad a range of assets and businesses as possible. Enhanced application of market principles will make it easier to identify nonviable businesses, and will spur management efforts to raise the value of assets. Of course, this is not to claim that markets are almighty, nor does it deny the need to use a variety of measures to supplement the areas where markets are incomplete. The Industrial Revitalization Corporation of Japan (IRCJ), which has recently begun to operate, may provide the breakthrough necessary to speed up structural reform, by promoting the corporate revitalization business in the private sector. Tasks such as building fully functional financial and capital markets, thereby breathing new life into Japan's industry, may seem to be part of a somewhat subterranean process that has no direct bearing on immediate economic expansion. Nevertheless, steady progress in these areas is vital.

I. Recent Trends in Business Fixed Investment

Looking at recent trends in business fixed investment on a real output basis (Chart 1, bold line), we see that after surging during the IT boom from 1999 to 2000, investment declined rapidly from the middle of 2001, although it has recently been pulling out of this decline on the back of the recovery in corporate profits in 2002. Even on a nominal output basis (Chart 1, thin line),² the decline has halted. A glance at representative leading indicators (Chart 2) confirms that, although neither is precisely steady, floor space for construction work newly underway has stopped contracting and machinery orders appear to be gradually increasing.

According to the March 2003 Short-Term Economic Survey of All Enterprises (the *Tankan*), if we look at the fixed investment plans of large firms by fiscal year (Chart 3 [1]),³ we see a substantial

reduction of -8.7 percent in fiscal 2002 for all industries. However, in fiscal 2003, although reductions in investment will still continue in the nonmanufacturing industry, there are increases, if only small ones, planned by manufacturing industries, and the extent of reductions in investment plans as a whole has contracted, settling at -0.8 percent, almost within the "level" zone.⁴ Turning to the breakdown by industry (Chart 3 [2]), in electrical machinery the large reductions in investment observed in fiscal 2001 and fiscal 2002 will come to an end in fiscal 2003, partly reflecting expansion of the capacity of liquid crystal and electronic devices. In both the iron and steel and chemicals sectors, large reductions in fiscal 2002 have been transformed into small planned increases in fiscal 2003, mainly in maintenance and repairs as well as IT-related investment. Increases of varying extent can also be seen in other manufacturing sectors.

Various indicators such as those discussed above suggest that business fixed investment is now on line for a gradual recovery. The foundation for this has been the strengthening of corporate profits. This can be confirmed by looking at the trends and outlook for current profits reported in the *Tankan* (Chart 4), where we see that in fiscal 2002 large manufacturing firms appear to have enjoyed a substantial increase in their profits of over 30 percent, while in fiscal 2003 a further gain of roughly 10 percent is expected. In other sectors too, although the pace of recovery among small and medium-sized nonmanufacturing firms is moderate, profits will continue to rise in fiscal 2003.

However, in comparison to these improvements in corporate profits and therefore cash flow, the increase in business fixed investment has been somewhat desultory. Looking in more detail at "Financial Statements Statistics of Corporations by Industry, Quarterly," if we compare capital investment (in nominal terms) with estimates of cash flow

2. The deflator for business fixed investment has been on a steady downward trend, reflecting technological innovation in machinery. In addition, since 2001, calculation of the capital investment deflator has been based on the corporate goods price index benchmarked to 2000, which reflects quality improvements in machines more accurately in price declines, and this has caused the pace at which it has been falling to accelerate to -3 to -4 percent per annum. For this reason, a sizeable gap has developed between movements in real and nominal capital investment. Since a number of the capital investment indicators utilized below are in nominal terms, graphs denominated in both real and nominal terms are displayed in Chart 1.

3. A large number of small and medium-sized firms replied that, as of the beginning of the fiscal year, they had no plans to make fixed capital investments. Therefore, the investment plans reported by such firms in the March *Tankan* have historically shown a substantial negative bias. For this reason, we only look at large firms here. Incidentally, investment plans by small and medium-sized manufacturing firms for fiscal 2003 show smaller reductions than the past average as of March.

4. As was discussed in Footnote 2, the deflator for business fixed investment has recently been declining at the rate of -3 to -4 percent per year, which means that investment plans for fiscal 2003 could be thought to be positive on a real basis.

(Chart 5),⁵ we see the gap between the two becoming clear from about 1998 onward, and more recently we observe that capital spending has been slower to recover than cash flow. By sector (Chart 6), although the gap between cash flow and capital spending is on the whole relatively small for IT-related manufacturing compared to other manufacturing and nonmanufacturing sectors, when we look at the most recent data we see that, in spite of a decidedly firm recovery in cash flow, the predominant question regarding capital spending remains whether its decline has actually come to a halt or not. For other (non-IT-related) manufacturers, capital spending has been well below cash flow since about the mid-1990s, while for nonmanufacturers this same condition has held true for the past several years. Furthermore, based on the aforementioned profit and capital spending plans for fiscal 2003, the difference between the two is set to widen still further over the course of the current fiscal year.

In contrast to the behavior of firms, consumption behavior in the household sector has recently been displaying robustness out of proportion to household income. Looking first at the income side, we see that, because the increases in corporate profits discussed above have been accompanied by tightening pressure on employment and wages, employee income has been shrinking at a rapid rate since 2001 (Chart 7). The result was a large drop in labor income share from the latter half of 2001 through 2002 (Chart 8). However, turning to the expenditure side, we see the strengths and weaknesses of each sector reversed. While, as discussed above, capital spending fell in fiscal 2001, with this decline coming more or less to a halt in fiscal 2002, consumer spending, on the other hand, provided support to the overall economic growth rate throughout both fiscal years (Chart 9).

In this way, in spite of the fact that a recently increasingly profitable corporate sector has been trimming its investment, the Japanese economy as a whole has managed to avoid falling into a contractionary equilibrium thanks to the household sector, which has responded to cuts in pay with disproportionately robust consumption behavior.

While it is difficult to identify a particular reason to explain this relative robustness in personal consumption, since a continued divergence between income and consumption is not sustainable over the longer term, it is natural to expect any further increases in households' propensity to consume to be hard to come by in the future.⁶ Given these circumstances, if corporate capital spending remains unable to strengthen its performance relative to cash flow, then we may expect a self-sustaining recovery of the Japanese economy to be rather slow to emerge.

When we consider the background to why capital spending has lagged relative to the recovery in cash flow, one important feature is that there have not been sufficient expectations of future demand. Instead, the future has been characterized by considerable uncertainty. Looking at a factor analysis of the factors contributing to changes in the ratio of operating profits to sales at large manufacturing firms (Chart 10), with sizable contributions coming from the labor cost and fixed cost factors, there is a strong suggestion that the profit increase in fiscal 2002 has been significantly helped by cost-cutting efforts. Furthermore, although profits are expected to continue to increase during fiscal 2003, the outlook for overseas economies is far from clear, and at the current juncture there is considerable uncertainty attendant upon the forecasts for fiscal 2003. Faced with such conditions, it is scarcely surprising that firms should choose to be cautious and refrain from converting their ample cash flow into immediate capital investment.

However, as was pointed out above, the weakness of capital spending relative to cash flow is not a temporary phenomenon limited to the current circumstances, but a more established economic feature that has been growing more and more prevalent since the 1990s (Chart 5). It may be true that, at least for IT-related manufacturers, there is simply a time lag between cash flow and capital investment, and that investment may be seen to be more or less catching up with cash flow over the longer term (Chart 6). However, there is an alternative way of looking at this situation: namely that for a

5. For the sake of simplicity, we take the corporate tax rate to be about 50 percent, and we calculate cash flow as current profits/2 + depreciation expenses.

6. The recent issue of *Economic Commentary* published by the Bank's Research and Statistics Department ("Will Private Consumption Maintain Its Firmness?" A. Mineshima, February 2003) put forward a number of hypotheses regarding the reasons why personal consumption had remained relatively robust in spite of declining income. The paper then made use of an error correction model to come to a provisional conclusion that personal consumption had reached a level in excess of its long-term equilibrium with income, suggesting that pressures would be likely to emerge to reduce the propensity to consume in the future.

Recent Trends in Business Fixed Investment and the Issues

Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

number of years even those Japanese firms which have relatively promising opportunities for growth have scarcely engaged in capital investment in excess of their cash flow. Such a phenomenon suggests that there are structural factors holding up the progress of business fixed investment in Japan. If such structural factors have indeed been at work, then even if there were to be some future abatement in the uncertainty gripping overseas economies, this would be highly unlikely to result in a strong recovery in such investment. The discussion that follows will concentrate on these structural factors that are suppressing capital spending.

II. Long-Term Sluggishness in Business Fixed Investment

Looking at the long-term growth rate of real capital spending based on GDP data (Chart 11), there have been phases when the growth rate has been temporarily high, in line with cyclical movements, even during the period since the 1990s. However, such periods of growth have been short-lived, and with growth rates having fallen considerably during the troughs, the result was an average of zero growth in capital spending in between 1991 and 2002. During the previous ten years, encompassing the bubble, average yearly growth was 8.4 percent; and in the ten years before that, which included the recession following the oil shock, growth averaged 4.5 percent. Comparison with those decades in the past makes the weakness in business fixed investment over the last ten years stark. This long-term sluggishness in capital spending since the 1990s can be attributed to the following structural factors, which have been acting as impediments: (1) pressure to reshape the industrial structure in the face of the economic rise of East Asian countries; (2) rigidities inherent in the corporate system in Japan; (3) the decline in asset prices; (4) the deterioration in the financial intermediary function; and (5) the decline in the expected growth rate. Several of these factors interact in adverse ways to bring about a vicious cycle, so that they have a composite effect on the economy. In what follows, therefore, we aim to deal with these factors in order, but with due reference to the relations between them wherever appropriate.

A. Pressure to Reshape the Industrial Structure

With the end of the Cold War and the spread of market economies across the world, progressing

economic globalization has wrought profound changes in the environment facing Japanese firms since the 1990s. The fundamentals were set for economic development in East Asian countries over the course of the 1980s, and after leaping advances in these countries' production capacity during the first half of the 1990s, the so-called Asian economic growth miracle occurred. During the latter half of the 1990s, the currency crisis caused a hiatus in high-speed growth, but with the vast labor force and marketplace of China providing a new center, East Asian economic vitality did not falter for long.

The world economy since the 1990s has been characterized by remarkable developments both in IT itself and in the technologies for its application. Together with the expansion of production capacity in East Asia, these have brought about a structural division of labor between Japan and the East Asian economies, mainly in equipment and parts for information-related technologies.

This last point is most clearly illustrated by looking at the changes in the composition of Japan's trade statistics (Chart 12). Specifically, East Asia's share of total imports into Japan has risen substantially from 27 percent in 1990 to 41 percent in 2002. Similarly, looking at the breakdown by type of goods, we see that the shares of capital goods and parts and of IT-related goods have all undergone significant increases since the 1990s. In line with the changes seen in the trade statistics, the trend of Japanese manufacturers expanding their production bases overseas has become more pronounced. The proportion of manufacturing production done overseas, which did not exceed the 4–5 percent level in fiscal 1990, is expected to have reached about 14–15 percent in fiscal 2002 (Chart 13 [1]). The proportion of overall business fixed investment that is carried out overseas has also increased, in a similar fashion, since the first half of the 1990s. There was a brief pause due to the Asian currency crisis, but against the background of firms' rapid movement into China, this increasing trend soon reasserted itself. The result has been that, even in years such as fiscal 2001 and fiscal 2002 when domestic capital investment was decreasing, capital spending overseas continued to increase (Chart 13 [2]).

Considering the above, it is clear that one of the reasons for the long-term sluggishness that has been afflicting Japanese domestic capital investment since the 1990s has been, at least as it affects the

manufacturing industry, the progressive shift of production abroad, to the East Asian countries and in the last two or three years particularly to China. However, the globalization of the world economy, by raising the degree of international specialization and division of labor, is ultimately economically beneficial to all countries concerned, and the shift of production to newly industrializing countries does not automatically entail the “hollowing-out” of the advanced industrial nations. So long as market adjustment mechanisms are functioning smoothly within advanced countries, then, even if there is a production shift overseas, these countries should be able to reorganize their remaining productive resources into generating high-value-added products and services, which should in turn provoke the need for fresh domestic capital investment. To put it another way, the essential reason why pressures to reshape the industrial structure emerging from globalization and the advance of IT have produced long-term sluggishness in Japan’s domestic capital investment has been the inadequacy of the corporate sector’s response and its failure to convert these pressures into energy for the growth of new businesses.

B. Rigidities in the Japanese Corporate System

We move on to consider rigidities inherent in the corporate system in Japan, from the viewpoint of the system’s function in reallocating resources. With the advance of globalization and the spread of IT, the speed of economic change has been rapid, increasing the need for firms to think beyond their own boundaries and take bold decisions in reallocating resources. However, as is often pointed out, the Japanese corporate system has several particular characteristics that make it poorly adapted to moving swiftly and thinking dynamically about the allocation of resources. These are (1) low labor force mobility, (2) a lack of active participation by foreign-affiliated companies and new start-ups, and (3) weak corporate governance by shareholders.

The first issue is the low mobility of the labor force. Japanese employment practices are characterized by what have been termed life employment and the seniority-based wage system. At least for the regular employees of mostly large companies, the existence of seniority-based wages and retirement payoffs (or retirement pensions) acts as an implicitly rear-weighted system of payment which means that workers, and especially middle-aged and older

workers, have an incentive to remain at the same company, and also makes it difficult for management to lay off workers or make substantial cuts in pay. During the high trend growth era in the past, these employment practices contributed to the buildup of human resources in the long term while personnel costs in cyclical downturns were successfully controlled merely by reductions of bonus payments and cutting back on new recruitment.

However, as the importance of responding to the pressures for structural change has become increasingly prevalent since the 1990s, the negative aspects of the rigidities inherent in these types of employment practice have begun to stand out. As a matter of fact, having become aware of this problem early, firms have been reviewing their systems of employment over more than a decade, making use of part-time workers and temporary-employment agencies, and introducing performance-related pay. Recently even the cornerstone of seniority-based wages, the automatic periodic pay increase, has gradually undergone reconsideration. However, lifetime employment has deep roots in Japanese society, and, partly because of that, the development of an external labor market to help smooth the process of job turnover and reeducating human resources has proved slow to get off the ground. In addition, while awareness of the changes that have taken place in the business environment may gradually have been sinking in since the 1990s, the extent of the friction that attends any attempt to renege upon implicit contracts to rear-weight pay before such “contracts” have run their full term has meant that drastic restructuring and sweeping reforms to the wage system have been postponed as long as possible. The result has been that even now the mobility of the labor force has not risen far enough, and this has been one of the reasons why it has proved so difficult to carry out swift disposals of NPLs. It has also affected the economy in a variety of other ways that have acted to slow the process of achieving the appropriate reallocation of resources in the economy.

The second issue is the lack of activity in the areas of foreign capital inflows and new start-ups. Looking at the figures for Japanese inward direct investment, in other words the direct investment by foreigners into Japan, we see that since the end of the 1990s there have been significant increases partly due to some institutional changes (Chart 14 [1]).

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

However, the scale of this investment is such that, even recently, it remains at around the 1 trillion yen mark, i.e., some 0.2 percent of GDP, a level that is conspicuously low when compared to those of many other countries (Chart 14 [2]). The participation of foreign capital can act to invigorate an industry. One good example was provided by foreign capital participation in one of Japan's largest car manufacturers in 1999. As a result of this, not only did the carmaker itself rapidly regain its feet, but the entire industry was revitalized and even adjacent sectors such as subcontractors and materials providers were eventually forced to go through unprecedented restructuring and reorganization. Since, however, the overall level of inward direct investment is so low, examples producing such positive impacts are few, and on the whole the impetus toward industrial revitalization remains minimal.

Looking at the emergence of new businesses, the rate of business start-ups traced out a declining trend up to the first half of the 1990s, and since then has remained stuck at a low level (Chart 15 [1]). Comparing the rate of business start-ups with those in other countries, we see not only that the level in Japan is, unsurprisingly, lower than that in the United States, but that it is also manifestly lower than those in almost all the European countries as well (Chart 15 [2]). Such an absence of new businesses demonstrates that the corporate system as a whole is having difficulties in absorbing excess capital and labor and putting them to work again in pursuit of new value-added. Generally speaking, young companies grow and absorb labor more rapidly than longer-established firms (Chart 16). If the economy is failing to produce an adequate flow of such young enterprises, then when negative adjustment pressures are afflicting existing companies and industries, it becomes difficult for the economy as a whole to achieve the reallocation of resources without pain.

Third, the Japanese corporate system is characterized by weak corporate governance by shareholders. Looking at return on equity (ROE), one of the measures of earnings most used by shareholders, we see that this has been following an evidently declining trend since the 1990s, regardless of whether we look at manufacturing or nonmanufacturing industries, and that it has remained at a low level in recent years (Chart 17). Whatever adjustment pressures the Japanese economy may

have been exposed to, such a long-lasting stagnation in ROE tends to suggest that, even over the long term, shareholders' stakes may not have received much priority. With the main bank system and cross-shareholding becoming deeply ingrained during the era of high trend growth, the function of the capital markets to encourage firms to reform their business practices by forcing them to be accountable to shareholders has failed to develop sufficiently, and this underdevelopment of the market has been one factor behind the lack of attention paid to shareholder benefit. In a sense, the underdevelopment of the market is closely linked to other features of the Japanese corporate system: the rarity of foreign buyouts, and the precedence given to employees and the companies with whom the firm has long-term business dealings. This means that even in cases when resource reallocation through large-scale restructuring or M&A could contribute to the maximization of share value, there exists a bias hampering such activity due to other considerations.

Of course, up until the 1980s, favorable aspects of this traditional Japanese corporate system had been emphasized. One of the reasons why the practices that used to be regarded as far-sighted management have become increasingly regarded since around the 1990s as simply characteristic of a procrastinating management style can be found in the faster rate of change in the business environment caused by, as discussed in Section II.A, globalization and the spread of IT. At the same time, even with imperfectly developed capital markets, it was previously the case that aggressive behavior of firms was financed by lending that used real estate as collateral or was encouraged by sizable unrealized gains on asset holdings. Needless to say, such risk-taking activities were made possible by the presumption that the asset prices would keep rising. Therefore, the fact that this presumption no longer holds is considered another important factor behind the diminished functionality of the Japanese corporate system. In addition, thanks to the prevalence of excessive expectations during the latter half of the 1980s, the transition to becoming a mature economy came abruptly and in the unwelcome form of the collapse of the bubble, and this has inflicted substantial damage on firms' risk-taking abilities. This point will be discussed in more detail in the following section.

C. Decline in Asset Prices

Both land and share prices have remained depressed since the 1990s (Chart 18). This started with the collapse of the bubble at the beginning of the 1990s, and during the first half of the 1990s in particular the extent of the decline in asset prices was substantial. In fact, in spite of some considerable time having elapsed since the collapse of the bubble, land prices still have not reached bottom; instead, there has recently been some acceleration in the pace of decline in regional cities. Stock prices, meanwhile, having fallen rapidly between 1990 and 1992, then began a series of fluctuations with gradually lower and lower troughs, and in 2002 went through a phase of setting a rapid succession of new “lowest points since the bubble burst.” Consideration of these facts suggests that the depressed asset prices over more than ten years are not merely the direct result of the collapse of the bubble, but have been influenced by a number of additional factors including the issues discussed above: structural adjustment pressures and the weakness of firms’ response to them.

This asset price decline has been highly detrimental to firms’ balance sheets. During the bubble period, a large number of firms funded ambitious asset acquisition and capital investment programs by taking on debt, and after asset prices were sent tumbling by the collapse of the bubble, the balance sheets of such firms were unavoidably damaged as the relative size of their debt, whose nominal value was fixed, escalated (Chart 19). This balance-sheet deterioration is most clearly illustrated in the nonmanufacturing industry, which was the most active in inflating balance sheets before the bubble burst. Particularly badly hit have been small and medium-sized nonmanufacturing firms which, with additional funding from financial institutions, continued to build up their levels of debt for a while even after the bubble burst,⁷ with the result that there have since been increasing cases where such firms have no prospects whatsoever of repaying their debts. From the perspective of financial institutions such

cases become NPLs, and, as is discussed below, these then detract from performance of their financial intermediary function.

While it is true that NPLs are associated mainly with the balance sheets of nonmanufacturing and especially of small and medium-sized nonmanufacturing firms, when we consider also the damaged risk-taking ability of firms, the scope of the problem becomes somewhat wider. More specifically, firms in the manufacturing sector, especially large firms, had extensive holdings of both land and shares. With the collapse in asset prices that accompanied the bursting of the bubble, even if these firms experienced no immediate difficulties in repaying their debts, they still found themselves with depleted unrealized gains on their asset holdings. At the same time, progress in reducing debt was slow due to diminished profitability. As a result, even large manufacturing firms found themselves falling foul of the trend of continuously deteriorating balance sheets. In this context, the Cabinet Office’s survey of listed firms in January 2002 reveals that, regardless of whether firms were in manufacturing or nonmanufacturing, about half of them stated that they were aware of having excess levels of debt, and of those over half reported levels of excessive indebtedness above 20 percent (Chart 20). This is one of the reasons why we have observed throughout the entire corporate sector the phenomenon of firms prioritizing the repayment of debt, so that even when cash flow increases, this is not converted into an immediate increase in capital investment (Chart 5).⁸

While the asset deflation has been suppressing firms’ risk-taking behavior as described above, general prices have also continued their moderate decline in recent years. With the exception of 1997, the year in which the consumption tax was raised, the GDP deflator has been falling constantly from the mid-1990s. The consumer price index (CPI; on a national basis, excluding perishables) has also been falling fairly consistently from around 1998–99, albeit at a moderate pace of less than 1 percent on an annual basis. However, in contrast to the evident

7. For a detailed discussion of both the theory and empirical evidence for this additional financing by financial institutions after the collapse of the bubble, please refer to “Forbearance Lending: A Case of Japanese Firms” (K., Kobayashi, Y. Saita, and T. Sekine), Bank of Japan Research and Statistics Department Working Paper Series, February 2002.

8. During March 2003, in spite of the improvement in operating profits, many firms experienced a contraction in their net income because of falls in share prices. Of course, if a given firm’s cash flow or fundamental profitability were strong enough then a contraction in net income due to a drop in the value of shareholdings would not necessarily impact directly upon that firm’s capital investment. However, when we think about the blight upon risk-taking caused by firms’ balance-sheet deterioration, then for as long as firms are unable to expect to make up new losses on their shareholdings from a future bounce back in share prices, the extra pressure on balance sheets is liable to cause increased caution in firms’ behavior.

Recent Trends in Business Fixed Investment and the Issues

Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

influence of the asset price deflation, it is far less clear whether or not this gentle general price deflation has in itself acted to suppress capital investment.

A simple summary of the route by which general price deflation might have an adverse effect on capital spending usually stresses the following: (1) that when prices fall, downward rigidity in nominal wages tends to stop them following suit, and this has a negative impact upon firms' profits; and (2) the rise in the real interest rate. However, dealing with the nominal wage point first, when we consider the evident decline in nominal wages since 1997, it is difficult to contend that these have been characterized by strong downward rigidity. Looking at the figures for employee income obtained by multiplying wages by the number of workers, we see that these too have on the whole been following a downward trend since 1997 (Chart 7). The phenomenon of deflation impacting upon firms' profits because of the difficulty of reducing labor costs is, at the very least, hard to discern clearly in these data.

An even more straightforward way of looking at this point is to decompose the fall in the GDP deflator into unit labor cost (i.e., labor cost per unit of output) and unit profit (i.e., firm profit per unit of output). Relative contributions vary from time to time; however, on the whole we can see that the contribution of the fall in labor costs is large enough to dismiss the hypothesis that the fall in prices has been disproportionately borne by the corporate sector (Chart 21).⁹

With regard to the second point, the real interest rate, it may be argued that, since technological advance has been driving the prices of capital goods down at a faster rate, even with low nominal interest rates, firms planning to carry out fixed capital investment are faced with significantly higher real interest rates. However, when considering the real interest rate faced by firms planning to carry out capital investment, the concept that may be thought most relevant is not the primitive real interest rate we get by subtracting the rate of change of capital

prices from the nominal interest rate; rather, it is the notion of the cost of capital. Calculating this capital cost using the most straightforward method available (Chart 22 [1]),¹⁰ we see that not only was the cost of capital lower in the 1990s than in the 1980s, but that compared with its level during the first half of the 1990s it has been even lower in recent years. Carrying out a factor analysis (Chart 22 [2]), it is true that, if we restrict attention to the price of capital goods alone, then in the sense that the drop in the value of capital holdings has been increasing in pace, this has had the effect of pushing up the cost of capital. Yet when we turn our attention to the terms of trade faced by firms carrying out capital investment, we see that, since the general price level of firms' final products has not been declining as rapidly as the price level of the capital goods invested in during the production process, the tide is turned in favor of capital investment; in other words, this has consistently acted as a factor forcing down the cost of capital. We may add to this the effect of nominal interest rate declines that continued until the latter half of the 1990s. Taking all of the above into consideration, we can conclude that factors pushing down the cost of capital have predominated. There is, however, one obvious reservation that needs to be made in this regard, and this is that, as is discussed later, with the nominal interest rate having fallen almost to its lower bound by about the end of the 1990s, there has been little subsequent room to push the cost of capital down any further.

D. Deterioration in the Financial Intermediary Function

As discussed above, when we restrict attention to movements in the cost of capital, while it may be observed that the general price deflation has not in itself had a significant independent effect on capital investment, the deflation in asset prices, on the other hand, having spread via the increase in NPLs from firms' balance sheets to the balance sheets of financial institutions, may well be seen to have had a significant effect overall. Since 1995, financial

9. The GDP deflator for January–March 2003 registered a large decline of 3.3 percent from the previous year. However, there were a number of reasons for this, among which was a significant cut in end-of-year bonus payments to government employees reflected in a sharp drop in the deflator for government consumption, and as such the decline of this magnitude in the GDP deflator can be seen as temporary.

10. In order to calculate the capital cost level precisely, we have to include such factors as tax treatment. These would make the calculation significantly more complicated, and provide only small returns since the resultant estimate would retain a wide margin of error. Consequently, our adopted method of calculation is only rough; however, in the light of the time-series properties of the capital cost, it may reasonably be considered sufficient for our practical purposes here. For more details, please refer to Box 1 on page 58.

institutions have been faced with the necessity of disposing of NPLs far in excess of operating profits from their core businesses (Chart 23). The result has been a cumulative deterioration in their balance sheets that has acted in turn to shake confidence in the continuity of corporate financing and the stability of the financial system, and this may be thought to have caused firms to be even more cautious with regard to risk-taking.

As is well known, Japanese financial and capital markets are still dominated by indirect financing, and even now bank lending makes up almost 50 percent of firms' overall financing (Chart 24). Compared to the United States, where stocks and corporate bonds issued in the market account for 60 percent of total financing and bank lending accounts for 15.6 percent, the share of bank lending in Japan is exceptionally high. As a result, since alternatives to bank lending remain limited, a deterioration in financial institutions' performance of their financial intermediary function may be thought to impact negatively upon the risk-taking abilities of a wide range of firms. In what follows, we present several different analyses in order to confirm this hypothesis.

To begin with, looking at the severity of financial institutions' lending stance in the relevant *Tankan* diffusion index (DI) on lending attitudes (Chart 25), we see that, after becoming briefly severe immediately after the collapse of the bubble, there followed a period, up until around 1995, during which lending attitudes tended to be relatively relaxed, buoyed by sizeable declines in the interest rate. However, from around 1996, with financial institutions becoming more earnest in their NPL disposals and nominal rates gradually drawing closer to their physical lower bound, this tendency toward relaxation in lending attitudes began to look at risk. Then came 1997 and events such as the failures of both large banks and securities companies, against the background of which the financial system became conspicuously more unstable and lending attitudes became suddenly more severe. In 1998, there was a contraction in international financial markets, and combined domestically with the failure of another large financial institution, the effect was to raise concerns toward the year-end about short-term liquidity conditions even at firms that did not represent particularly large credit risks. For a while, the funding environment surrounding firms

took on an atmosphere of crisis. Having experienced this crisis during 1997–98, the extent of the NPLs held within the financial system appears to have reawakened firms' sense of the system's fragility. With the injections of public funds into large financial institutions and the Bank of Japan's ample supply of liquidity to the markets, the lending attitudes DI has improved somewhat since 1999. However, it has yet to return to its pre-crisis level, and banks' lending stance toward small and medium-sized businesses in particular remains severe even today.

In this context, we analyze the factors behind changes in the lending attitudes DI for small and medium-sized nonmanufacturing firms, the sector which may be considered most vulnerable in terms of banks' lending stance (Chart 26). In more detail, we estimate an equation explaining the lending attitudes DI using the following variables: a banks' capital constraint factor (using data on the market value of banks' shares), and a banks' liquidity constraint factor (using data on the bank funding cost premium and the ratio of lending to deposits). Looking at the factor analysis, we see firstly that in 1997–98, at the time of the financial crisis, there was simultaneous deterioration in both the banks' capital constraint and the banks' liquidity constraint factors, and this caused a sharp rise in the severity of lending attitudes. Secondly, looking at developments over the last two to three years, we may note a certain improvement in conditions on the liquidity side, so that another sharp increase in the severity of lending attitudes, as in 1997–98, appears to have been avoided. However, with capital constraints still imposing harsh restrictions on banks, it is difficult to see the improvements on the liquidity side being rapidly translated into a significant turnaround in lending attitudes.

In order to ascertain whether or not lending attitudes at banks have actually had any effect on firms' capital investment, we look at developments in capital spending by sector (Chart 27), where we see that a large dip in capital spending at small and medium-sized nonmanufacturing firms in 1998 then spread to include manufacturing firms which reduced their capital spending the following year. From these developments, it seems highly likely that the 1998–99 phase of reductions in capital investment owed its origin to the financial shock. This can be contrasted with the drop in capital spending

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

between 2001 and 2002, which was concentrated in the manufacturing sector, indicating that it owed its provenance to the end of the IT boom.

As an alternative means of investigating the influence of banks' lending attitudes upon capital investment, we estimate simple equations to explain capital spending at small and medium-sized firms. Specifically, we set up the equations using the two standard variables, the stock adjustment factor (business fixed investment in the previous year/cash flow) and the firm's internal funds factor (cash flow), and we add to these a third variable to represent the lending attitude factor, which we take to be simply the lending attitudes DI (Chart 28). We discover that as far as small and medium-sized firms are concerned, there is a statistically significant financial effect both for manufacturing and nonmanufacturing firms, such that an improvement in the lending attitudes DI is associated with a rise in capital spending, and vice versa.¹¹ We note also that the parameter and its significance are larger for nonmanufacturing than for manufacturing industry. This rudimentary analysis supports the contention that the capital investment of small and medium-sized firms, and especially of those in the nonmanufacturing sector, is particularly susceptible to the financial intermediary function.

Concern that the rudimentary analysis above may in fact be too simplistic motivated us to perform a more comprehensive analysis. As was mentioned in Section II.C, it is highly likely that the deterioration in firms' own balance sheets also impacted negatively upon their capital investment, and we would like to not only investigate this hypothesis but also take a simultaneous look at the validity of our additional hypothesis: that the state of financial institutions' balance sheets also acted to suppress firms' risk-taking behavior. Carrying out such an investigation with the limited amount of information contained in the aggregate data is problematic. For this reason, making use of the Development Bank of Japan's databank of firms' financial statistics and other

data,¹² we created panel data that contain complete information on (1) individual firms' financial conditions, (2) individual financial institutions' financial conditions, and (3) which firms have borrowed most from which financial institutions.¹³ More specifically, we first split the sample of 1,100 firms into those with access to the corporate bond market and those without such access. We then investigated, for each firm, whether the deterioration in its own balance sheet (measured by the rise in its ratio of debt to assets valued at market prices) and the deterioration in the balance sheet of the financial institution lending to it (measured by the fall in its risk-adjusted equity capital ratio¹⁴) had had any negative effects on the capital investment of that firm. The results proved interesting (Chart 29). First, regardless of whether or not a firm had access to the corporate bond market, the deterioration in its own balance sheet had a statistically significant negative impact on its capital investment. If we force a comparison between the two groups of firms, we can also observe that the state of their own balance sheets proved more important for the capital investment of firms without access to the corporate bond market and whose means of financing were therefore limited. Second, deterioration in the balance sheet of the financial institution lending to a firm had no impact upon the capital spending of firms with access to the corporate bond market. However, it proved a constraining factor on the capital spending of firms without bond market access, and therefore with a lack of alternatives to bank lending for their financing.

If firms do not have confidence in their lenders' financial conditions and hence their own access to capital markets appears to be critical, as suggested by the analysis above, it becomes perfectly reasonable for firms with lower credit ratings to choose to concentrate their efforts on the financial restructuring needed to secure higher ratings. In fact, looking at the uses to which cash flow is put across different

11. When we applied the same analysis to large firms, statistical significance of the right sign was not found.

12. The Development Bank of Japan's databank of firms' financial statistics contains data on all firms listed in the first or second sections, or the emerging market section, of the "big three" stock exchanges.

13. This analysis draws upon the results of T. Nagahata and T. Sekine, "The Effects of Monetary Policy on Firm Investment after the Collapse of the Asset Price Bubble: An Investigation Using Japanese Micro Data," Bank of Japan Research and Statistics Department Working Paper Series, March 2002. For a detailed account of the data used, the data processing methodology, the suppositions and theoretical framework upon which the analysis is based, as well as a discussion of the estimating methodology and its results, please refer to their paper.

14. The risk-adjusted equity capital ratio provides an estimate of the liquidation value of a bank should all of its loans under risk management turn sour. It is therefore a conservative measure of the bank's equity ratio that does not count deferred tax assets at all. For a detailed definition, please refer to Note 5 to Chart 29.

credit ratings (Chart 30), we see that firms with low credit ratings allocate a high proportion of cash flow to paying back debts, leaving them less freedom to engage in capital spending.

As we understood from the discussion in sections II.C and II.D, it is most likely that the asset price deflation has had a chronic suppressant effect on firms' capital investment not just through its direct influence on the health of their own balance sheets, but also via the deterioration it has caused in financial institutions' balance sheets. Yet it is not appropriate to attribute this dwindling in the financial intermediary function since the 1990s solely to the increase in levels of NPLs. Provision of funds by financial institutions in Japan has habitually relied heavily on collateral backed by real estate, especially for lending to small and medium-sized firms. However, with (1) the trend of rising land prices coming to an end, and (2) the increasing incidence of profit opportunities, such as those in IT, where material collateral is in short supply, such traditional methods of financing have become more and more difficult to apply. At the same time, the direct financing markets, whereby the risks of projects are shared among various types of investors, have not been fully developed in Japan. It is not, therefore, just the NPL problem that is behind the long-term torpidity of firms' risk-taking behavior. Another important factor has been the lack of sufficient progress in establishing a model for financial intermediation to replace lending that uses real estate as collateral.

It is also important to be aware, however, that the weakness of the real economy has put financial institutions' balance sheets under additional stress. First, with potentially profitable lending or securities investment opportunities in shorter supply, the environment has proved unfavorable for financial institutions to strengthen their cash flow. Second, the sluggishness in share prices reflecting the long-term stagnation in the economy has resulted in increasing losses on shareholdings, and this in turn has added to the burdens placed upon financial institutions' balance sheets. In short, it is likely that a vicious circle has been at work, in which weakness in the real economy acts to debilitate the balance sheets of financial institutions, and this then puts constraints on the risk-taking behavior of firms.

The standard prescription for dealing with such a vicious circle is to lower interest rates via monetary easing. Such a lowering of market rates allows financial institutions to maintain or indeed expand their margins, while at the same time stimulating firms' demand for loans by lowering lending rates. With regard to actual developments of interest rates, however, we observe the following (Chart 31). The overnight call rate, the rate used in the interbank markets for overnight transactions, dropped below 1 percent during the mid-1990s, and, with the exception of one brief period, has remained close to zero since 1999. The movements of the 3-month rate have roughly followed those of the overnight rate, except during periods such as the 1997–98 financial crisis. Long-term rates also dropped to a low level of between 1 and 2 percent, at the end of the 1990s. Since all of these rates are subject to the constraint that they cannot fall below zero percent, the pace of decline was forced to slow during the latter half of the 1990s, and at the end of the 1990s short-term rates in particular reached what can be considered to be practically their lower bound. For this reason, even the so-called “quantitative easing measures” adopted by the Bank of Japan since 2001, although they have been successful in defusing liquidity concerns and thereby preserving the stability of the financial system, have run into inevitable limitations in terms of their effectiveness in stimulating risk-taking by firms and financial institutions via interest rates.

E. Decline in the Expected Growth Rate

Amid simultaneous deterioration of both the real economy and the financial intermediary function, low economic growth has been sustained for years. This in turn has translated into a downward trend since the 1990s in expectations of economic growth held by firms. According to the Cabinet Office survey, firms' expectations with regard to macroeconomic growth over the next three years have recently fallen to as low as 0.6–0.7 percent (Chart 32, bold line).¹⁵ We have discussed the recent fall in capital spending relative to firms' cash flow in Section I (Chart 5). Taking the ratio of business fixed investment to cash flow, we now observe that its downtrend roughly follows that of the expected growth rate shown above (Chart 32, thin line). We

15. Although not shown here, the same survey also investigates firms' expectations for the growth rate over the next five years, and according to the 2003 survey, this had also fallen to a low level of 1 percent.

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

may thus explain the relative weakness of business fixed investment to cash flow in the context of the low expected growth rate.

In addition to survey-based methods such as the above, it is also possible, by looking at actual trends in capital spending, to retrieve at least a broad idea of the expected growth rate that lies behind them. For this purpose, we need to make several assumptions, including the existence of a fairly steady relationship between the expected growth rate over the medium term and the growth rate of the capital stock. The so-called capital stock cycle diagram shown in Chart 33, which can be drawn based on these assumptions, illustrates the relationships that can be thought to exist between the capital stock, the expected growth rate, and capital spending at any given point in time.¹⁶ Looking at Chart 33, we may observe that the capital cycle, tracing out its clockwise rotation, has experienced a sharp leftward shift during the 1990s. More specifically, the large cycle of the bubble period was consistent with an expected growth rate of 4–5 percent, while the cycle in the first half of the 1980s corresponded to an expected growth rate of about 3 percent. Since around 1998 after a significant leftward shift, however, the location of the investment cycle strongly suggests that the expected growth rate has fallen to 1 percent or lower, and in this sense it offers broadly corroborative support to the results of the survey.¹⁷

The decline in the expected growth rate may be partly attributed to the demographic changes taking place in Japan, namely the peaking out and aging of the population. If such a demographic factor is the main reason for the decline in expectations of growth, then the continued decline and the accelerated aging of the population, which are actually anticipated, will make it difficult indeed to hope for any recovery in the expected growth rate. However, looking at Chart 34, which illustrates the economic growth rate per member of the working age population (i.e., those aged 15–64), we still find that the growth rate per person declined substantially during the last ten years from where it had been in previous decades.

This suggests that the fall in the economic growth rate since the 1990s, which also brought the expected growth rate down, has its deepest roots not in demographic factors but in the various economic structural factors discussed above.

III. Corporate Reorganization and the Future Industrial Structure

A. Developments in and the Gradual Spread of Corporate Reorganization

In Section II, we discussed the background to the long-term stagnation in business fixed investment since the 1990s, putting forward a number of factors that may be considered relevant in this regard, as well as suggesting the possibility that several of these factors may well be interacting and reinforcing one another to produce a vicious cycle. Among these various factors, there are those that it is fundamentally difficult to do anything about directly. For example, until the actual growth rate registers a decent run of sustained growth, we cannot reasonably hope for much of a rise in expectations of the growth rate over the medium term. Similarly, as far as asset prices in general are concerned, there is a limit to what can be done directly to buoy these using artificial means. In the case of share prices, for example, it is difficult to visualize measures for dealing with share prices that will have any sort of enduring effect, other than the more indirect approach of raising firm growth and overhauling the market structure so that it is attractive to investors.

In light of this, it becomes clear that finding a way out of this low-growth vicious circle must ultimately involve imposing change upon the factors which we suggested were causing the long-term stagnation in sections II.B and II.D. In other words, it is essential to increase the flexibility of the corporate system and restore fully functional financial intermediation. What this means in practice is structural reform, a series of market-oriented tasks to overhaul various aspects of the financial and economic framework to improve the allocation of resources.

16. For a more detailed commentary on Chart 33, please refer to Box 2 on pages 59–60.

17. Even during periods of long-term stagnation, business fixed investment can still have phases of cyclical recovery, and fiscal 2003 is set to be one such phase according to the capital stock cycle diagram in Chart 33. More concretely, following the thinking illustrated in the diagram, the theoretical rate of increase in the capital spending in fiscal 2003 is determined at the intersection of the vertical line indicating “business fixed investment/capital stock, at the end of FY 2002,” and a bipolar curve representing the expected growth rate. In this case, even with the expected growth rate over the medium term remaining under 1 percent, it would be fairly plausible for capital spending in fiscal 2003 to rise compared with the previous year. However, considering this from another angle, it is important to be aware that, even if capital spending does indeed rise somewhat in fiscal 2003, it would not in itself be a sign that the expected growth rate is finally rising.

Once the nature of structural reform is identified as above, then its observable effects will be the following: (1) increased activity in corporate consolidation and reorganization; (2) a rise in market entry; (3) a reduction in excess debt, capital, and labor, i.e., those production resources that are not being used efficiently; then (4) ultimately, a rise in medium-term profitability and the economic growth rate; and (5) possibly with an accompanying rise in share prices reflecting such future prospects.

Of these, changes of a sort are already taking place with regard to the corporate reorganization mentioned in (1), partly as a result of regulatory and other institutional changes to encourage them. For example, there was a sharp rise in the number of cases of M&A in 1999–2000 (Chart 35), and this figure has maintained a high level since then. Looking at the breakdown, we also observe that, in contrast to the bubble period at the end of the 1980s when the majority of M&A activity comprised takeovers of foreign companies by Japanese firms, recent increases in such activity have overwhelmingly involved cases where both parties are Japanese companies. The background to increases in these types of M&A activity has not only been supplied by changes in firms' attitudes, with M&A becoming a more important strategy for survival and the recovery of profitability. The increases have also been substantially affected by the progressive revisions made to the accounting and legal systems since around 1997, which have made M&A easier to put into practice (Chart 36). In particular, the revision made to the Commercial Code in October 1999 legitimizing equity swaps is said to have played a major part in promoting M&A activities by acting to reduce the financing costs involved.

Looking at developments in major industries, we can see various types of reorganization such as (1) consolidation of excess capital, (2) enhanced concentration on key business areas, and (3) acquisitions activity attending the process of survival of the fittest.

The industry that stands out most vividly in terms of consolidation of its excess capital is the materials industry. Industries such as steel, oil, cement, chemicals, and paper and pulp, with domestic demand trending down and the pressures from international competition ever mounting, have been facing an inevitable deterioration in profitability and a chronically low capacity utilization rate since

the 1990s. Over the course of the last few years, however, there has been an increasing degree of consolidation, with a substantial rise in the market share of the largest two to three firms in each industry, with the result that we have witnessed signs of abatement in the extent of excess competition (Chart 37). It was basically against this background, although supported by economic growth in East Asia and particularly in China, that in fiscal 2002 the materials industry enjoyed a recovery in prices and therefore an improvement in profits. These developments may explain the increases in the planned business fixed investment for fiscal 2003 in the steel and chemicals sectors.

Reorganization under enhanced concentration policies, the second of the examples mentioned above, is typified by the electronics industry. With production capacity in East Asia continuing to expand for such goods, including for personal computers and other IT-related products, there has been a growing awareness within the industry of the necessity of focusing on strategically important sectors, allocating business resources selectively and intensively. This awareness has led Japanese firms to concentrate their most determined efforts on markets where global demand is still expanding and they retain a comparative advantage, good examples of which include digital home appliances, cellular phones with built-in cameras, and more importantly, electronic devices used in these products. System LSI, flash memory chips, and other high-value-added electronic parts with an expanding range of applications have been increasingly established as the focus of strategic efforts, and with firms looking to share the risks and the funding costs of R&D and investment, this has led to more business consolidation and the forming of comprehensive partnerships. In the more general-purpose DRAM sector, on the other hand, many firms are already withdrawing. Those manufacturers who have survived this industrial restructuring are, however, resolved upon active capital investment programs, although these are mainly focused on the markets related to the aforementioned household electronic appliances. As for large-scale LCDs, firms have adopted a variety of different strategies amid tough competition from Asian companies and a sharp divide has gradually begun to emerge, ranging from companies who are licensing out their operations to foreign companies while in effect withdrawing from

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

production, to those who are strengthening their domestic production and putting renewed energy into large-scale investment projects scheduled over the next two to three years.

The third type of corporate reorganization is acquisitions activity attending the process of survival of the fittest. A large number of cases in this category can be seen in the retail sector, where markets have been increasingly mature and competition correspondingly brutal (Chart 39). The increasing savagery of competition in the retail sector in recent years has been set against the following background: (1) consumers becoming more selective when making purchases; (2) the deregulation that has increased its pace since about the mid-1990s; (3) the inflow of exports from China and other East Asian countries; and (4) market entry by affiliates of large foreign firms. Business strategies for adapting to this environment have included the pursuit of scale economies by expanding outlets, the attempt to retain customers with frequent store refurbishment, and using IT investment to raise the efficiency of physical distribution and inventory management. Yet, while the importance of such strategies has been rising, many firms simply do not possess the financial resources to undertake the investment involved, or cannot survive as a result of the stiff competition. For this reason, there have been a large number of cases in recent years of retailers pursuing reorganization, examples of which include local supermarkets forging alliances, stronger firms putting the remaining resources of bankrupt firms to more efficient use, and so forth.

An additional factor that has been acting to promote consolidation involving weak firms, across industries, has been a renewed emphasis by the government on a faster pace of NPL disposal. It should be noted that when the government hammered out its financial revitalization plan in the autumn of 2002, the importance of industrial revitalization was clearly identified in the context of the accelerated disposal of NPLs.

The above discussion describes various forms of progress that are being made in industrial reorganization. However, these still amount to no more than signs of change. It would be premature to see them as evidence that a dynamic reallocation of resources is already underway. We are still only halfway through the process of streamlining excess capital and other resources that are used inefficiently.

Looking, for example, at firms' overall sense of the levels of excess capital and labor as reported in the *Tankan* DI (Chart 40), we observe that, although in comparison to the peaks hit in 2001 these continue to undergo cyclical reductions, it is still hard to claim that we have now broken away from the levels of structural excess present since the 1990s. Little progress has been made toward the recovery of financial intermediary functions. Signs of risk-taking are still far from widespread. Given the situation, we should expect it to take quite some time before we see progress in the appropriate reallocation of resources, and before this produces an expanding macroeconomic equilibrium that includes even small and medium-sized firms.

B. Direction of Change in the Industrial Structure

Thinking about the industrial shape that will emerge as a result of progress in the reallocation of resources, and more specifically about where employment will be created and where new investment will occur, we run into a difficulty: namely that, since it will ultimately be market mechanisms that provide the answers to these questions, drawing a detailed picture in advance is unrealistic in the first place. However, using a broad brush, we may summarize two aspects of the essential direction being taken by the industrial structure in Japan, an advanced, already matured economy with an aging population.

First is the evolution of manufacturing into an industry producing high-value-added, technology-intensive goods. If the high growth in China and the East Asian countries continues and the trend of globalization does not fade, it is fairly certain that the shift of production bases overseas and the growing import penetration will continue. In these circumstances, for Japanese manufacturers to maintain high profitability and contribute to the country's economic growth as a whole, they will have to concentrate their efforts on areas such as information, the environment, energy, and medical care, where there remain good prospects of global demand for advanced technologies. Working within these fields, the key will be to maintain or indeed sharpen their technological edge and, more importantly, to transform it into a stream of profitable products. In order for Japan to survive as a technologically advanced country, its efforts must be deployed on several important fronts, including due cooperation between industry and academia, the

nurturing of human resources, and an overhaul of the system protecting intellectual property rights. Above all, it is absolutely essential to promote the corporate system's active engagement with the task of unearthing business opportunities, and to strengthen the financial and capital markets that support such corporate activity.

The second point relating to the direction of change in the industrial structure is the shift in employment from the manufacturing and construction sectors to tertiary industry. As described above, the source of potential value for manufacturing industry lies in concentration on technology and increasing the focus on high-value-added products. This suggests that the manufacturing sector, if all goes successfully, will bring about higher wages for skilled workers, an increase in business profitability (including profits repatriated from companies' foreign businesses), and consequent gains in share prices. However, with expansion of production bases mostly set to take the form of expansion of bases overseas, we cannot hold out much hope for growth in domestic manufacturing employment, even if the Japanese economy were to regain its vitality. As for the construction industry, with the fiscal positions of both central and local governments such that reductions in public investments are set to continue, and with the population forecast to peak in 2006 and then start declining so that growth in housing construction is unlikely, a long-term contraction in demand is expected (Chart 41). In the service sector, on the other hand, against the background of the rise in the active participation of women in society, societal aging, and the growing diversification of lifestyles, demand is likely to increase for medical care, education, entertainment, help in the home, and a whole variety of services aimed at households. In a similar way, the transformation to a flexible corporate system, the importance of which has been stressed repeatedly in this paper, will itself result in increased demand for a range of services aimed at businesses, via the growing prevalence of outsourcing. In this context, if we compare data on outsourcing with comparable figures for the United States (Chart 42), we may observe considerable room for outsourcing to bring further gains in the efficiency of resource allocation, especially in the areas of IT and general affairs. Furthermore, turning our attention to what is required to invigorate M&A activities, corporate revitalization, and the emergence of new

start-ups, there would also appear to be a number of business opportunities in financial, legal, accounting, and other knowledge-intensive tertiary services that provide the infrastructure for such activities. Although there are a variety of different businesses lumped together in this way under the category of "tertiary industry," more than a few of these are, by their very nature, businesses where it is difficult to replace labor with capital equipment. Consequently, if these tertiary industries are indeed able to grow in response to the changing needs of society, then we may reasonably expect a shift of employment from the manufacturing and construction industries, as the growing service sectors absorb surplus labor.

There are a number of possibilities to be considered when we think about the effects upon business fixed investment of these changes in the industrial structure. For example, while manufacturing may be thought to be a growth sector in terms of capital investment when we view it from the perspective of the substantial spending that will be necessary for R&D, this is only part of the picture. When we think about the production process itself, there will probably be a limit to expansion in domestic capital investment, even in industrial sectors such as materials and semiconductors where there is a high degree of capital intensity. A similar diversity may be seen in the nonmanufacturing industry. Here, in services, retailing, and other inherently labor-intensive sectors, it is difficult to imagine a strong upward trend of capital investment emerging. On the other hand, it is conceivable that IT investment will increase in information-intensive sectors such as finance. In the meantime, the extent of capital demand in the telecommunications and other infrastructure-related sectors will probably depend on various factors like the evolution of technology and the way that societal needs change.

In this regard, taking as an example what actually happened in the 1990s in the United States, which enjoyed high economic growth, we observe the following. To begin with, the aforementioned two structural changes inherent in an advanced economy actually occurred: (1) an increasing focus by manufacturers on high-value-added products; and (2) a shift of employment toward tertiary industry. Additionally, with regard to capital allocation, (3) the driving forces behind capital investment were the financial and telecommunications sectors, caught up in the momentum of the IT revolution. Breaking

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

down the U.S. real GDP and employment statistics into their manufacturing and nonmanufacturing components (Chart 43), we see that high growth was achieved in manufacturing from a relatively early stage in the 1990s, and that this continued throughout the decade. However, during this period there was almost no change in the number of those employed. What this implies is that the high rate of growth in manufacturing was achieved mainly via increases in the value added by each worker, or putting it another way, via a rise in the productivity of labor. In nonmanufacturing, however, while a rise in the productivity of labor becomes visible in the latter half of the 1990s, the main feature of the sector was its capacity to absorb labor throughout the 1990s.

Looking further at the breakdown in nonmanufacturing, we can identify several interesting facts. The first is that, although most individual industries, namely, services, finance, insurance, and real estate, wholesale trade, retail trade, and public services (telecommunications, etc.), all contributed to the high growth in nonmanufacturing as a whole during the latter half of the 1990s, there were substantial differences in their respective capacities to absorb labor (Chart 44). The predominant contributor to labor absorption was the service sector, followed by retail trade and then construction. Putting this a different way, we can say that, just as in manufacturing, the high growth rates in the remaining sectors such as finance, insurance, and real estate, and public services (telecommunications, etc.), were basically achieved via rises in the productivity of labor. In fact, it is these exact sectors that were also the main contributors to the expansion in U.S. capital investment (Chart 45 [1]), generating gains in labor productivity by raising capital intensity. In manufacturing, however, in spite of the extremely high growth rates achieved over a long period of time that we mentioned above, the industry made only a limited contribution to either employment or capital investment.

To sum up and to some extent to simplify, the U.S. economy during the latter half of the 1990s carried out a reallocation of its resources attended by a combination of the following developments: (1) high growth in the IT-intensive nonmanufacturing industries such as finance and telecommunications, achieved mostly through additional capital input; (2) high growth in services and retailing, achieved

mostly through additional labor input; and (3) continuing high growth in manufacturing, due to neither capital input nor labor input but achieved mostly through technological advances (i.e., gains in total factor productivity). Of these, it may well be said with the benefit of hindsight that in (1) there were a number of areas where investment was perhaps excessive. However, considering the heightening of global competitive pressure and the tightening of the labor market that characterized the business environment in the latter half of the 1990s, this dynamic reallocation of U.S. resources can be regarded as rational at least qualitatively.

In this relation, looking at capital investment in Japan during the latter half of the 1990s (Chart 45 [2]), we see that, amid generally low growth, it was the manufacturing and service sectors which were the main positive contributors. If Japan's capacity for growth is to rise, we can say little at the current juncture about whether it will do so in the manner of the United States in the latter half of the 1990s, with a new burst of investment led by the financial and telecommunications sectors; or whether any fresh growth will require an even more central role for the manufacturing sector. Even assuming that the aforementioned two structural changes inherent in an advanced economy do indeed take place, Japan will still have its own particular areas of comparative advantage, and it will need to discover the appropriate way to allocate its resources accordingly.

IV. Conclusion: The Importance of Corporate Governance and Exposure to Market Discipline

An appropriate allocation of Japan's resources consistent with its own unique characteristics is something that will ultimately only be discovered by trial and error, as firms exposed to the rigors of market discipline seek to maximize their profits. In this regard, an important step toward making sure that markets function in an orderly manner involves overhauling the market environment so that information needed to evaluate the risks and expected profitability of a variety of business opportunities can be commonly accessed by the greatest possible number of people, and that market prices are found for as wide a range of assets and businesses as possible.

In fact, there has recently been a growing trend toward raising the liquidity of various assets,

including real estate and accounts receivable. For example, the growth of the market in Japan for securitized real estate owes much to the gradual accumulation of know-how sparked by changes in the legal system over the past several years (Chart 46). Similarly, the process of moving forward with disposals of NPLs was first dependent upon foreign-affiliated companies, but recently Japanese companies are also becoming active, with a number of corporate revitalization funds being established. This can be regarded as a small but significant step. In this context, the IRCJ, which has recently begun to operate, may manage to provide the breakthrough necessary to speed up structural reform, by performing the role of deal arranger and acting to invigorate the corporate revitalization business in the private sector.

Raising the liquidity of fixed assets is not simply a means of transferring the risk of holding these assets to other investors, it also has the even more important effect of exposing assets to rigorous evaluation by the markets and thus encouraging those with influence over the quality of these assets to do their best to maximize their value. In the case of real estate, this would involve raising its physical attractiveness; for firms in depressed circumstances, it would involve thorough restructuring and the search for a new business model. In a broad sense, the dissolution of cross-shareholdings is another example of increasing the liquidity of fixed assets, and it may be considered an essential condition for

improving the performance of corporate governance by shareholders. In the same context, the key to reinvigorating small and medium-sized firms, which constitute the industrial base as well as provide the breeding ground for new business start-ups, may well be found through seeking to expose their business risks to market-based evaluation as much as possible. In recent years, efforts have been made to provide financial data for small and medium-sized firms in a standardized and commonly accessible form, a good example of which is the “Credit Rating Database for Small and Medium-Sized Firms” (CRD). Based on such an infrastructure, it is hoped that secondary markets for loans to small and medium-sized firms will develop. With prices available in such secondary markets, it would become easier to originate appropriately priced funding packages, and this would contribute to improving financing availability for small and medium-sized firms. An improved and market-oriented financing environment would also provide potential borrowers with an incentive for better corporate management geared to the creation of value, because they would be forced to engage with these markets through information disclosure.

Building fully functional financial and capital markets and engaging with the task of revitalizing Japanese business may not realistically be expected to produce major results in the short term. Nevertheless, steady progress in these areas is essential for the future of the economy.

Recent Trends in Business Fixed Investment and the Issues

Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 1
Indicators for Business Fixed Investment (GDP Basis)¹

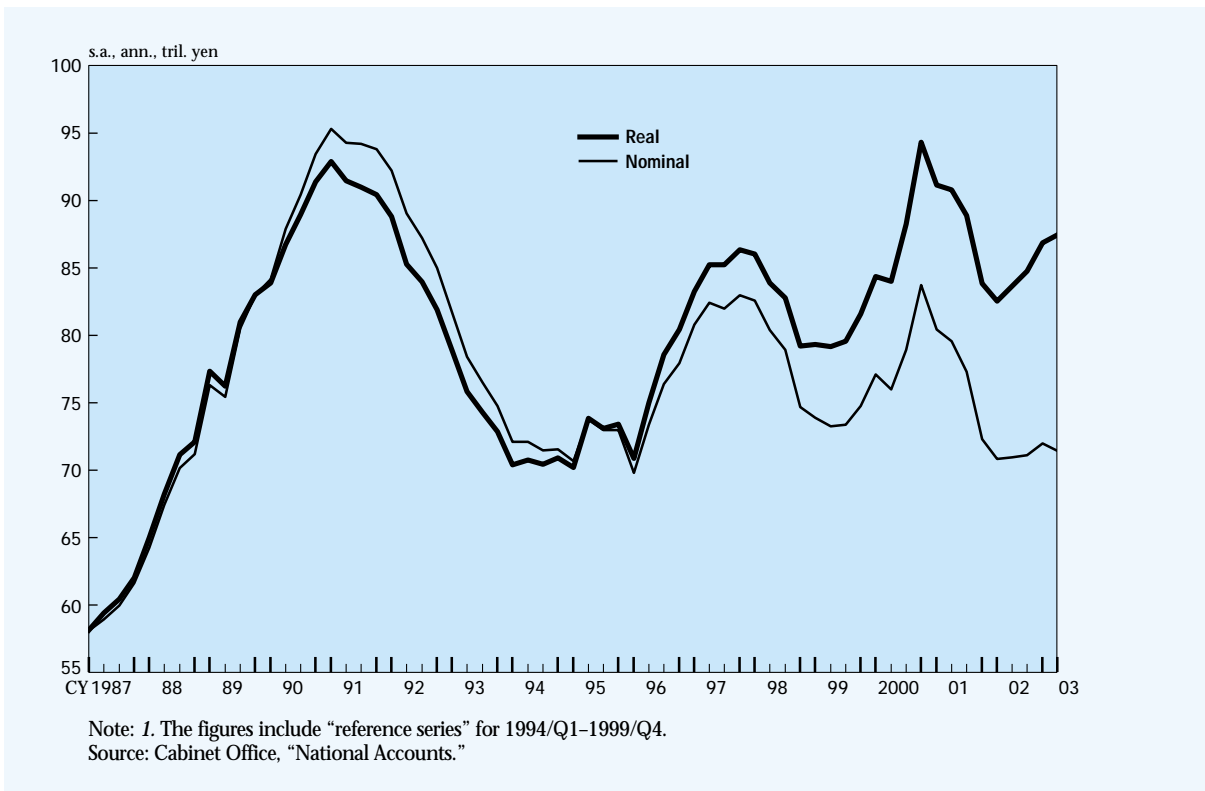


Chart 2
Leading Indicators of Business Fixed Investment¹

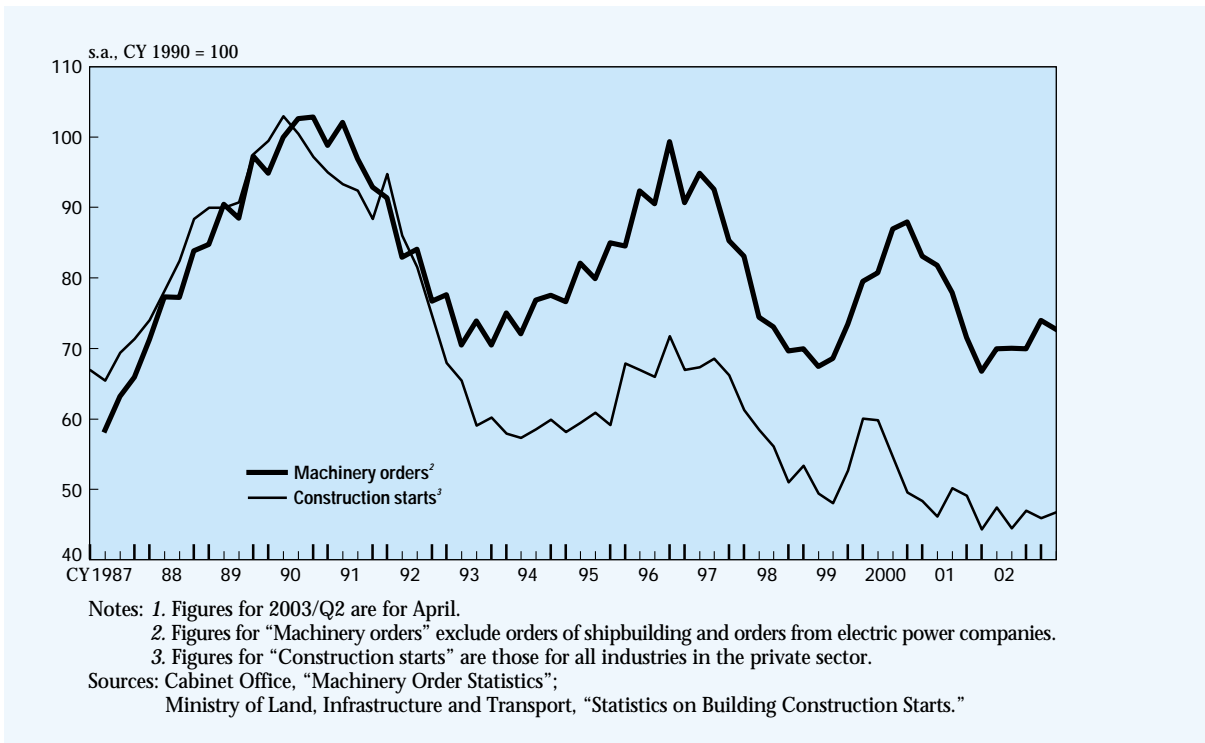
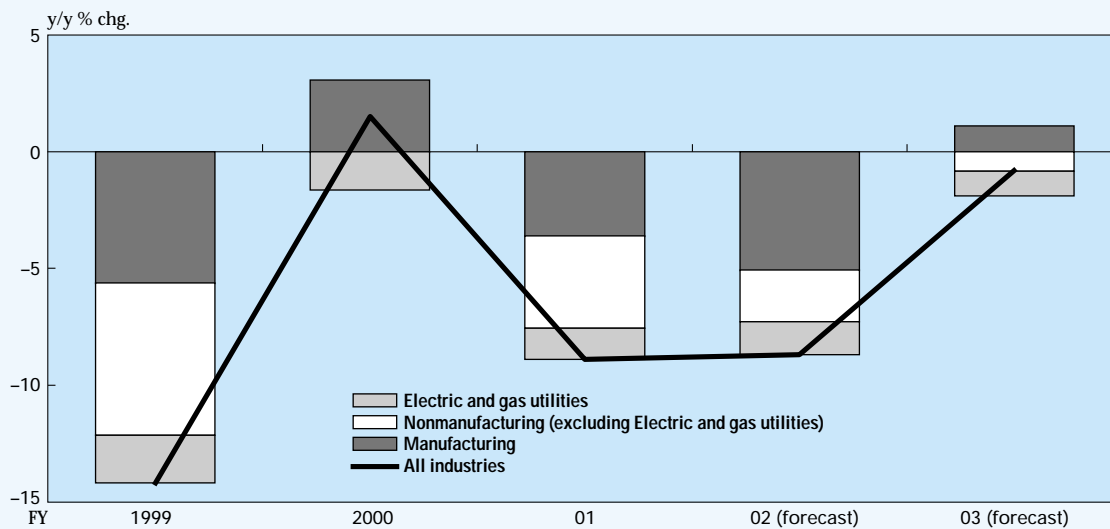


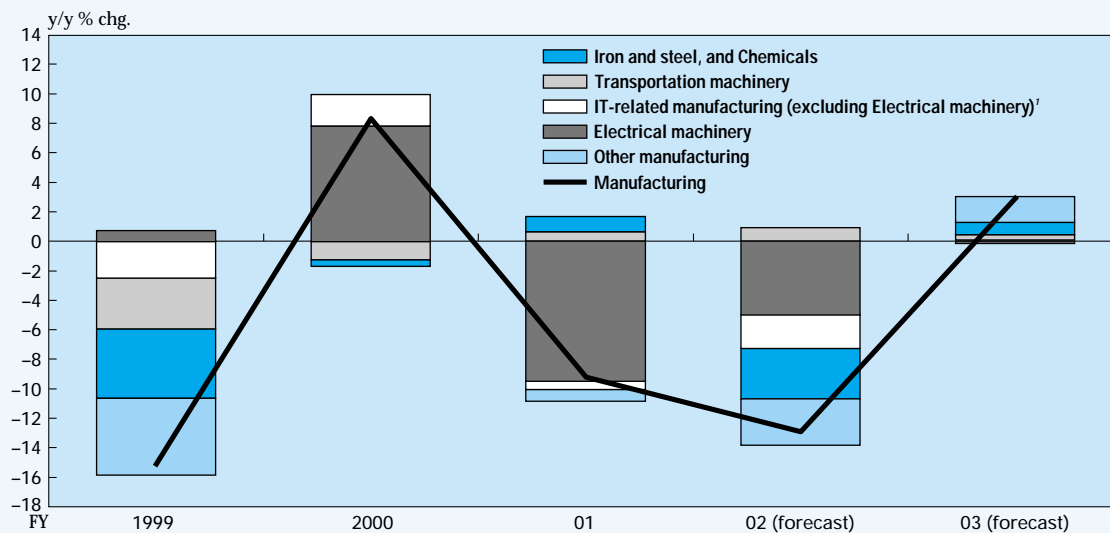
Chart 3

Business Fixed Investment of Large Enterprises: Breakdown by Industry

(1) Large Enterprises



(2) Large Manufacturing Enterprises

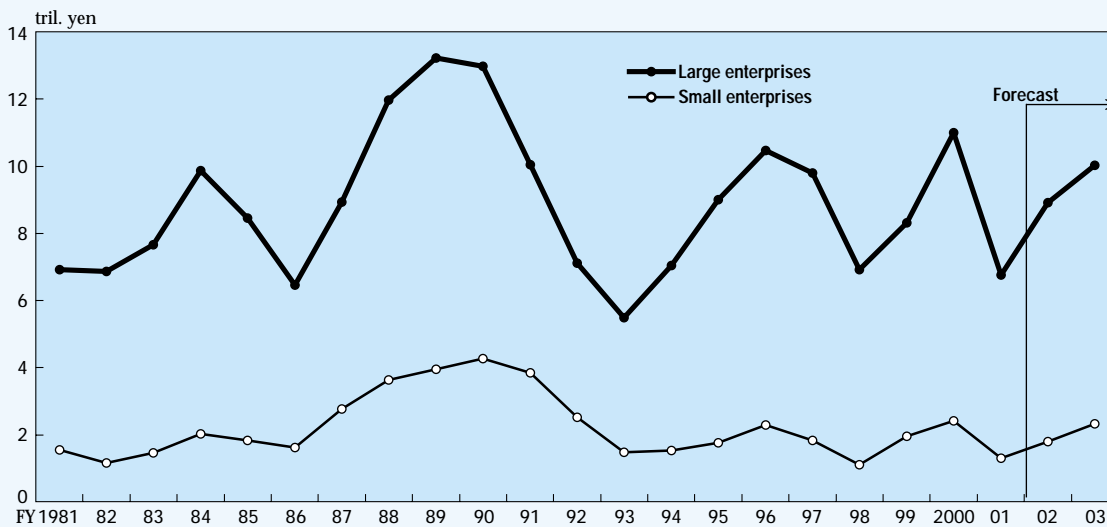


Note: 1. Comprises Nonferrous metals, Industrial machinery, and Precision machinery.
 Source: Bank of Japan, "Tankan—Short-Term Economic Survey of Enterprises in Japan."

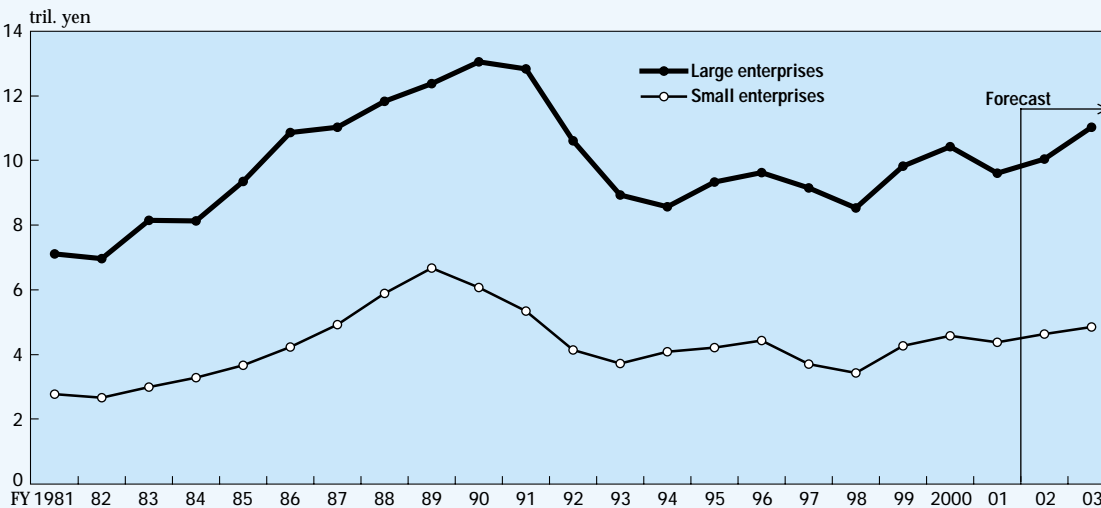
Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 4
Current Profits¹

(1) Manufacturing

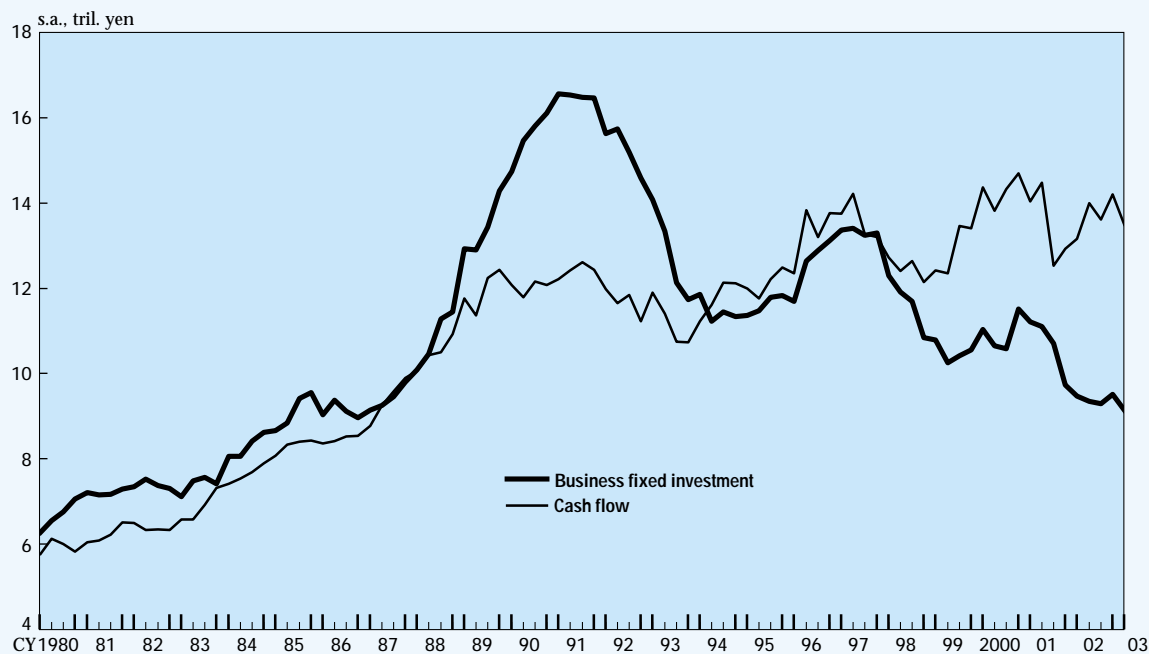


(2) Nonmanufacturing



Note: 1. Figures for current profits until FY 1997 are retrospectively calculated with year-to-year growth rates.
Source: Bank of Japan, "Tankan—Short-Term Economic Survey of Enterprises in Japan."

Chart 5
Cash Flow and Business Fixed Investment^{1,2,3}



Notes: 1. All firms, excluding large firms in Other services. The latter are excluded to avoid a double calculation of figures for holding companies included in large firms in Other services and figures for subsidiaries included in other industries.

2. Cash flow = current profits/2 + depreciation expenses.

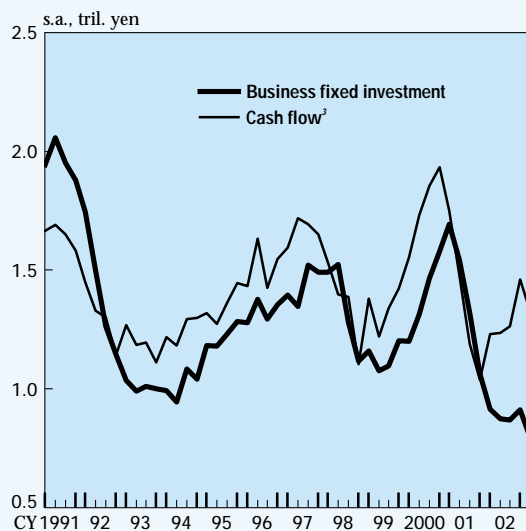
3. Figures are adjusted for sample change, and seasonally adjusted by X-11. The first of these adjustments aims to correct a bias caused by sample change. The method is to adjust the figures in proportion to shifts in the aggregate capital stock and the total assets. Sample changes occur due to (1) changes in the firms sampled in each second-quarter survey, and (2) changes in the respondent firms in every quarter.

Source: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Quarterly."

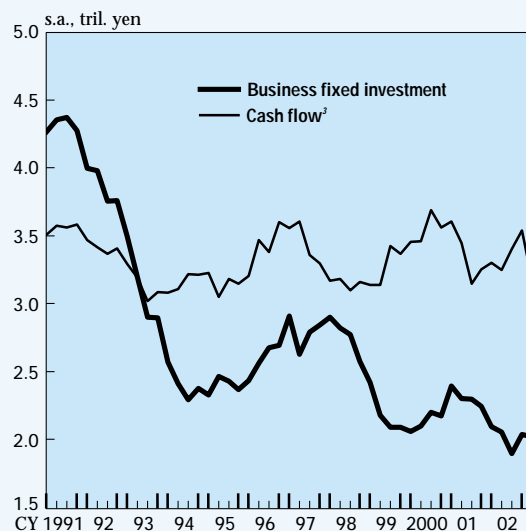
Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 6
Cash Flow and Business Fixed Investment by Sector¹

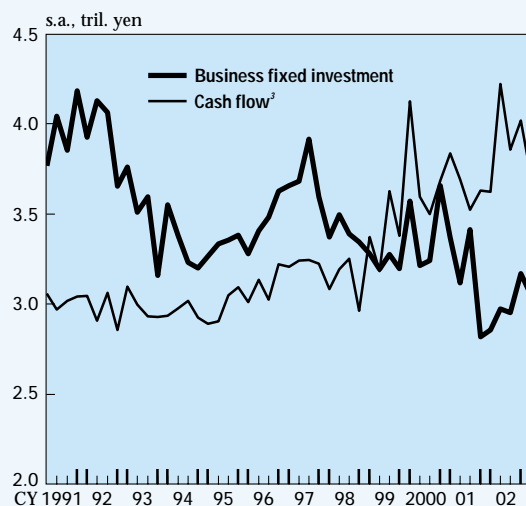
(1) IT-Related Manufacturing Firms²



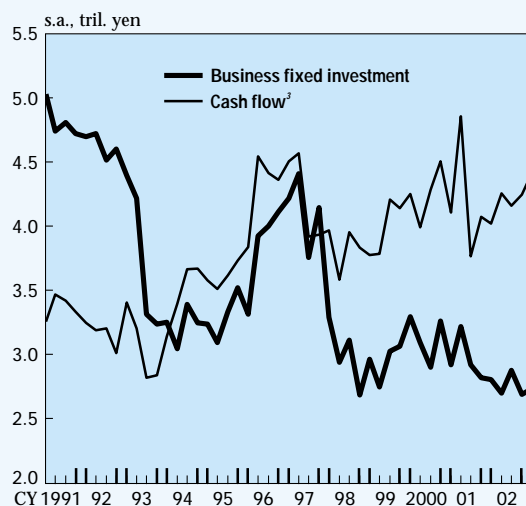
(2) Other Manufacturing Firms



(3) Large Nonmanufacturing Firms^{4,5}

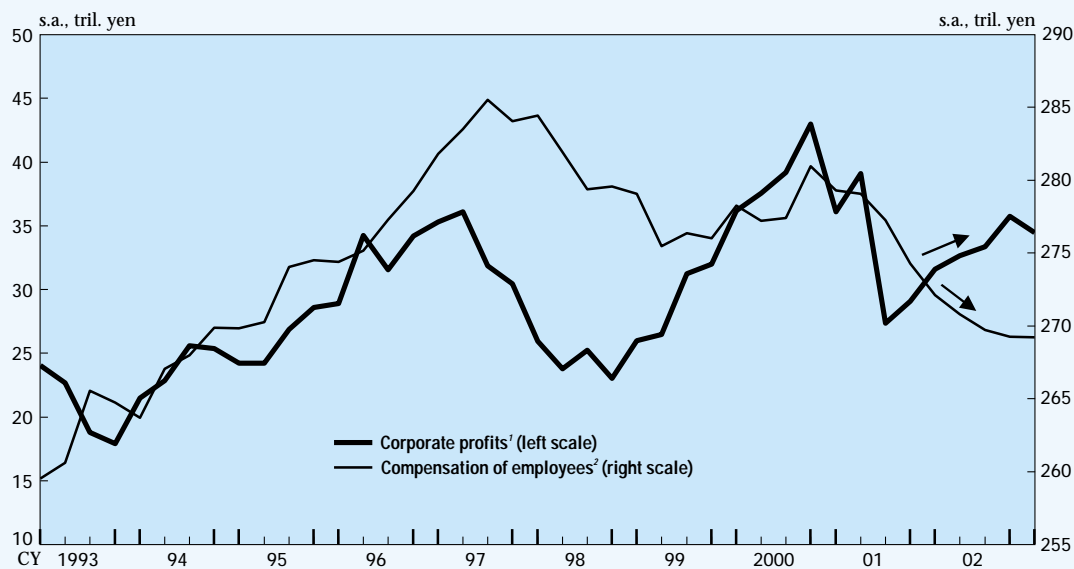


(4) Small and Medium-Sized Nonmanufacturing Firms^{4,5}



- Notes: 1. Figures are adjusted for sample change, and seasonally adjusted by X-11 (see Note 3 to Chart 5).
 2. IT-related manufacturing firms comprise those in Electrical machinery, Industrial machinery, Precision machinery, and Nonferrous metals.
 3. Cash flow = current profits/2 + depreciation expenses.
 4. "Large firms" refers to firms with capital stock of 1 billion yen or more, and "small and medium-sized firms" refers to firms with capital stock of 10 million yen or more but less than 1 billion yen.
 5. Nonmanufacturing firms exclude those of Electric utilities, Gas utilities, and Other services.
 Source: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Quarterly."

Chart 7
Corporate Profits and Compensation of Employees

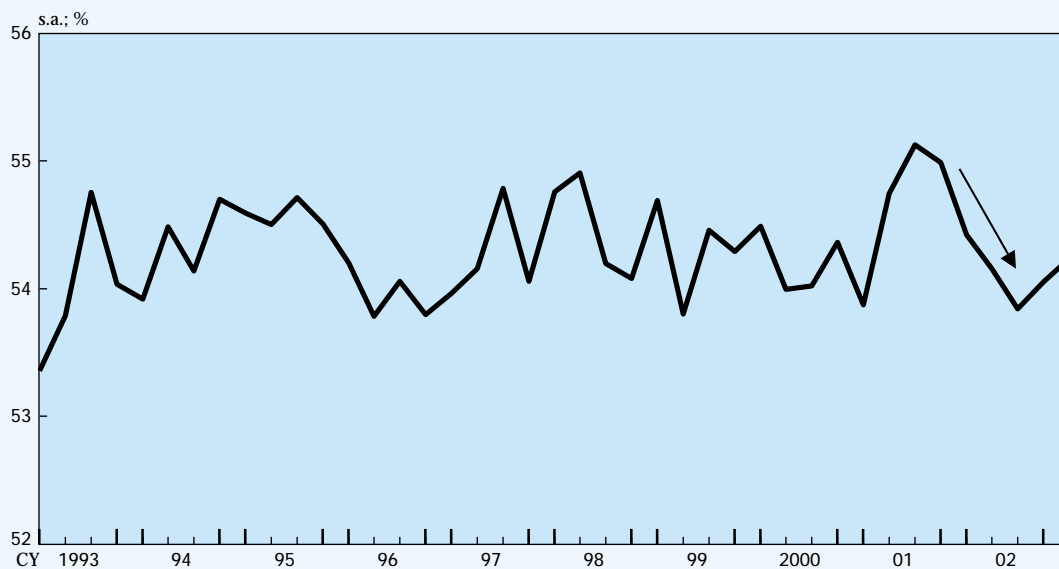


Notes: 1. Figures for corporate profits are the current profits of all firms in all industries excluding Other services in "Financial Statements Statistics of Corporations by Industry, Quarterly." The figures are adjusted for sample change, and seasonally adjusted by X-11 (see notes 1 and 3 to Chart 5).

2. Figures for compensation of employees are taken from the SNA. The figures for 2002/Q2-2003/Q1 are preliminary estimates.

Sources: Cabinet Office, "National Accounts";
Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Quarterly."

Chart 8
Labor Income Share^{1,2}



Notes: 1. Labor income share = compensation of employees/nominal GDP × 100 (all figures are from the SNA).

2. Figures for compensation of employees are from the SNA. The figures for 2002/Q2-2003/Q1 are preliminary estimates.

Source: Cabinet Office, "National Accounts."

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 9
Real GDP¹

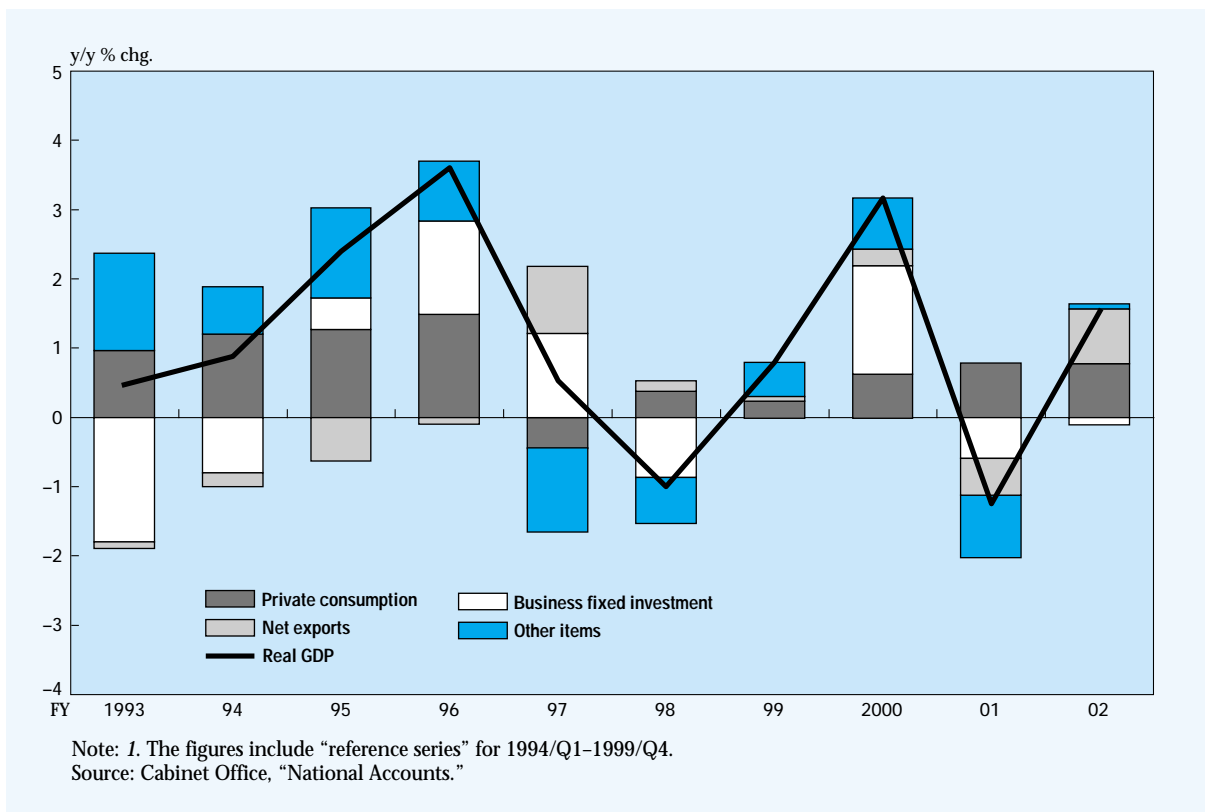
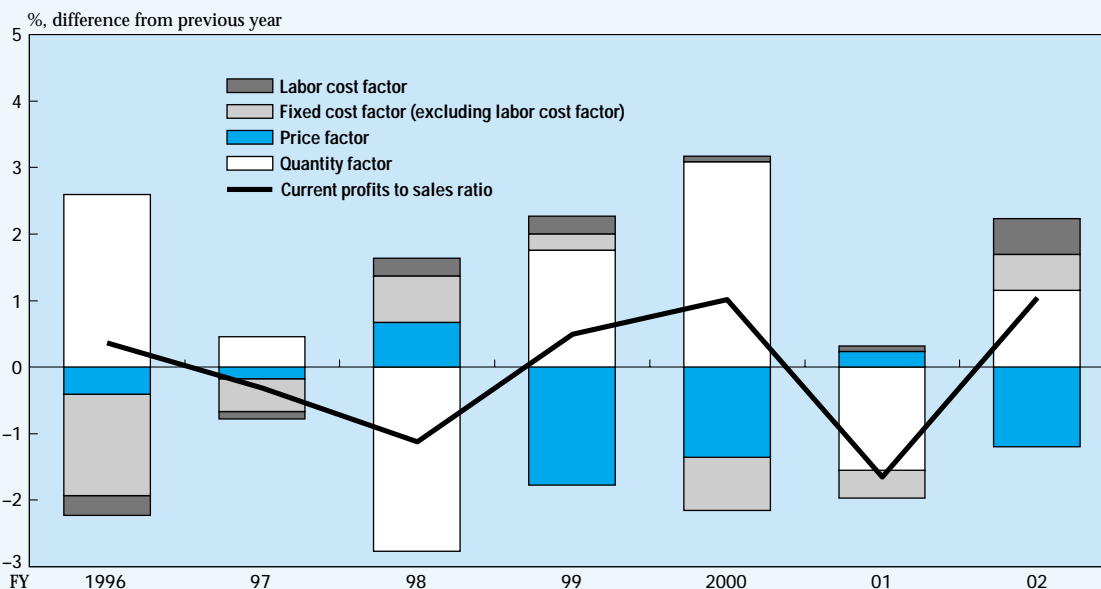


Chart 10
Factor Analysis of Corporate Profits at Large Manufacturing Firms¹



Note: 1. The factor analysis of current profits is based on the method below:

A. Current profits are divided into price factors, quantity factors, and other factors as follows:

$$\pi = P_D Q_D + P_E Q_E - P_I Q_I - FC - LC.$$

(π : current profits, P_D : output price of domestic products, Q_D : domestic sales quantity,

P_E : output price of exports, Q_E : export quantity, P_I : input price, Q_I : input quantity,

FC : fixed cost (excluding labor cost), LC : labor cost).

B. Current profits to sales ratio is π/S (S refers to sales), where $S = P_D Q_D + P_E Q_E$.

Therefore, differences in π/S from its value in the previous year can be broken down into component differences attributable to changes in each of the right-hand-side variables above.

C. "Labor cost factor" refers to the difference attributed to the change in LC . Figures in LC are obtained as the labor cost in "Financial Statements Statistics of Corporations by Industry, Quarterly." "Fixed cost factor (excluding labor cost factor)" refers to the difference attributed to the change in FC . Figures for FC represent the sum of depreciation expenses, nonoperating net profit (or loss), and fixed costs included in other costs in "Financial Statements Statistics of Corporations by Industry, Quarterly." (Fixed costs in other costs are calculated with the data of listed firms.)

D. "Price factor" refers to the difference attributed to changes in P_D , P_E , and P_I . Sales are divided into domestic sales and exports according to the share of exports in sales of large enterprises in the *Tankan*. Variable cost is calculated as total costs minus fixed costs.

E. "Quantity factor" refers to the difference attributed to changes in Q_D , Q_E , and Q_I . This factor is calculated as the total difference minus the sum of the differences attributed to other factors.

Sources: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Quarterly," "The Summary Report on Trade of Japan";

Ministry of Economy, Trade and Industry, "Indices of Industrial Production";

Bank of Japan, "Wholesale Price Indexes," "Corporate Goods Price Index," "Input-Output Price Index of Manufacturing Industry by Sector," "Tankan—Short-Term Economic Survey of Enterprises in Japan";

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Chart 11
Real Business Fixed Investment (GDP Basis) over Long Periods^{1,2}

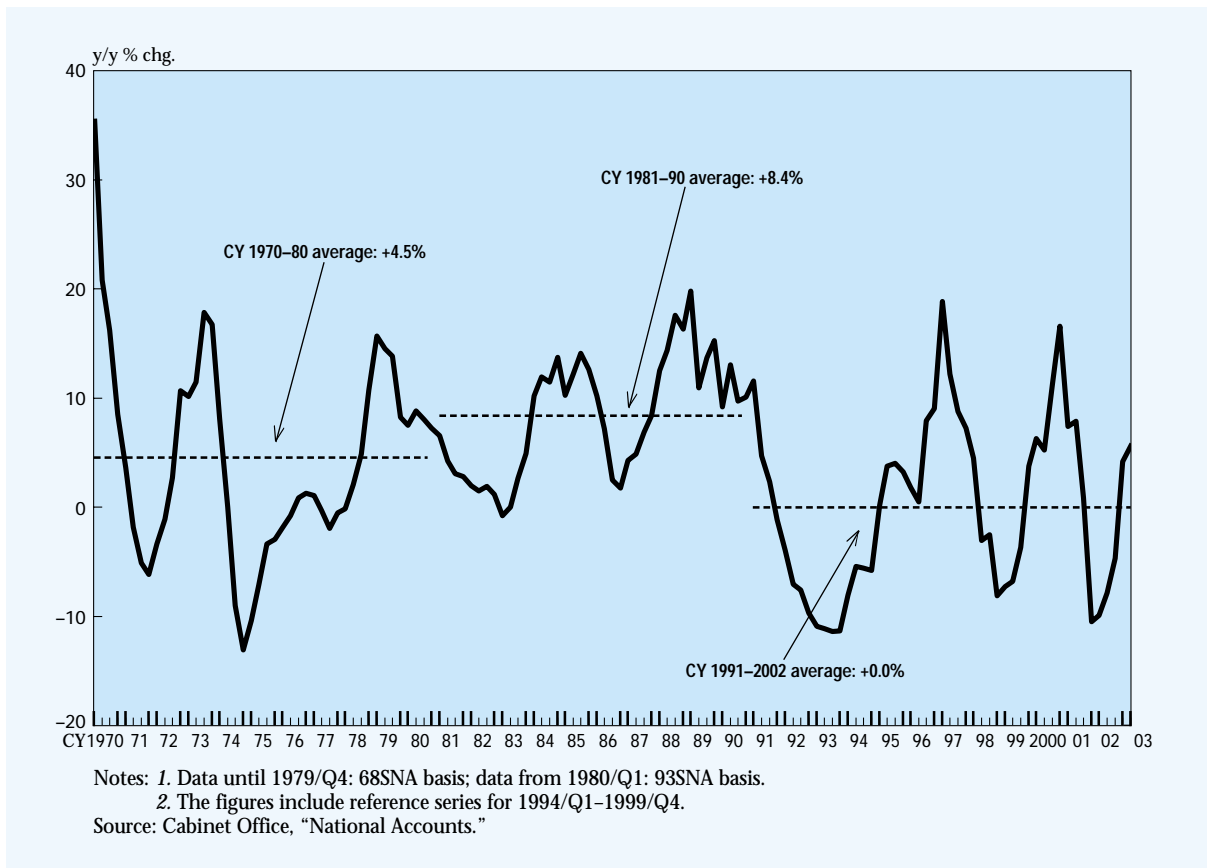
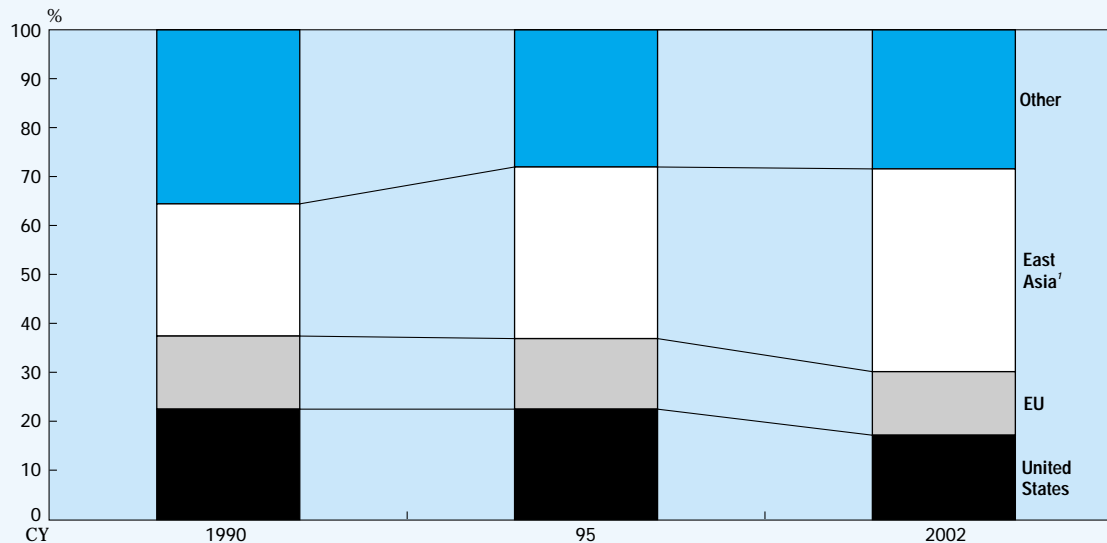
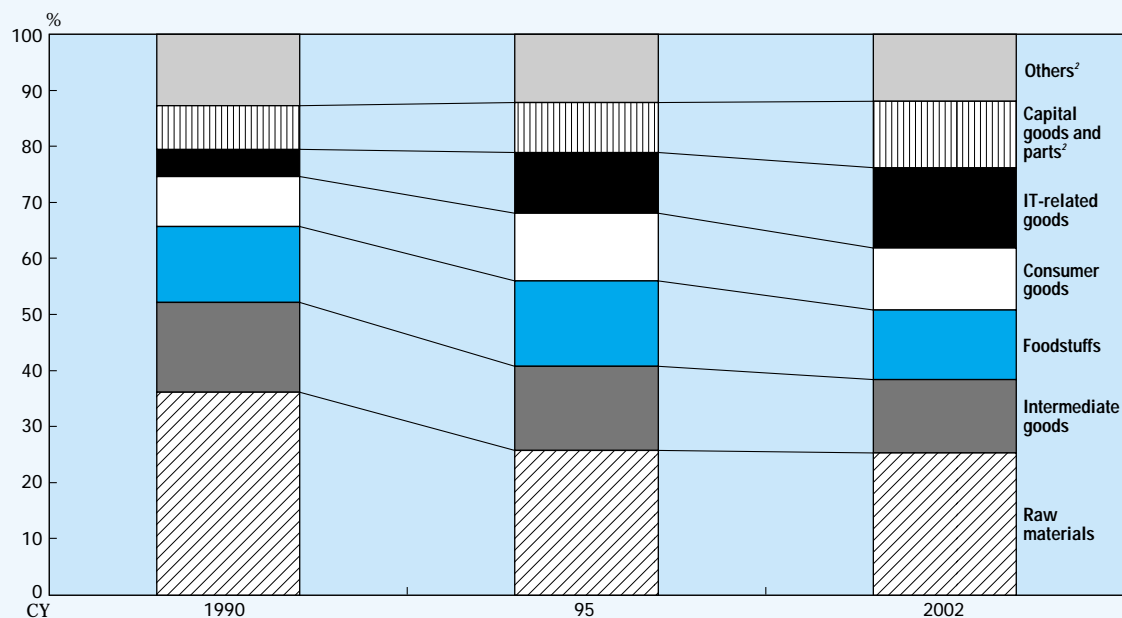


Chart 12
Foreign Trade

(1) Breakdown by Region



(2) Breakdown by Type of Goods



Notes: 1. The members of East Asia are NIEs (South Korea, Taiwan, Hong Kong, and Singapore), ASEAN4 (Thailand, Malaysia, the Philippines, and Indonesia), and China.

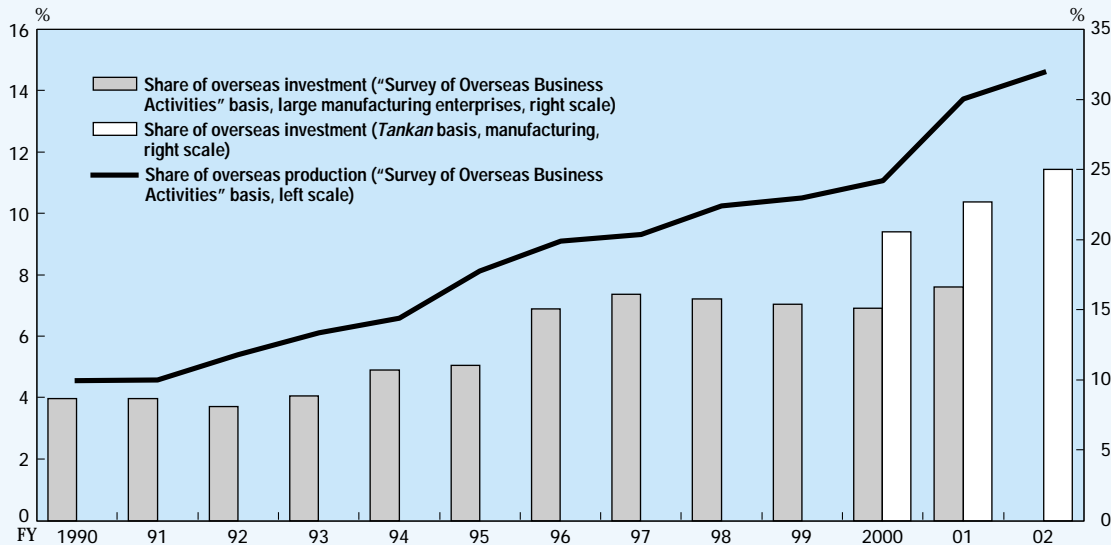
2. Semiconductor equipment is included in "Capital goods and parts." Aircraft are included in "Others."

Source: Ministry of Finance, "The Summary Report on Trade of Japan."

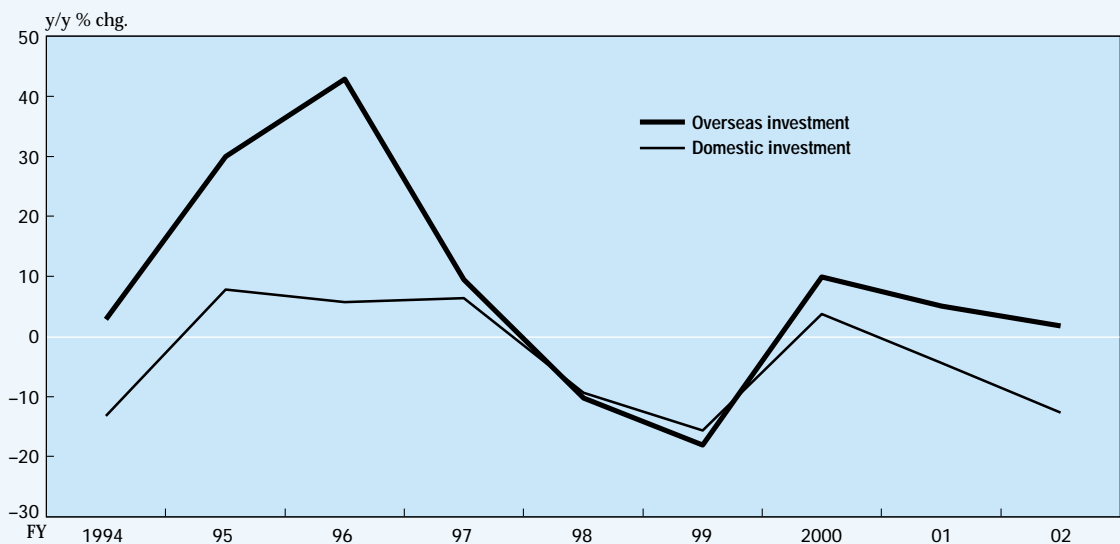
Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 13
Overseas Production^{1,2}

(1) Share of Overseas Production and Overseas Investment



(2) Growth in Overseas Investment (Principal Enterprises)

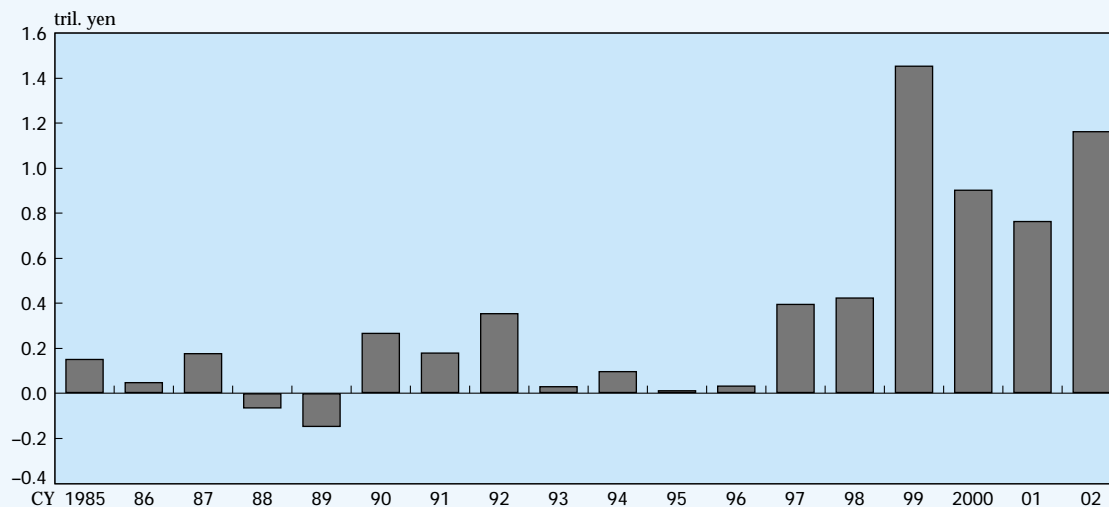


Notes: 1. Figures for share of overseas production in FY 2002 are projections ("Survey of Overseas Business Activities" basis).
2. Figures for share of overseas investment, overseas investment, and domestic investment in FY 2002 are projections (Tankan basis).

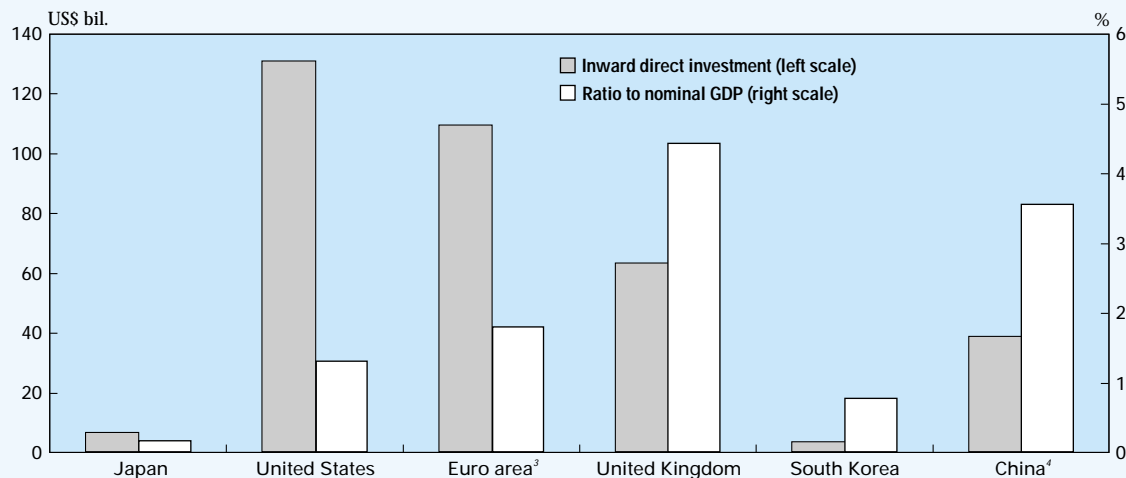
Sources: Cabinet Office, "Kigyō Kōdō ni Kansuru Ankeito Chōsa (Opinion Survey on Corporate Behavior)";
Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Annually";
Ministry of Economy, Trade and Industry, "Survey of Overseas Business Activities";
Bank of Japan, "Tankan—Short-Term Economic Survey of Enterprises in Japan."

Chart 14
Inward Direct Investment¹

(1) Direct Investment into Japan



(2) Inward Direct Investment: Comparison with Other Countries²



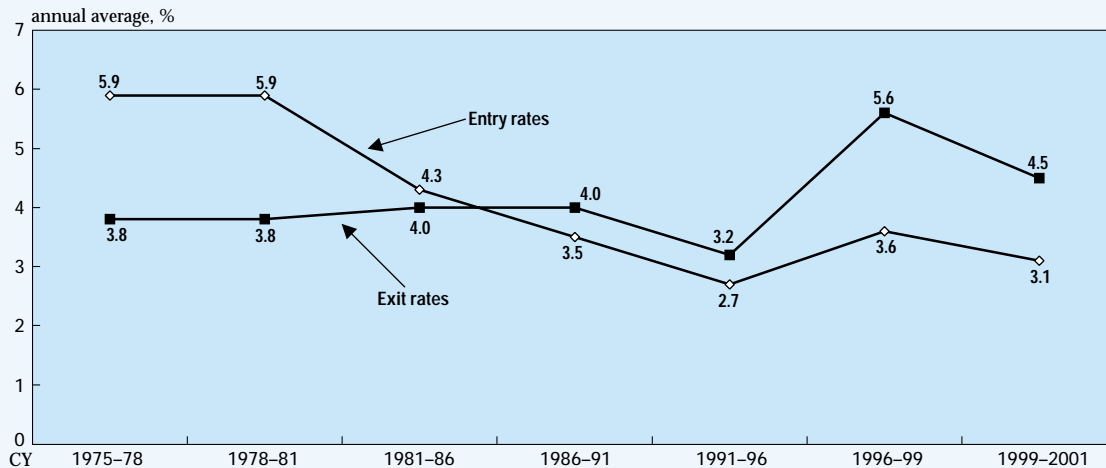
- Notes: 1. Balance of payments figures up to 1995/Q4 are on the former basis.
 2. Figures are converted into their U.S. dollar value equivalents using the average foreign exchange rates for the year concerned.
 3. Members of the euro area are France, Germany, Italy, Spain, Portugal, the Netherlands, Belgium, Luxembourg, Austria, Finland, Ireland and Greece.
 4. Figures for China are those of CY 2000. Other figures are those of CY 2001.

Sources: Bank of Japan, "Balance of Payments Monthly";
 International Monetary Fund, "International Financial Statistics."

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

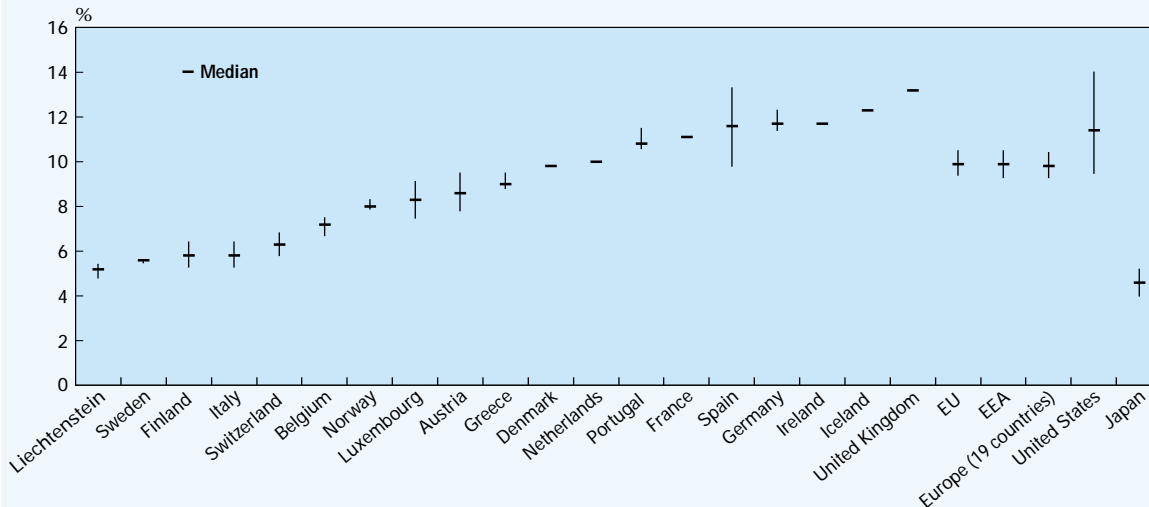
Chart 15
Entry Rates

(1) Trends in Entry and Exit Rates^{1,2}



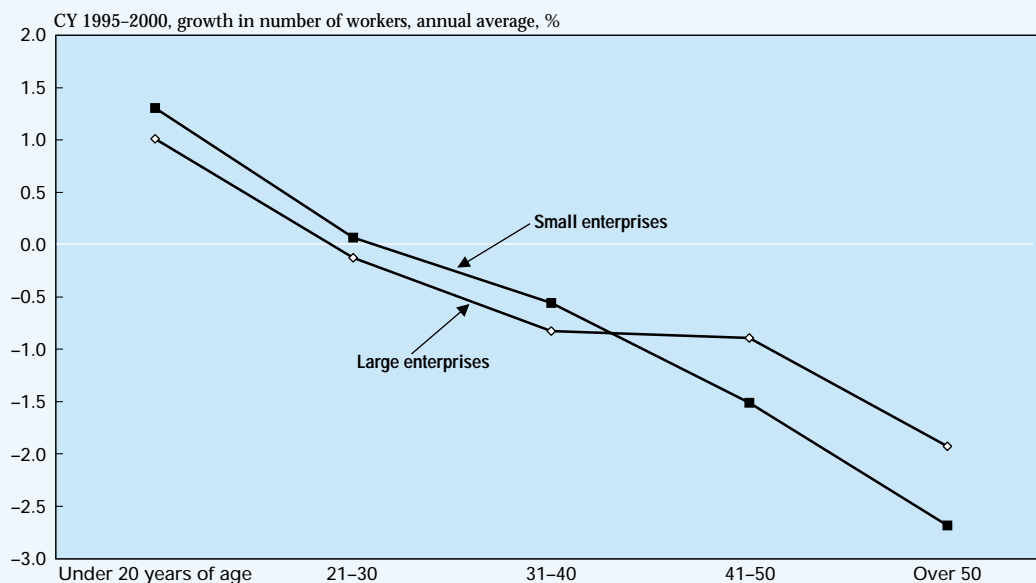
Notes: 1. Entry rate = numbers of newly opened business establishments/initial numbers of business establishments.
Exit rate = numbers of closed business establishments/initial numbers of business establishments.
2. Entries and exits of business establishments include openings and closures of branches and plants, and openings and closures due to changes of location.
Source: Small and Medium Enterprise Agency, "White Paper on Small and Medium Enterprises in Japan."

(2) International Comparison of Entry Rates¹



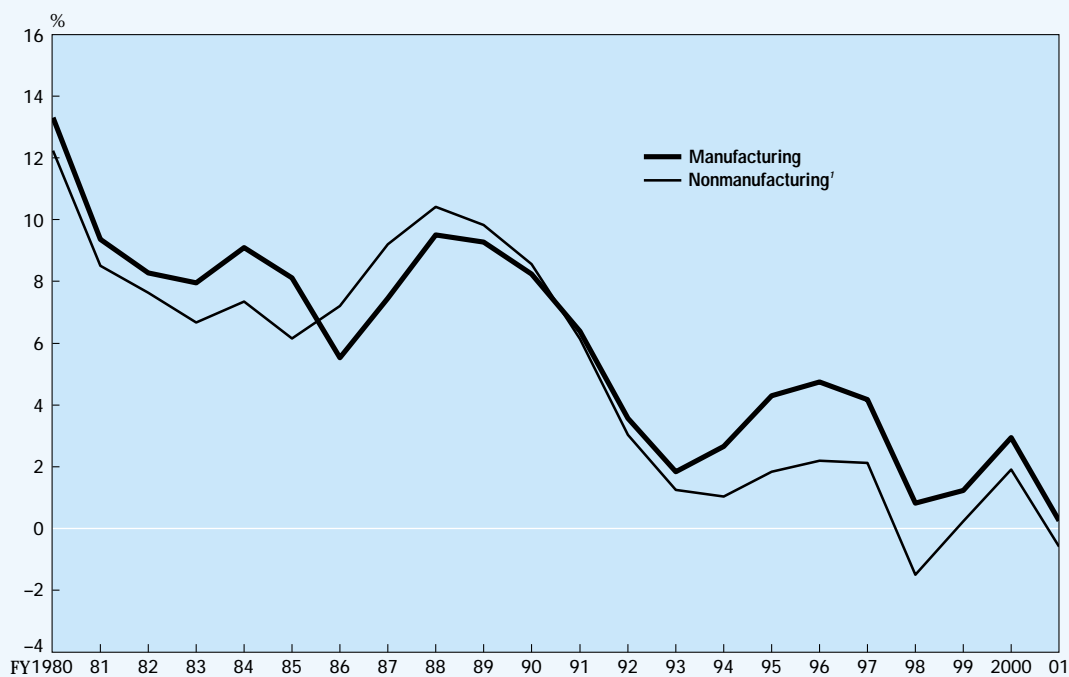
Note: 1. Because countries' definitions of entry and exit rates differ, the figures are recalculated. The consequent range of error is shown by the vertical line.
Source: European Union, "The European Observatory for SMEs Fifth Report 1997."

Chart 16
Average Growth in Number of Workers by Age of Enterprise¹



Note: 1. Enterprises that went bankrupt during the observation period are excluded.
Source: Small and Medium Enterprise Agency, "White Paper on Small and Medium Enterprises in Japan."

Chart 17
Return on Equity

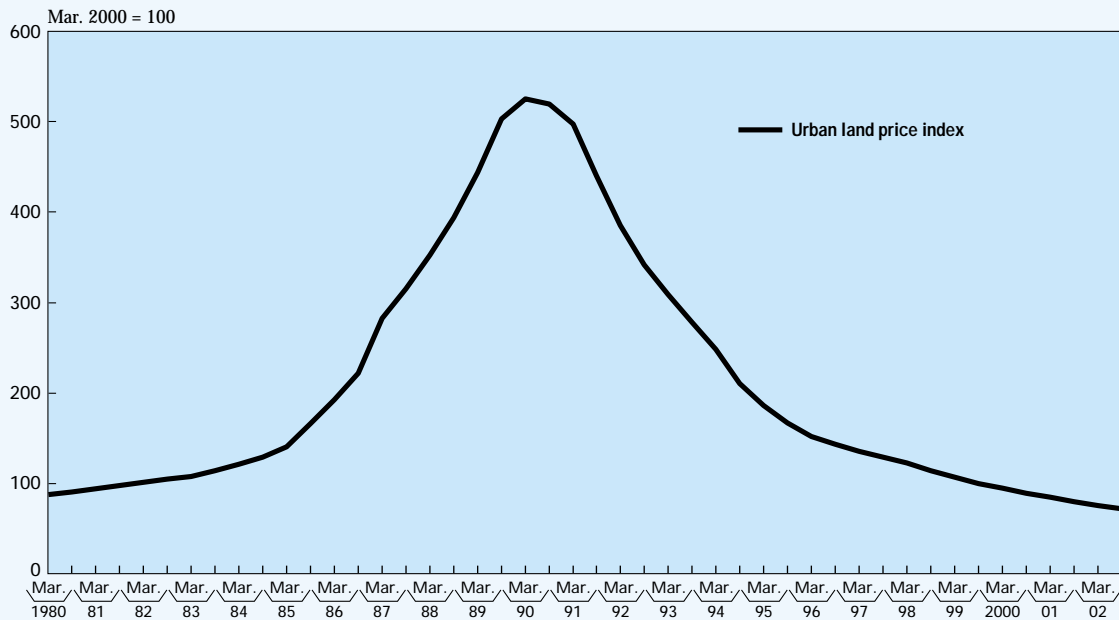


Note: 1. Nonmanufacturing excludes large firms in Other services (see Note 1 to Chart 5).
Source: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Annually."

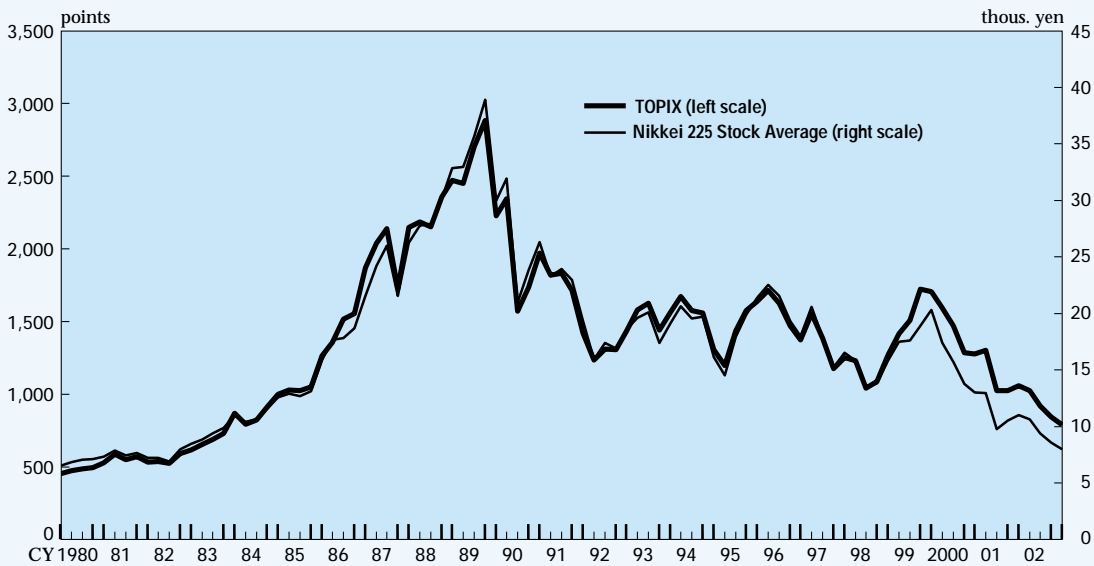
Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 18
Asset Prices

(1) Land Prices



(2) Stock Prices¹



Note: 1. Stock price data take the value of the relevant index at the end of each quarter.

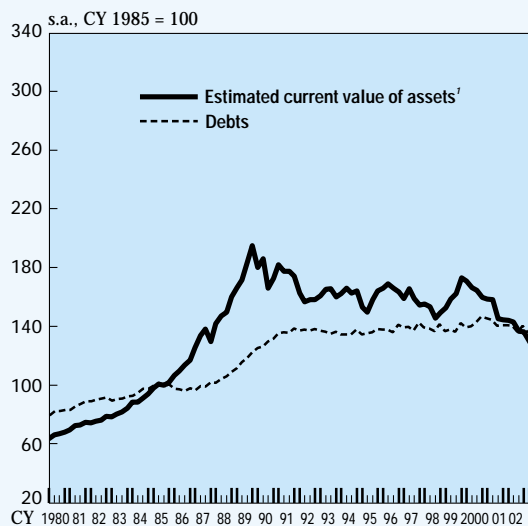
Sources: Japan Real Estate Institute, "Urban Land Price Index";

The *Nihon Keizai Shimbun*;

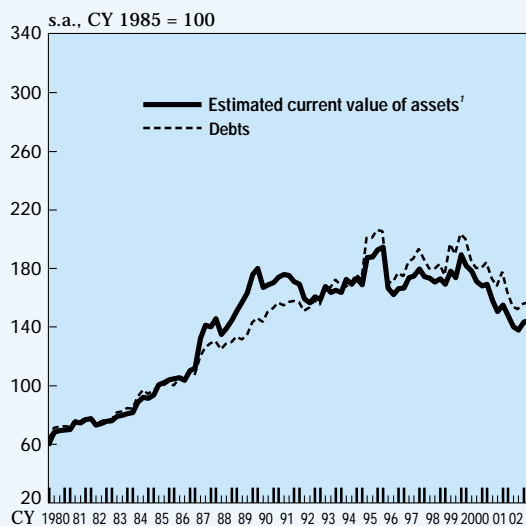
Tokyo Stock Exchange.

Chart 19
Values of Assets and Debts

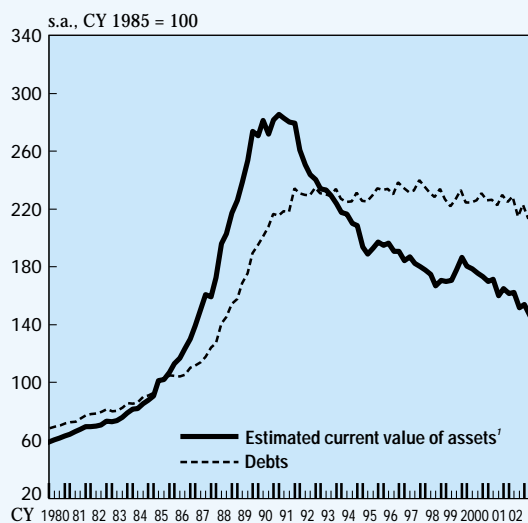
(1) Large Manufacturing Firms



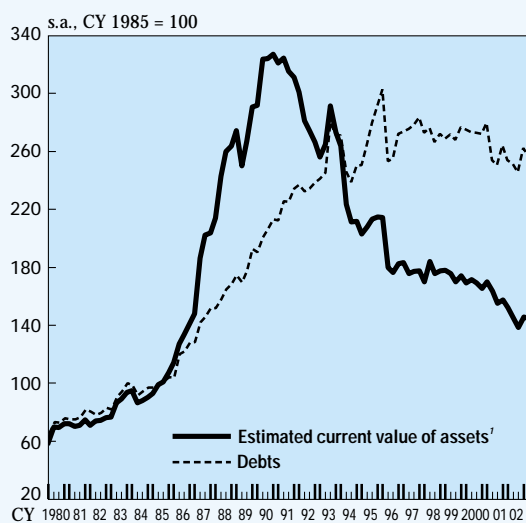
(2) Small and Medium-Sized Manufacturing Firms



(3) Large Nonmanufacturing Firms²



(4) Small and Medium-Sized Nonmanufacturing Firms²



Notes: 1. Figures for estimated current value of assets are estimated using unrealized gains (losses) on stocks and landholdings. Unrealized gains (losses) are estimated using the urban land price index and TOPIX.

2. The nonmanufacturing industries are Construction, Real estate, Wholesale, Retail, Transportation and communications, and Services.

Sources: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Annually"; etc.

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 20
Firms' Judgment of Their Excess Debt¹

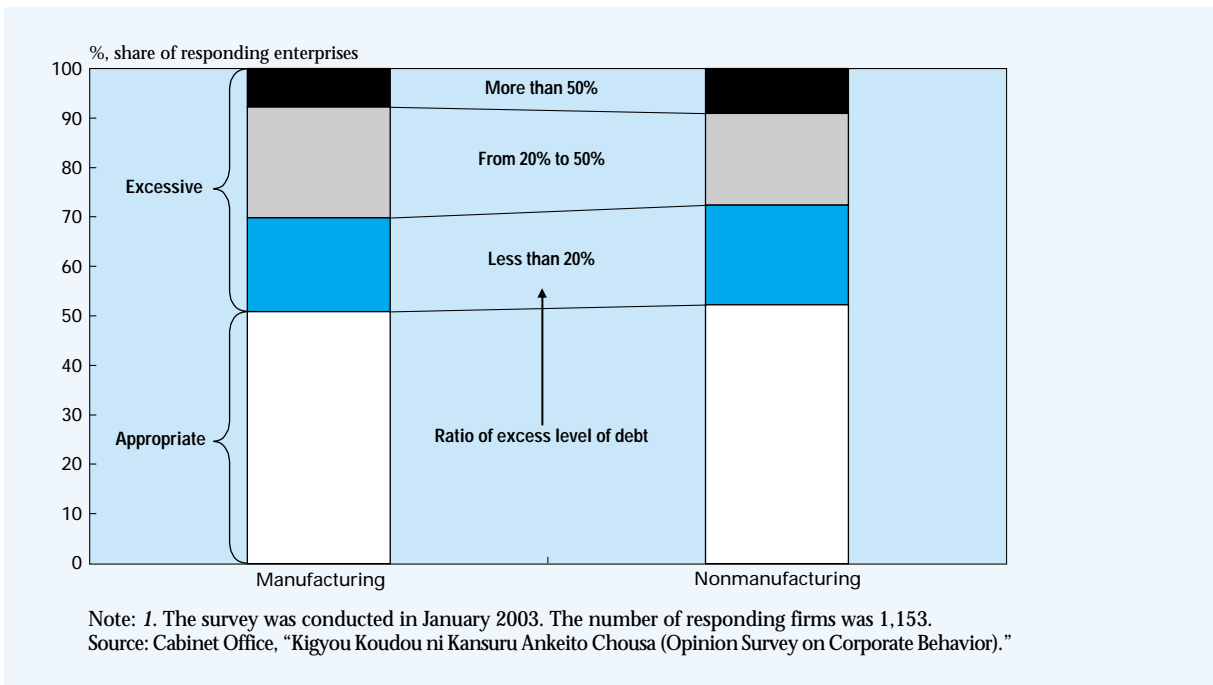
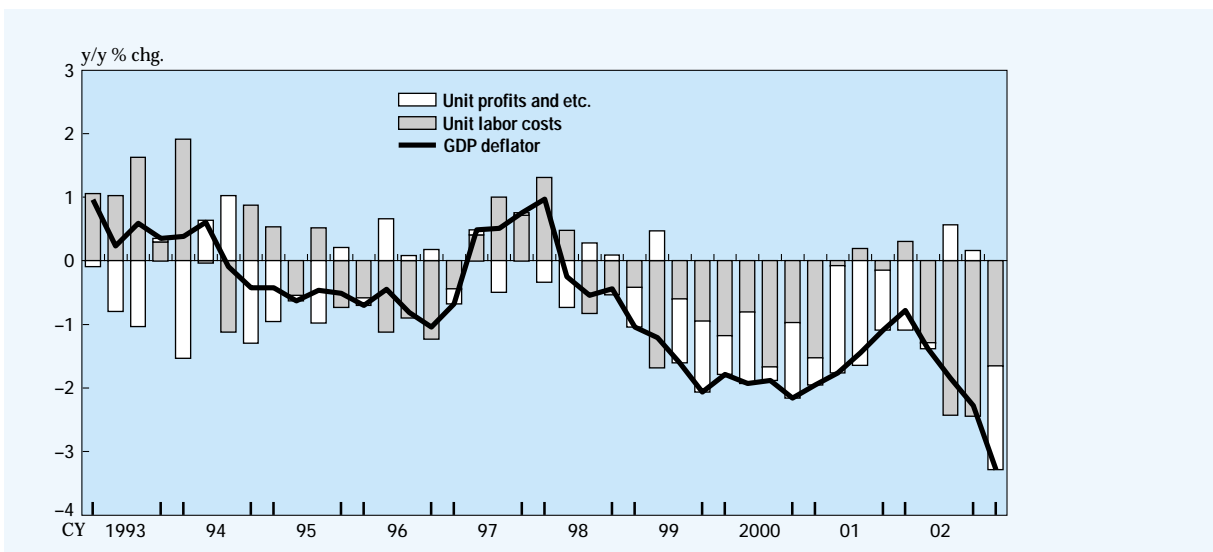


Chart 21
GDP Deflator^{1,2}



Notes: 1. The breakdown above is based on the idea below:

Nominal GDP = compensation of employees + operating surplus and mixed income
+ consumption of fixed capital + taxes on production and imports
- subsidies + statistical discrepancy.

Therefore, the GDP deflator (nominal GDP/real GDP) can be divided as follows.

GDP deflator = compensation of employees/real GDP + other terms/real GDP.

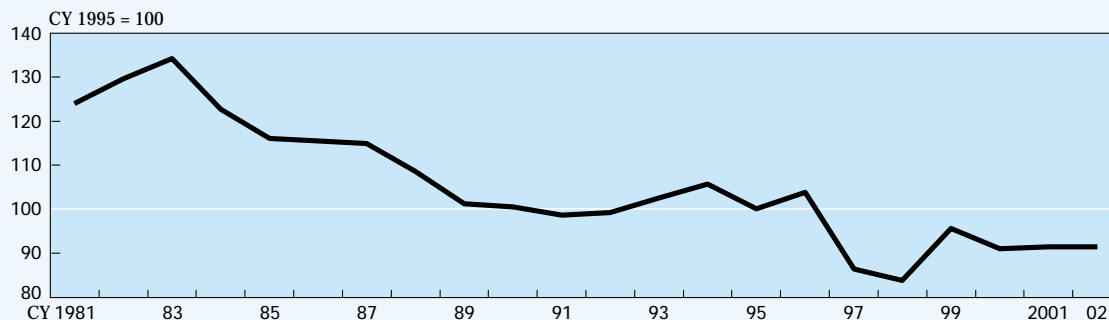
"Unit labor costs" in the chart refers to the first term of the expression, and "unit profits and etc." refers to the second term.

2. Figures for compensation of employees are those of the SNA. The figures for 2002/Q2–2003/Q1 are preliminary estimates.

Source: Cabinet Office, "National Accounts."

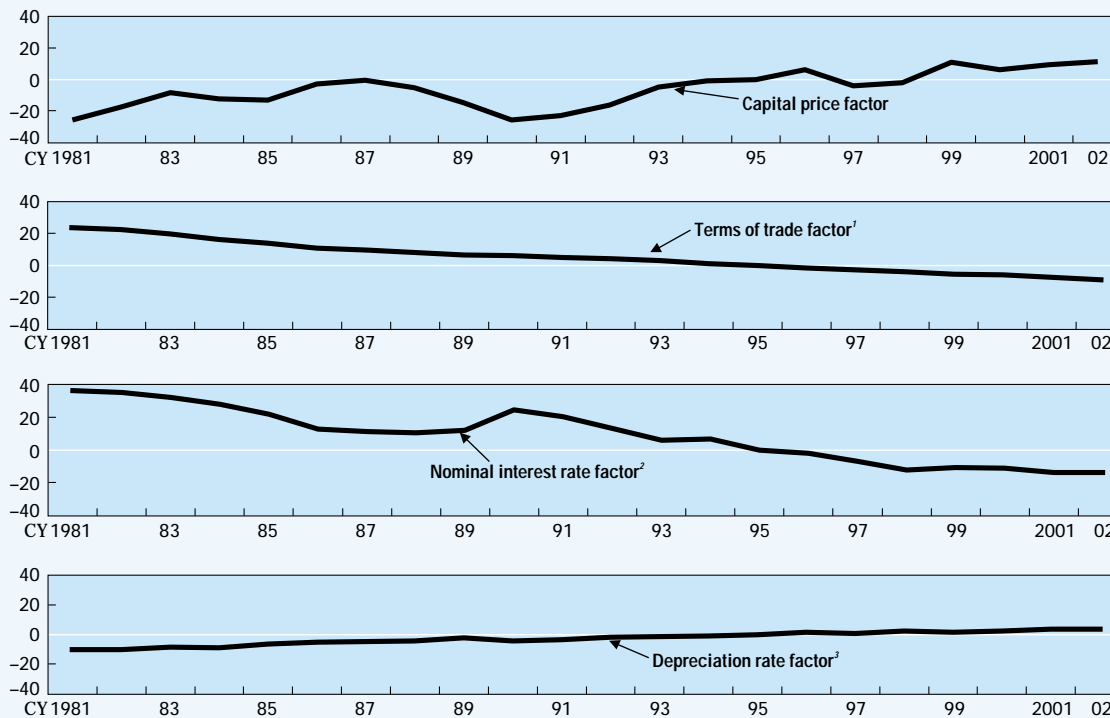
Chart 22
User Cost of Capital

(1) User Cost of Capital



(2) Breakdown of User Cost of Capital

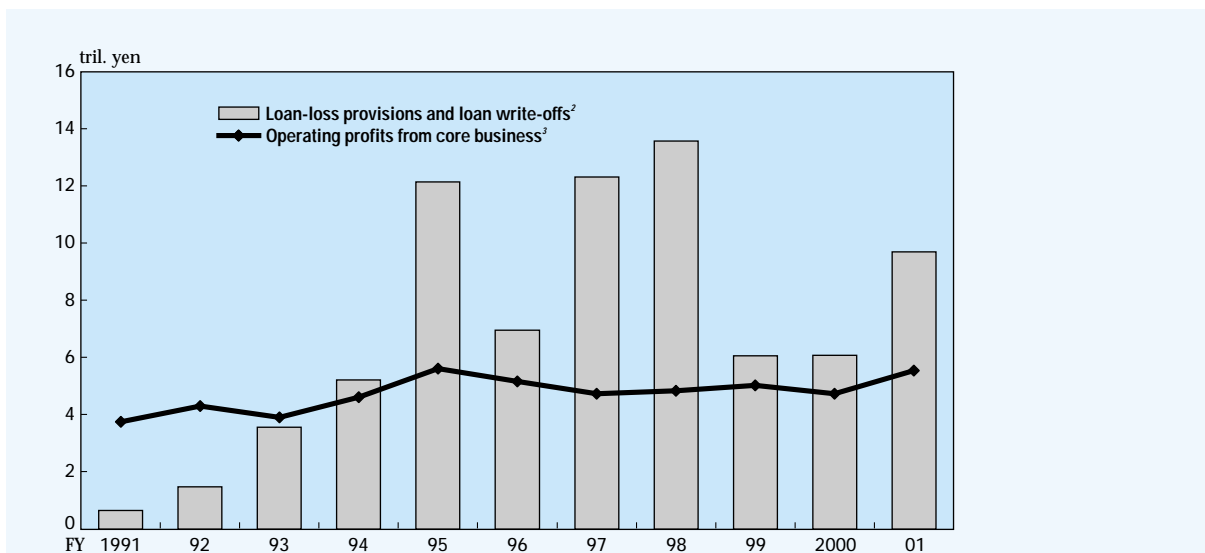
Cumulative changes attributed to each factor (1995 = 0)



Notes: 1. Terms of trade = deflator for business fixed investment/GDP deflator.
 2. Nominal interest rates are government bond yields (10-year).
 3. Depreciation rates are calculated using net fixed assets and consumption of fixed capital by nonfinancial corporations in the SNA. The rates for CY 2002 are presumed to be the same as those for CY 2001.
 Sources: Bank of Japan, "Financial and Economic Statistics Monthly";
 Cabinet Office, "National Accounts."

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 23
Nonperforming Loans¹



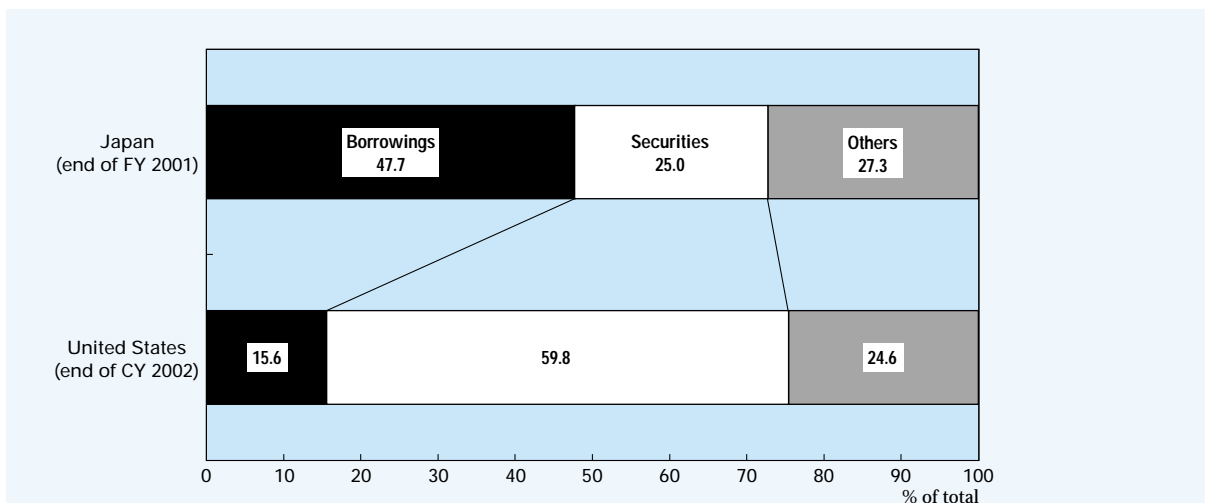
Notes: 1. Figures for 129 Japanese banks (13 city banks, long-term credit banks, and trust banks; 64 regional banks; and 52 regional banks II) on a nonconsolidated basis and excluding data for the following six banks: Shinsei Bank (formerly Long-Term Credit Bank of Japan), Aozora Bank (formerly Nippon Credit Bank), Tokyo Star Bank (formerly Tokyo Sowa Bank), Kansai Sawayaka Bank (formerly Kofuku Bank), Chubu Bank, and Ishikawa Bank. Unless otherwise noted, figures include those of the former Tokai Bank during FY 2002.

2. Loan-loss provisions and loan write-offs = loan write-offs (direct write-offs)
+ net transfers to special loan-loss provisions (SLP)
+ net transfers to the allowance for possible loan losses (APLL) on special overseas loans.

3. Operating profits from core business = operating profits (profits/losses - expenses)
- net bond-related gains/losses + APLL
+ loan write-offs in trust accounts.

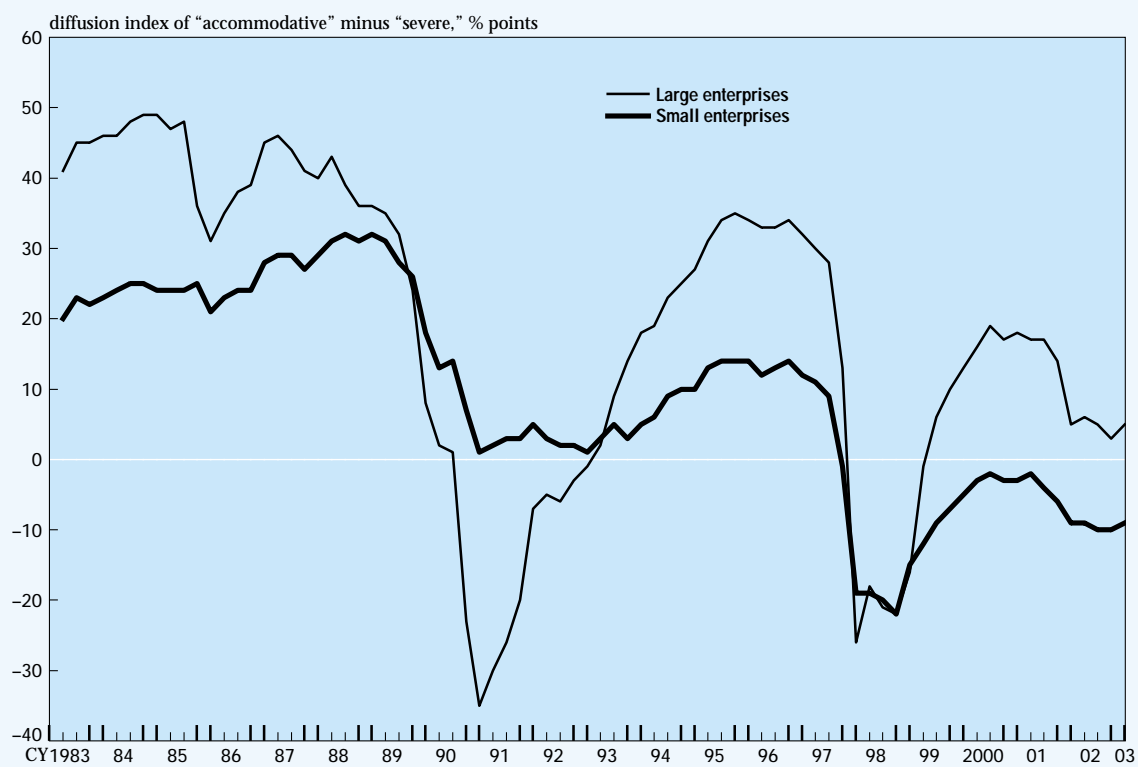
Source: Bank of Japan, "Developments in Profits and Balance Sheets of Japanese Banks in Fiscal 2001."

Chart 24
Fund-Raising by Enterprises



Sources: Bank of Japan, "Flow of Funds Accounts";
Board of Governors of the Federal Reserve System, "Flow of Funds Accounts of the United States."

Chart 25
Lending Attitude of Financial Institutions

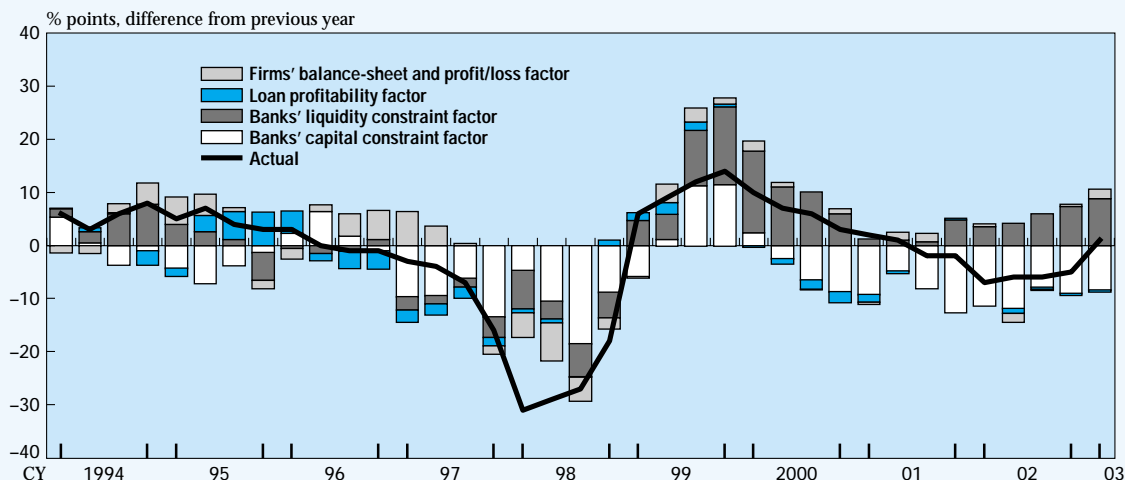


Source: Bank of Japan, "Tankan—Short-Term Economic Survey of Enterprises in Japan."

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 26
Factors Affecting Changes in the Lending Attitude of Financial Institutions

(1) Breakdown of the Lending Attitude of Financial Institutions (Toward Small Nonmanufacturing Enterprises)



(2) Descriptions of the Factors Affecting Changes in the Lending Attitude of Financial Institutions

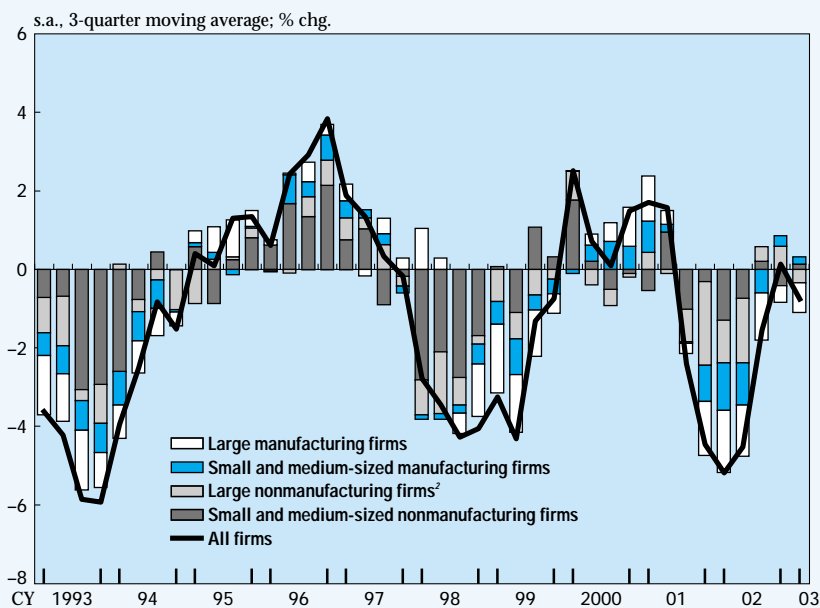
Factors	Proxy variables
Banks' capital constraint factor	The total market capitalization of banks on the Tokyo Stock Exchange First Section.
Banks' liquidity constraint factor	Premium in fund-raising (CD yield [6-month] minus TB yield [6-month]) and loan to deposit ratio for city banks: Loan to deposit ratio = (loans + interoffice accounts of liabilities of overseas branches)/(deposits + bank debentures).
Loan profitability factor	Average contracted interest rates on loans and discounts (stock, total) minus call rates (overnight).
Firms' balance-sheet and profit/loss factor	Ratio of financial debt to cash flow: Financial debt = long-term and short-term borrowings + debentures + CP + bills discounted. Cash flow = current profits/2 + depreciation expenses.

(3) Results of the Estimation

	Constant	Market capitalization of banks	Premium in fund-raising	Loans per deposit ratio	Loan profitability	Financial debt per cash flow ratio
Coefficient	-217.48	30.30	-21.93	-0.81	9.15	-2.18
t-value	-12.49	7.96	-2.01	-3.24	1.93	-3.00

Adjusted R² = 0.83, S.E. = 4.44, D.W. = 1.07, sample: 1993/Q1-2003/Q1.

Chart 27
Business Fixed Investment: Breakdown by Sector¹



Notes: 1. Figures are adjusted for sample change, and seasonally adjusted by X-11 (see Note 3 to Chart 5).

2. All firms and large nonmanufacturing firms exclude large firms in Other services (see Note 1 to Chart 5).

Source: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Quarterly."

Chart 28
Effects of Lending Attitude on Small Firm Investment

(1) Equation

$$\text{y/y chg. of investment} = C + a \times \text{stock adjustment factor} + b \times \text{internal funds factor} + c \times \text{lending attitude factor.}$$

(2) Results

Variables ¹	Small manufacturing firms		Small nonmanufacturing firms	
	Coefficient	<i>t</i> -value	Coefficient	<i>t</i> -value
Constant	19.27	2.84	15.96	2.76
Stock adjustment factor (business fixed investment in previous year/ cash flow in previous year)	-28.22	-3.53	-21.56	-3.57
Internal funds factor (y/y chg. of cash flow in previous quarter)	0.61	5.62	0.38	2.80
Lending attitude factor (lending attitude of financial institutions DI)	0.47	3.76	0.63	5.63
Sample	1981/Q3-2003/Q1		1983/Q3-2003/Q1	
Adjusted R ²	0.54		0.53	

Note: 1. The figures for fixed investment and cash flow are 2-quarter moving averages.

Sources: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Quarterly"; Bank of Japan, "Tankan—Short-Term Economic Survey of Enterprises in Japan."

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 29
Estimation of Investment Function with Panel Data^{1,2,3,4}

Dependent variable: real investment/real capital stock₋₁

—Sample period: FY 1993–2000

—Firms selected in the sample are all listed firms that continued to exist for at least seven years during the period required for estimation and borrowed from city banks and long-term credit banks, excluding those in the electric utilities industry and the finance industry.

—The firms in the sample of equation 1 are those that have issued bonds, and those in the sample of equation 2 are those that have not.

	Equation 1	Equation 2
Bond issue	Yes	No
Firm balance-sheet condition variable⁵	-0.16 (0.05)***	-0.25 (0.09)***
Main bank balance-sheet condition variable⁶	0.07 (0.15)	0.56 (0.26)**
Real sales (difference from previous year)	0.04 (0.04)	0.03 (0.05)
Real sales (difference from previous year)₋₁	0.09 (0.04)**	0.01 (0.04)
(Real capital stock – real sales)₋₂	-0.08 (0.04)**	-0.07 (0.04)*
Real sales₋₂	-0.002 (0.01)	-0.05 (0.03)
User cost of capital (difference from previous year)	-0.06 (0.02)***	-0.10 (0.03)***
User cost of capital (difference from previous year)₋₁	-0.07 (0.03)***	-0.08 (0.03)**
User cost of capital₋₂	-0.07 (0.04)*	-0.11 (0.06)
Cash flow⁷/nominal capital stock₋₁	-0.05 (0.07)	0.11 (0.07)
AR(1)	-0.01 (0.04)	0.001 (0.04)
Standard error	0.086	0.096
Observations	6,871	1,617
Firms	856	222

Notes: 1. The above estimation is cited from Nagahata and Sekine (2002).

2. Coefficients on constants and time dummies are omitted.

3. Figures in parentheses are standard errors. ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent level, respectively.

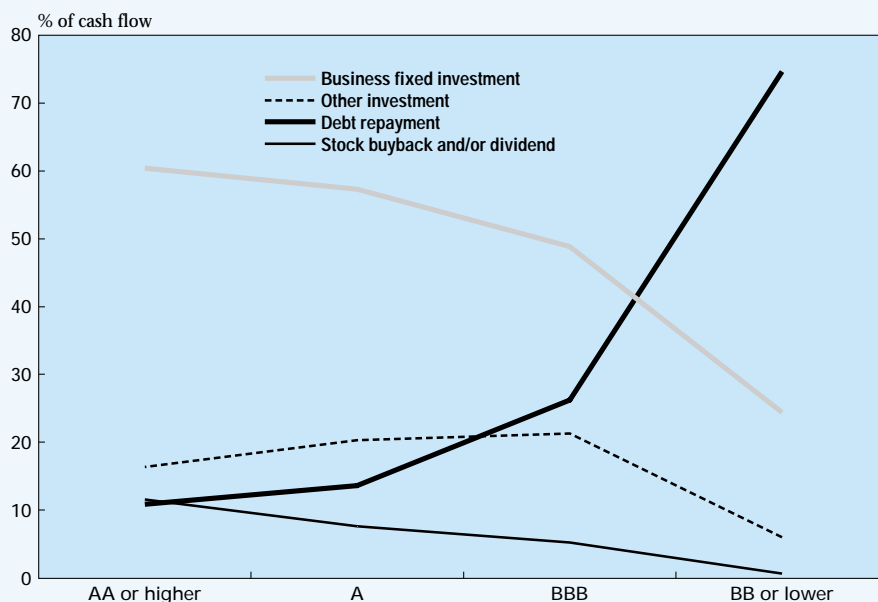
4. Real capital stock, real sales, and user cost of capital are all in logarithms.

5. The firm balance-sheet condition variable is the debt-asset (D/A) ratio: i.e., debt outstanding divided by assets, of which (1) inventory, (2) land, (3) machinery, and (4) nonresidential buildings and structures are adjusted to their market values by perpetual inventory methods.

6. The main bank balance-sheet condition variable is the adjusted capital adequacy ratio, which is calculated as (shareholders' equity + capital gains/losses from securities + loan-loss provisioning – risk management assets – deferred tax assets)/assets.

7. Cash flow is the sum of after-tax earnings and depreciation expenses.

Chart 30
Use of Cash Flow^{1,2}



Notes: 1. The data are those of FY 2001. All of the firms selected in the sample, numbering 607, are listed firms.

2. Cash flow = cash flow from operating activities + sales of fixed assets and securities + net increase (or decrease) in cash and cash equivalents.

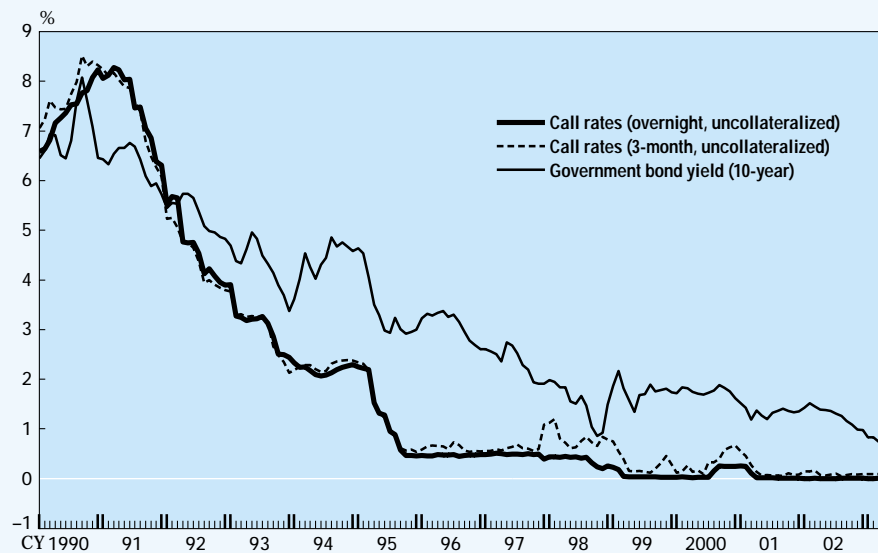
Business fixed investment = acquisition of fixed assets.

Other investment = acquisition of securities + net increase (or decrease) in lending.

Debt repayment = net decrease (or increase) in financial debts (long-term and short-term loans, bonds, CP, and financial leases).

Sources: Rating and Investment Information, Inc., etc.

Chart 31
Interest Rates



Source: Bank of Japan, "Financial and Economic Statistics Monthly."

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 32
Expected GDP Growth Rate and Business Fixed Investment

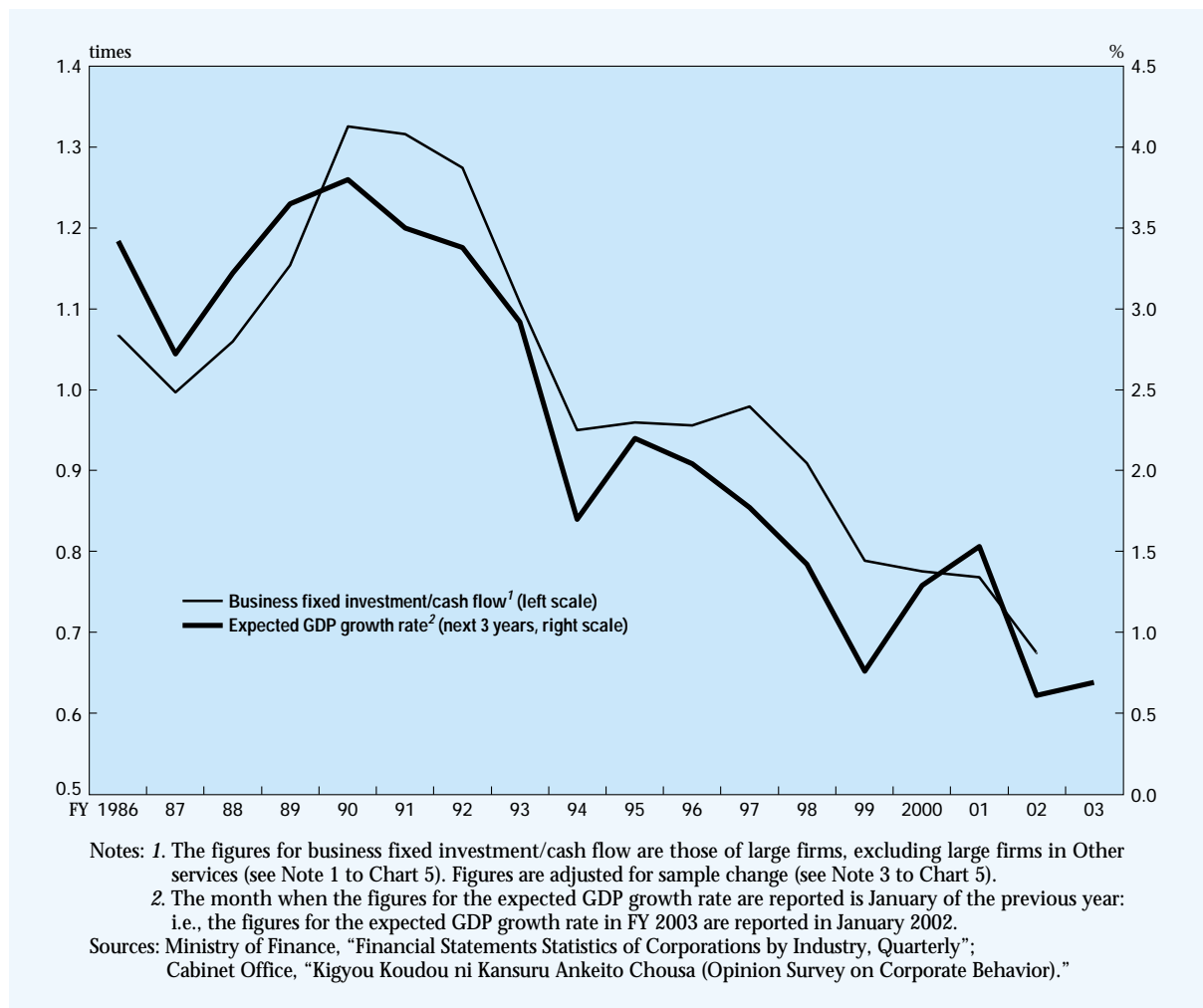
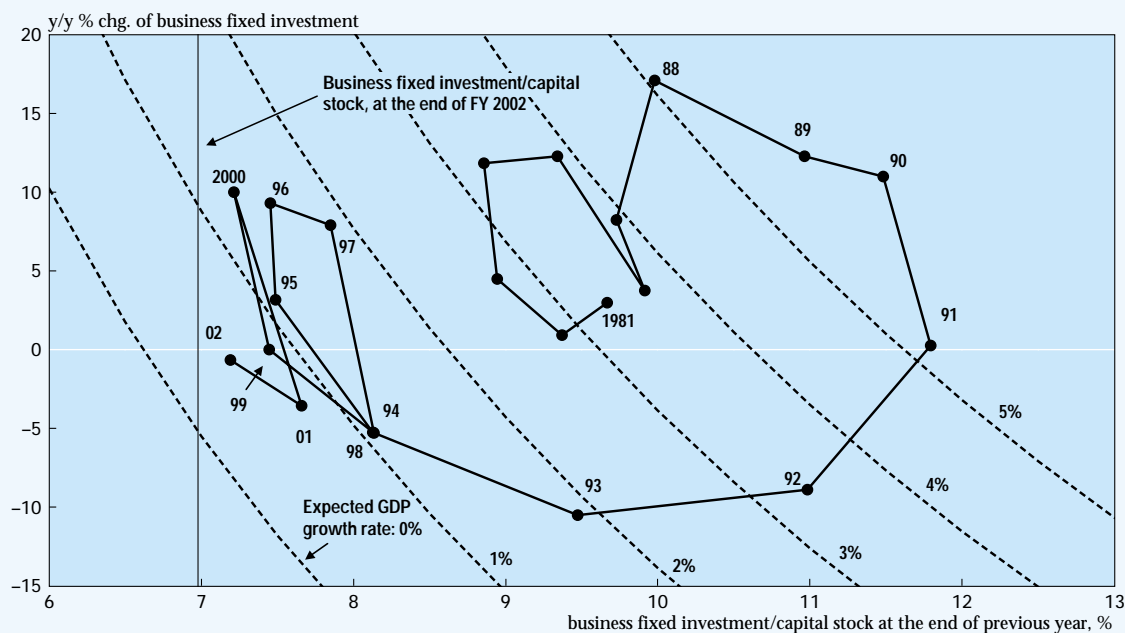


Chart 33
Capital Stock Cycle^{1,2,3}

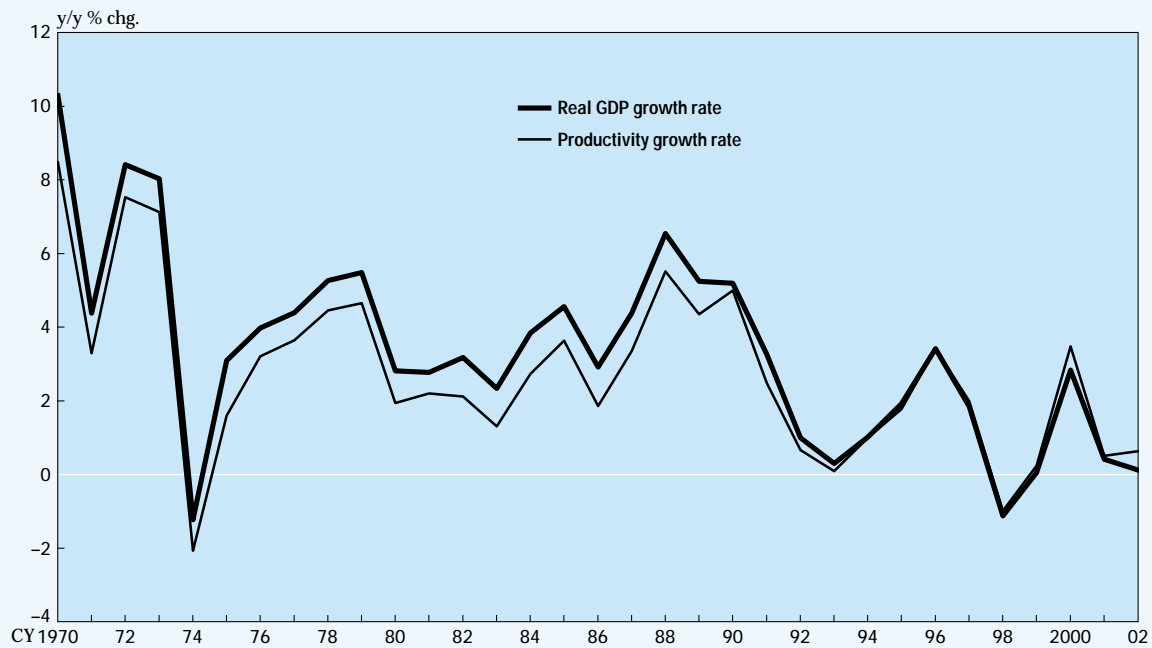


- Notes: 1. The contours for the expected GDP growth rate are calculated using the averages of past depreciation rates and the changes in the estimated trend of the capital-output ratio.
 2. The figures for the capital stock are adjusted for sample changes accompanying the privatization of public companies.
 3. The figure for business fixed investment/capital stock at the end of FY 2002 is estimated using the average depreciation rate from 2002/Q2 to 2002/Q4.

Sources: Cabinet Office, "National Accounts," "Gross Capital Stock of Private Enterprises";
 Ministry of Economy, Trade and Industry, "Indices of Industrial Production."

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 34
Real GDP Growth Rate¹



y/y % chg., annual average

	CY 1970-80	CY 1981-91	CY 1992-2002
Real GDP growth rate	5.0	4.0	1.1
Per capita real GDP growth rate²	4.0	3.1	1.2

Notes: 1. Basis of GDP data up to 1979/Q4 is 68SNA.

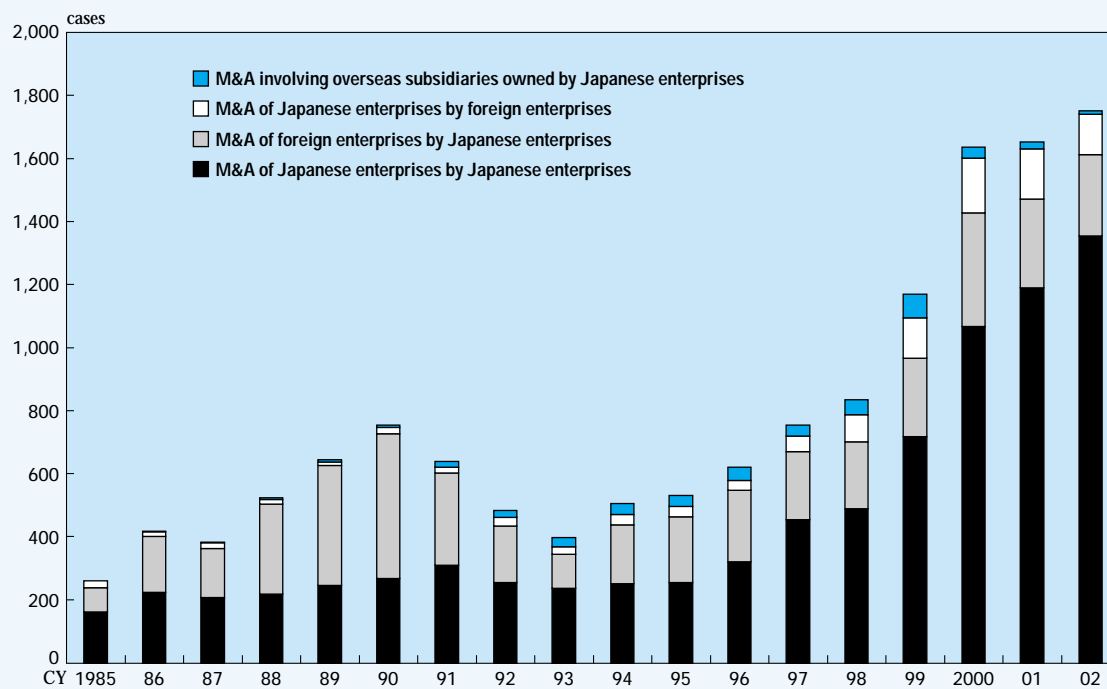
The figures include "reference series" for 1994/Q1-1999/Q4.

2. Per capita real GDP = real GDP/labor force (ages 15-64).

Sources: Cabinet Office, "National Accounts";

Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Population Estimates."

Chart 35
Number of M&A¹



Note: 1. M&A within group companies is excluded.
Source: RECOF.

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 36
Recent Legal Changes to Promote Business Reorganization

		Summary	Effect on business management
1997	October	Streamlined procedures for mergers (Commercial Code revision)	<ul style="list-style-type: none"> • Procedures for mergers in shareholders' meeting are streamlined. • Procedures for protecting creditors' advantages are streamlined.
	December	Lifting of the ban on establishing holding companies (Anti-Monopoly Law revision)	<ul style="list-style-type: none"> • Encourages reorganization toward a more flexible corporate structure.
1999	January	Easing of criteria for M&A (Anti-Monopoly Law revision)	<ul style="list-style-type: none"> • Japan Fair Trade Commission deregulates rules on mergers.
	October	Enforcement of Special Measures for Industrial Revitalization	<ul style="list-style-type: none"> • Companies that spin off unprofitable operations are exempted from taxes.
	October	Introduction of equity-swap system (Commercial Code revision)	<ul style="list-style-type: none"> • Parent companies become able to wholly own subsidiary companies more easily.
2000	February	Enforcement of Special Court Mediation Law	<ul style="list-style-type: none"> • Special court mediation enables ailing companies to undertake the restructuring program before they go bankrupt.
	April	Enforcement of Civil Rehabilitation Law	<ul style="list-style-type: none"> • This law is applied to companies that face imminent bankruptcy but are not yet insolvent. This scheme is more convenient than the scheme under the Corporate Rehabilitation Law.
2001	April	Introduction of spin-off system (Commercial Code revision)	<ul style="list-style-type: none"> • Reorganization of companies becomes easier because corporate division procedures are streamlined.
	October	Lifting the ban on treasury stocks (Commercial Code revision)	<ul style="list-style-type: none"> • It becomes easier for companies to cancel their stocks or carry out M&A using a stock swap system.
2002	April	Introduction of equity warrant system, revision of stock options program, revision of special-class stock program, etc. (Commercial Code revision)	<ul style="list-style-type: none"> • Introduction of a stock option program becomes easier for companies. • A stock option program becomes available for use in issuing tracking stocks or engaging in M&A.
	August	Introduction of consolidated taxation system	<ul style="list-style-type: none"> • This taxation is consistent with consolidated management. For example, taxable earnings are calculated from consolidated group earnings.
2003	April	Revision of Corporate Rehabilitation Law	<ul style="list-style-type: none"> • The purpose of this revision is to make rehabilitation procedure more speedy, streamlined, and effective.
	April	Revision of Special Measures for Industrial Revitalization Law	<ul style="list-style-type: none"> • This promotes business restructuring that is carried out by more than two enterprises.
	April	Establishment of Industrial Revitalization Corporation of Japan (IRCJ)	<ul style="list-style-type: none"> • Rehabilitation of ailing companies becomes easier because the IRCJ can support them, cooperating with the main bank by buying bad loans from non-main banks and reducing the number of stakeholders.

Chart 37
Reorganization of the Materials Industries

Before reorganization ¹		After reorganization ²	
(1) Steel			
share of production, %		share of production, %	
Nippon Steel	25.9	Nippon Steel, Sumitomo Metal Industries, Kobe Steel	41.8
NKK	10.8	JFE	23.9
Sum of top 2 companies	36.7	Sum of top 2 companies	65.7
Kawasaki Steel	10.6	Tokyo Steel	3.6
Sumitomo Metal Industries	10.0	Nisshin Steel	3.5
Kobe Steel	5.8		
Tokyo Steel	4.0		
Nisshin Steel	3.6		
(2) Oil			
share of production, %		share of production, %	
Nippon Oil	17.2	Nippon Oil	36.1
Idemitsu Kosan	15.1	Japan Energy, Showa Shell Sekiyu	22.1
Cosmo Oil	12.9	ExxonMobil	19.7
Sum of top 3 companies	45.2	Sum of top 3 companies	78.0
Showa Shell Sekiyu	12.3	Idemitsu Kosan	15.1
Japan Energy	10.3		
Mitsubishi Oil	8.0		
Mobil Oil	6.6		
(3) Cement			
share of production, %		share of production, %	
Chichibu-Onoda Cement	22.8	Taiheiyo Cement	38.0
Sumitomo Osaka Cement	17.8	Ube-Mitsubishi Cement	25.9
Nihon Cement	17.4	Sumitomo Osaka Cement	17.9
Sum of top 3 companies	58.0	Sum of top 3 companies	81.7
Mitsubishi Materials	13.8	Tokuyama	6.8
Ube Industries	11.5	Aso Cement	3.2
Tokuyama	6.2		
Aso Cement	2.9		
(4) Polystyrene			
share of production, %		share of production, %	
Asahi Chemical Industry	24.8	PS Japan	46.0
Japan Polystyrene	14.5	Toyo Styrene	28.0
Denki Kagaku Kogyo	13.7	Japan Polystyrene	17.0
Sum of top 3 companies	53.0	Sum of top 3 companies	91.0
Mitsubishi Chemical	13.1	Dainippon Ink & Chemicals	9.0
Idemitsu Petrochemical	11.5		
Nippon Steel Chemical	9.9		
Dainippon Ink & Chemicals	8.6		
Daicel Chemical Industries	3.9		

Notes: 1. Data before reorganization: steel and oil are based on FY 1997, while cement and polystyrene are based on CY 1997.

2. Data after reorganization: steel is based on FY 2000, while oil, cement, and polystyrene are based on CY 2000.

Source: Yano Research Institute, "Japan Market Share Dictionary."

Recent Trends in Business Fixed Investment and the Issues

Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 38
Reorganization of the Electronics Industry

(1) Semiconductors

System LSI flash memories	Hitachi-Mitsubishi Electric (integration: Renesas Technology)
	NEC (spin-off: NEC Electronics)
	Toshiba-Fujitsu (comprehensive collaboration focusing on system LSI)
	Fujitsu-AMD (integration of flash memory businesses: FASL)
DRAMs	NEC-Hitachi (integration: Elpida Memory)
	Withdrawal: Toshiba, Mitsubishi Electric

(2) Other Products

Large LCDs	Sharp
	Toshiba-Matsushita Electric Industrial (integration: Toshiba Matsushita Display)
	Hitachi (spin-off: Hitachi Display)
	Withdrawal: Fujitsu, NEC
Plasma display panels (PDPs)	Pioneer
	Fujitsu-Hitachi (integration: Fujitsu Hitachi Plasma Display)
	Matsushita Electric Industrial-Toray Industrial (comprehensive collaboration)
	NEC-Sony (joint investment for their new facilities)
Hard disk drives (HDDs)	Hitachi (purchase of IBM's HDD business)
	Toshiba-Matsushita Kotobuki (cooperation in the small-form-factor HDD businesses)
	Withdrawal: Fujitsu, NEC
Cellular phones	Sony-Ericsson (integration: Sony Ericsson Mobile Communications)
	NEC-Matsushita Electric Industrial (comprehensive collaboration for 3G cellular phone)
	Toshiba-Mitsubishi Electric (comprehensive collaboration for 3G cellular phone)

Chart 39
M&A in the Retail Industry^{1,2}

		Sector	Seller/ object of M&A	Buyer	Summary
2002	February	Department store	Iwataya	Isetan	Isetan bought into Iwataya after debt forgiveness based on the “guideline for multi-creditor out-of-court workouts.”
	February	Supermarket	Kotobukiya	Aeon	Aeon bought 50 stores in Kyushu from Kotobukiya under the Civil Rehabilitation Law.
	March	Supermarket	Seiyu	Wal-Mart	Wal-Mart entered the Japanese market by acquiring equity warrants of Seiyu.
	April	Discount store	Daikuma	Yamada Denki	The Ito-Yokado group pulled out of the discount store business.
	April	Specialty store for household electric appliances	Sogo Denki	Geo	Geo acquired and fully absorbed Sogo Denki under the Civil Rehabilitation Law.
	May	Supermarket	Fukuhara	Ralse	The No. 1 and No. 5 supermarket chains in Hokkaido merged by establishing a holding company to survive local competition.
	May	Supermarket	Halo	Aeon	Aeon bought a supermarket chain from Kotobukiya under the Civil Rehabilitation Law.
	May	Supermarket	Inageya	Aeon	Aeon bought into Inageya to pursue economies of scale for stocking goods.
	May	Convenience store	MS Kyushu	Ministop	Acquisition
	June	Supermarket	Nikoniko-Do	Izumi	Izumi bought large stores from Nikoniko-Do under the Civil Rehabilitation Law.
	June	Department store	Okajima	Mitsukoshi	Mitsukoshi supported Okajima through a third-party allocation of shares.
	July	Supermarket	Midoriya	York-Benimaru	York-Benimaru acquired a supermarket chain in Fukushima through an equity swap.
	September	Supermarket	Uniliving	Maruetsu	Maruetsu bought a supermarket business in the Tokyo Bay area.
	September	Drugstore	Iino	Aeon	Aeon acquired Iino through a third-party allocation of shares and equity warrants.
November	Supermarket	Mycal Kyushu	Aeon	Aeon supported Mycal Kyushu under the Corporate Rehabilitation Law.	
2003	January	Convenience store	Keiji Seicomart	FamilyMart	FamilyMart transferred business from an area franchiser of Seicomart.

Notes: 1. Major cases released since 2002. Dates correspond to months when announcements took place.

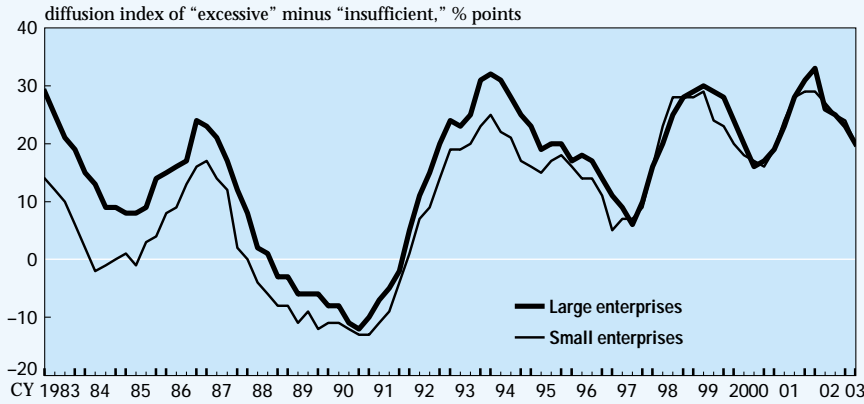
2. Shaded cases involve bankruptcy or debt forgiveness.

Source: RECOF.

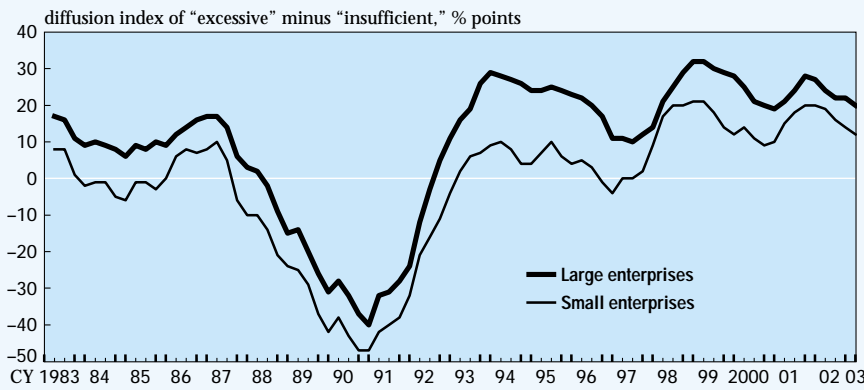
Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 40
Excess Capital and Labor Capacities

(1) Excess Capital Capacity (Manufacturing)

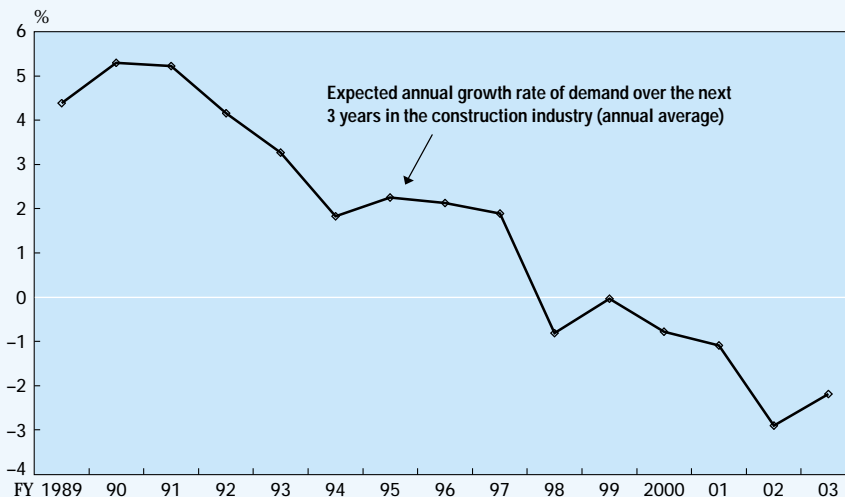


(2) Excess Labor Capacity (All Industries)



Source:
Bank of Japan, "Tankan—
Short-Term Economic Survey
of Enterprises in Japan."

Chart 41
Expected Growth Rate of Demand in the Construction Industry¹

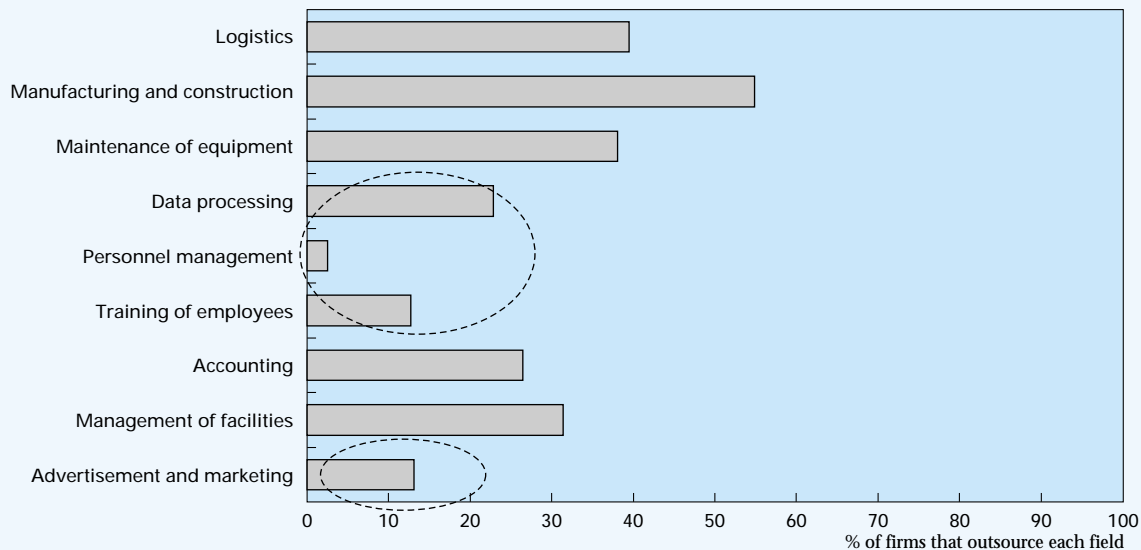


Note:
1. The month when the
figures for the expected
GDP growth rate are
reported is January of the
previous year: i.e., the
figures for the expected
GDP growth rate in FY
2003 are reported in
January 2002.

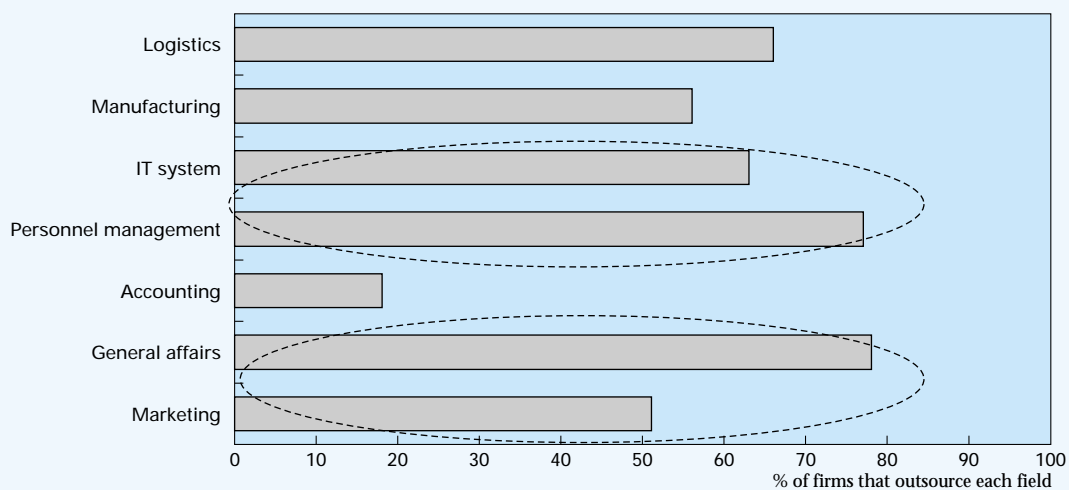
Source:
Cabinet Office, "Kigyō Kou-
dou ni Kansuru Ankeito
Chōsa (Opinion Survey on
Corporate Behavior)."

Chart 42
Comparison of Outsourcing in Japan and the United States

(1) Japan



(2) United States



Sources: Ministry of Health, Labor, and Welfare, "Industry Labor Situation Survey (CY 1997)";
PHP Research Institute, "Outsource Hayawakari (Outsourcing Handbook)."

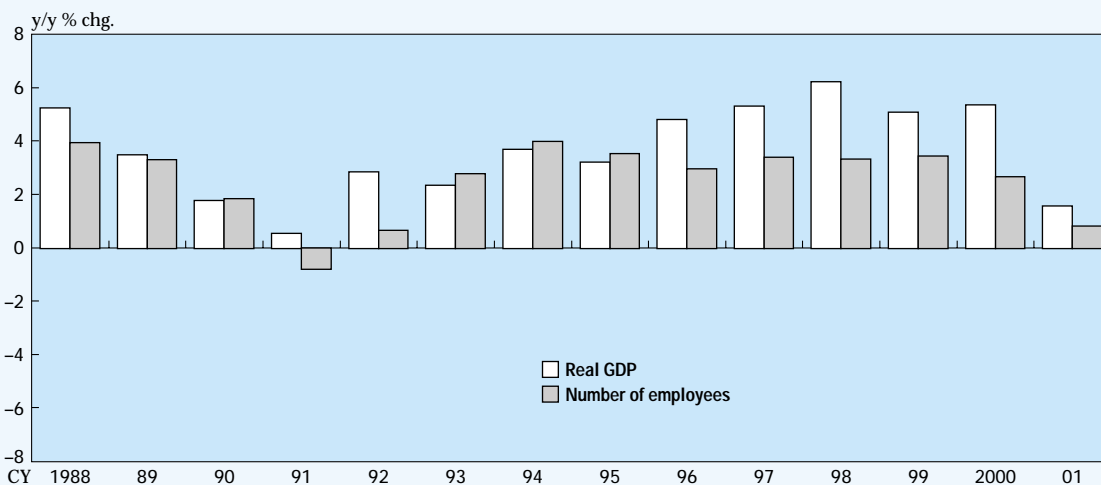
Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Chart 43
GDP Growth and Growth in the Number of Employees in the United States

(1) Manufacturing



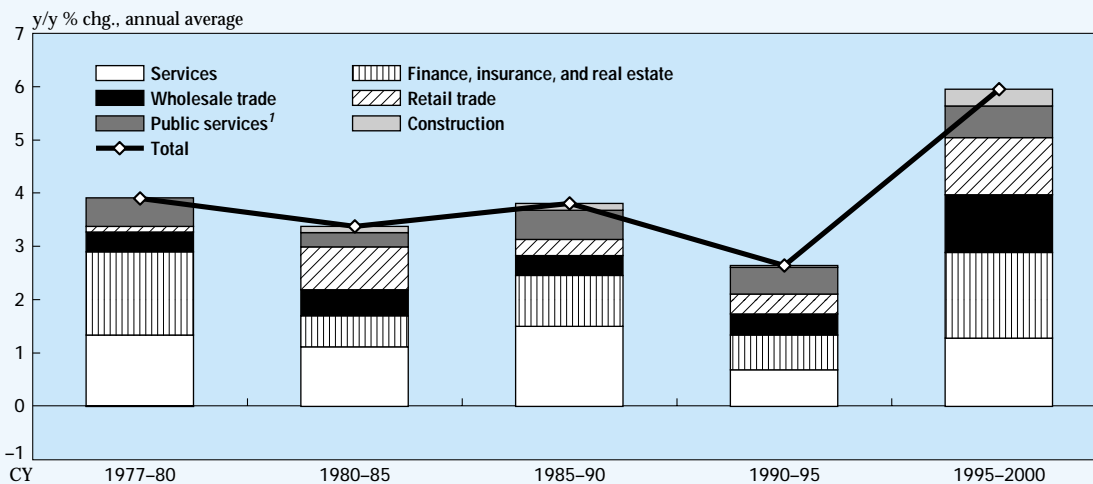
(2) Nonmanufacturing



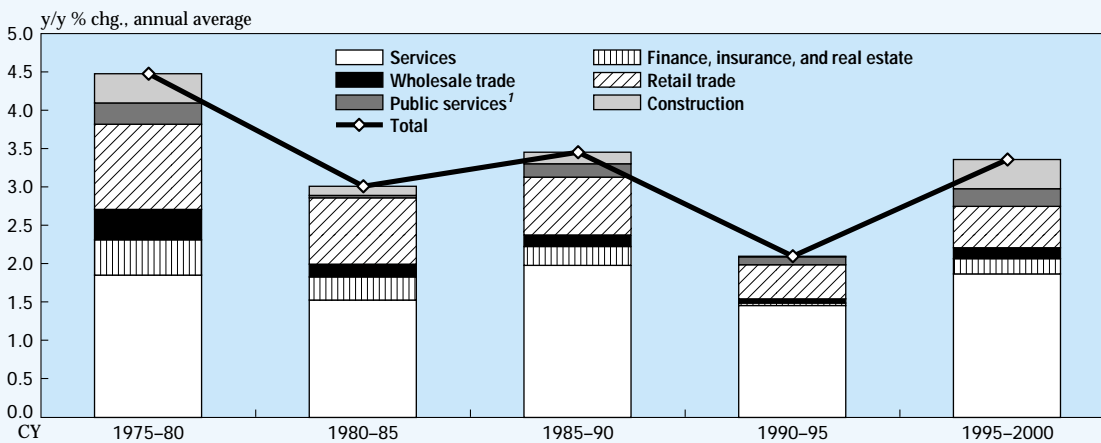
Sources: Bureau of Economic Analysis;
Bureau of Labor Statistics.

Chart 44
Nonmanufacturing in the United States

(1) Output Growth in Nonmanufacturing: Breakdown by Industry



(2) Growth in the Number of Employees in Nonmanufacturing: Breakdown by Industry



Note: 1. Includes Transportation, Communications, and Electric, gas, and sanitary services.

Sources: Bureau of Economic Analysis;
Bureau of Labor Statistics.

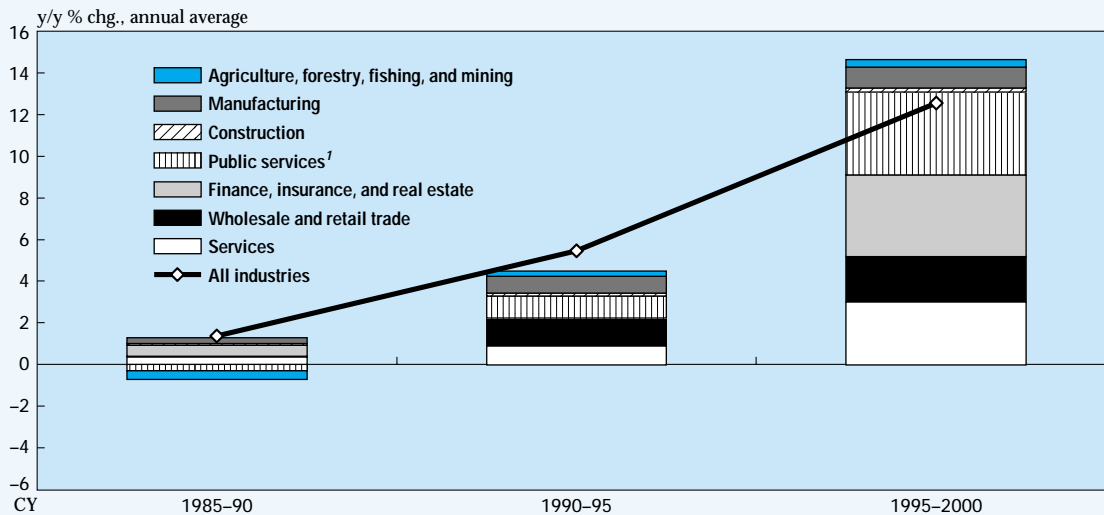
Recent Trends in Business Fixed Investment and the Issues

Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

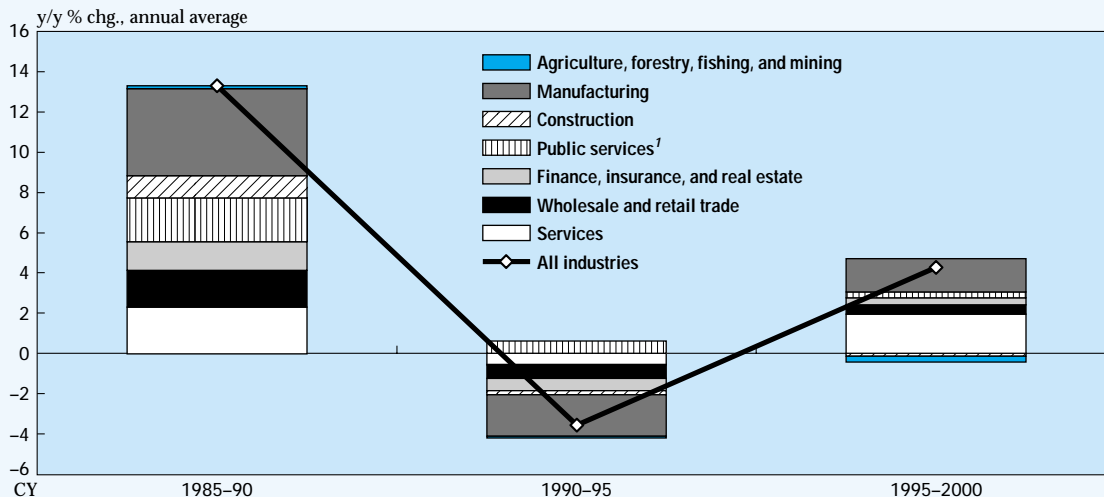
Chart 45

Comparison of Business Fixed Investment in Japan and the United States

(1) Growth Rate in Real Business Fixed Investment in the United States: Breakdown by Industry



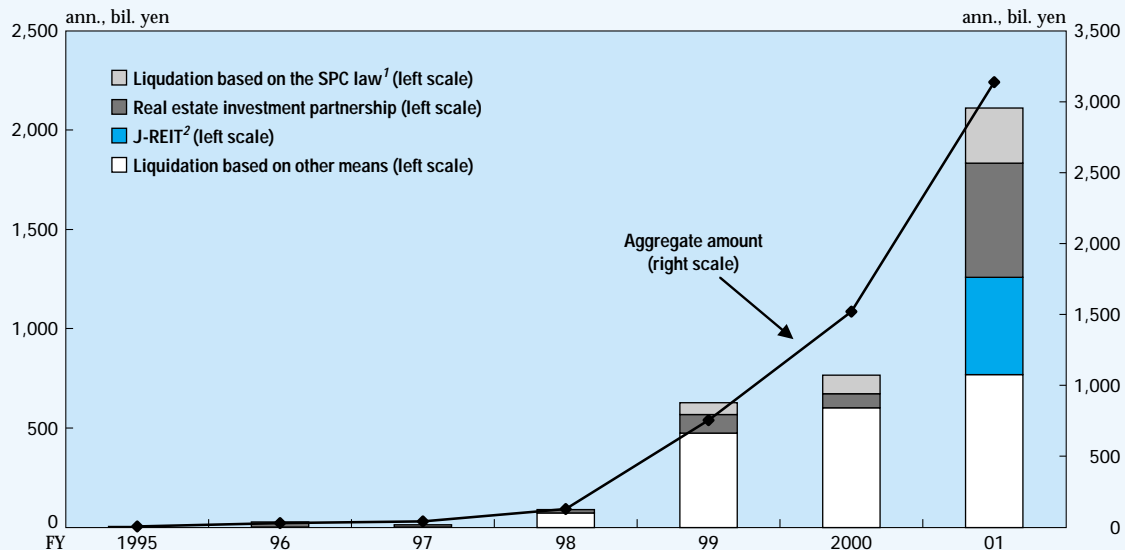
(2) Growth Rate in Real Business Fixed Investment in Japan: Breakdown by Industry



Note: 1. Includes Transportation, Communications, and Electric, gas, and sanitary services.
Sources: Cabinet Office, "Gross Capital Stock of Private Enterprises";
Bureau of Economic Analysis.

Chart 46
Liquidation of Real Estate

(1) Value of Real Estate Liquidation (By Means)

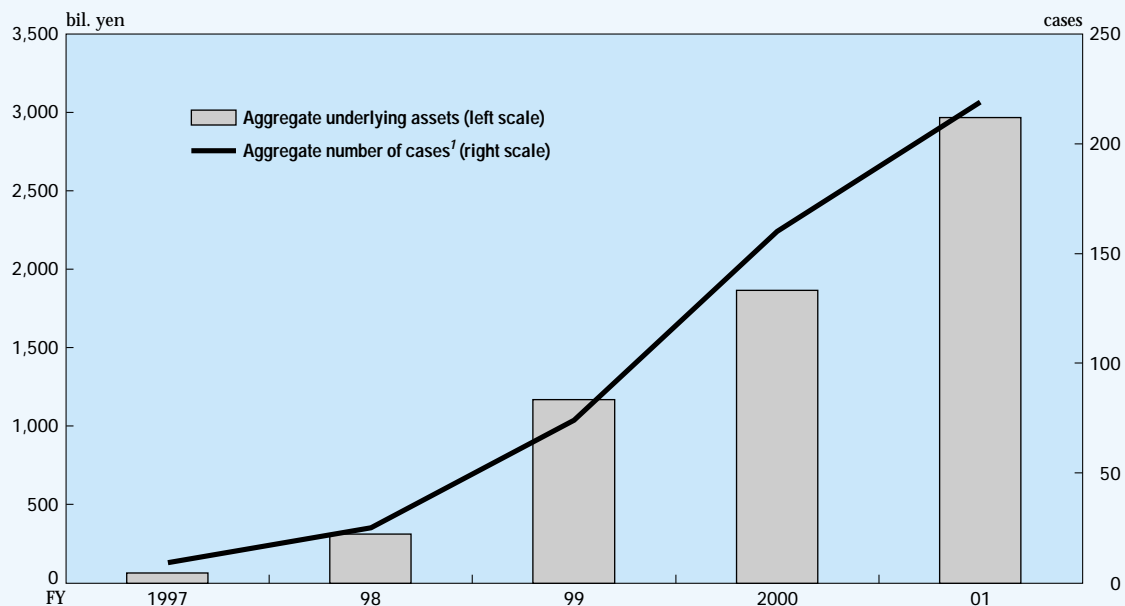


Notes: 1. Value of liquidation based on the SPC law is fiscal-year base. Other records are calendar-year base.

2. Value for J-REIT describes the current amount of invested assets.

Sources: The Association for Real Estate Securitization, "Handbook on Real Estate Securitization 2002";
Financial Services Agency, "Annual Report 2001."

(2) Value of Real Estate Liquidation (Aggregate Amount)



Note: 1. Each real estate investment corporation is counted as one case.

Source: Ministry of Land, Infrastructure and Transportation, "Survey of Real Estate Securitization."

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

Box 1 The Cost of Capital

When discussing the cost of capital, the work of Jorgenson in developing an argument for deriving the optimal capital stock is well known. Strictly speaking, we are referring here to the user cost of capital, which represents the real cost of making a capital investment at a given price and then making use of it for a certain period. The nominal cost is put together from three components: (1) the interest rate costs inherent in holding the capital; (2) any fall in the purchase price of the capital over the holding period (capital loss); and (3) depreciation in the value of the capital during the holding period. By using (4) the general price index to convert these into real terms, we are able to derive the real cost of capital. This can be described more explicitly using an equation,

$$\text{Capital cost} = P_k/P \times (i - P_k + \delta),$$

where P_k is the purchase price of capital goods, P is the general price index, i is the nominal interest rate, and δ is the rate of depreciation.

In other words, the capital cost rises in response to (1) a rise in the nominal interest rate (i), (2) a faster rate of decline in the purchase price of capital ($-P_k$) causing a larger capital loss to be incurred, (3) technological advance or some other factor that causes the rate of depreciation (δ) to rise, and (4) an increase in the purchase price of capital relative to the general price index (i.e., a deterioration in the terms of trade for firms making capital investments).

Looking at developments in the capital cost over the last 20 years or so (Chart 22), we see that while, as discussed in this paper, factors (2) and (3) above have been acting to push up the capital cost, factors (1) and (4) have been simultaneously acting to drive it down, and overall it is the factors driving down the capital cost that have prevailed. One thing that should be noted is that, like a price index, the concept of the capital cost is expressed only relative to its base level at a given point in time. For this reason, while it is possible,

as above, to examine the changes over time, the absolute level of the capital cost is not uniquely determined. This is explained further in the following paragraphs.

Let us try, for example, to calculate the absolute level of the recent capital cost using the above equation. To do so, we can use the following numbers: for the nominal interest rate (i) we can use the yield on long-term 10-year JGBs, currently less than 1 percent; for the rate of decline in the purchase price of capital ($-P_k$), we can use the annual fall in the deflator for business fixed investment of around 3–4 percent; while for the rate of depreciation (δ), we can use about 11 percent, based on the SNA data in which the amount of depreciation and the net capital stock of nonfinancial corporations are available. Adding these three nominal components of the capital cost together gives us a figure for $(i - P_k + \delta)$ of about 15 percent.

The problem arises when we come to the term describing the relative price of capital goods (P_k/P). The obvious choice is to make use of the business fixed investment deflator for P_k and to take P to be the GDP deflator. However, since the levels of each of these deflators are dependent upon the adopted base year, the value of P_k/P is not uniquely determined. If, in line with the current GDP statistics, we take the base year to be 1995 (i.e., if we assume that in the base year 1995, $P_k/P = 1$), then the recent figure for P_k/P becomes about 0.92, and the capital cost is about 14 percent (0.92×15 percent). However, if for example we were to adopt 1980 as the base year, then P_k/P would become about 0.72 and the capital cost would turn out to be about 11 percent (0.72×15 percent). The absolute level of the capital cost that we are looking to calculate here thus turns out to depend on the choice of base year. With this in mind, and from the viewpoint of avoiding any misunderstandings with regard to the level of the capital cost, we adopt an index expression in Chart 22, and we set this to 100 in 1995.

Box 2 The Capital Stock Cycle and the Expected Growth Rate

When business fixed investment takes place, the capital stock increases by the amount of the investment. At the same time, however, the capital stock decreases by the amount of depreciation that has occurred. In other words, there is a fundamental underlying relationship between the net increase in the capital stock (ΔK), the amount of business fixed investment (I), and the rate of depreciation (δ):

$$\Delta K = I - \delta K_{-1}. \quad (1)$$

The capital stock is essential for generating output; however, there is a further relationship between the two. As labor is replaced by capital in line with economic development, i.e., as capital deepening occurs, the capital coefficient (K/Y), obtained by dividing the capital stock (K) by output (Y), traces out a rising trend. Taking this trend rate of change of the capital coefficient to be a constant (γ), then the pace of capital stock accumulation ($\Delta K/K_{-1}$) must exceed the expected growth rate over the medium term (y^*) by exactly γ . In other words,

$$\Delta K/K_{-1} = \gamma + y^*. \quad (2)$$

Dividing both sides of equation (1) by K_{-1} , and then substituting into equation (2), we get

$$I/K_{-1} = \delta + \gamma + y^*.$$

Multiplying both numerator and denominator of the left-hand side by L_1 gives

$$(I/L_1) \times (I/K)_{-1} = \delta + \gamma + y^*. \quad (3)$$

Since this has a simple $xy = z$ form, then by fixing the right-hand side of the equation we can draw a hyperbolic relationship between the rate of increase in business fixed investment (I/L_1) and the ratio of business fixed investment to the capital stock at the end of the previous period $(I/K)_{-1}$.

In determining the value to assign to the right-hand side of equation (3), we begin by adopting 4.3 percent as the capital depreciation rate, based on actual past values (Chart 1 [1] for

Box 2). For the trend rate of change in the capital coefficient (γ), we take into account the assumption underlying equation (2) above, namely that capital utilization is fixed at 100 percent, and strip out of the observed movements in the capital coefficient the part that is correlated with shifts in the capital utilization rate. Having extracted this, we are left with an annual rate of trend growth in the capital coefficient of 2.3 percent (Chart 1 [2] for Box 2). There remains just the expected medium-term growth rate (y^*). We assign a range of values to this, each of which corresponds to one of the dotted curves in Chart 33.

Looking at the diagram describing the capital stock cycle (Chart 33), we can see that actual business fixed investment not only traces out a cycle every few years but that, at any given point in time, it lies around the region consistent with expectations of the medium-term growth rate at that time. Putting this another way, what we can see from the diagram is that there are two factors which influence the capital spending that takes place each year: (1) the expected growth rate, which is a medium-term factor; and (2) cyclical adjustment pressure, which is a short-term factor. To give an example, we can get a broad idea of the rate of increase in business fixed investment in fiscal 2003 by looking at the intersection of two lines: the vertical line representing business fixed investment/the capital stock at the end of 2003, and the curve that corresponds to the expected growth rate (noting that, while the curves are drawn for 1 percent intervals of the expected growth rate, there are of course an infinite number of such curves lying within each interval).

There are, however, a number of caveats here: (1) as can be clearly seen in Chart 33, a difference of just 1 percent in the expected growth rate, i.e., whether it is zero percent or 1 percent, can substantially alter the picture we get of business fixed investment for fiscal 2003; (2) the results are also sensitive to the values assigned for the depreciation rate and for the trend rate of change of the capital coefficient; and (3) there is potential for significant error in the capital stock statistics, which are the basic data for the analyses

Recent Trends in Business Fixed Investment and the Issues Attending a Full Recovery: Restoring Firms' Capacity to Generate Capital Investment

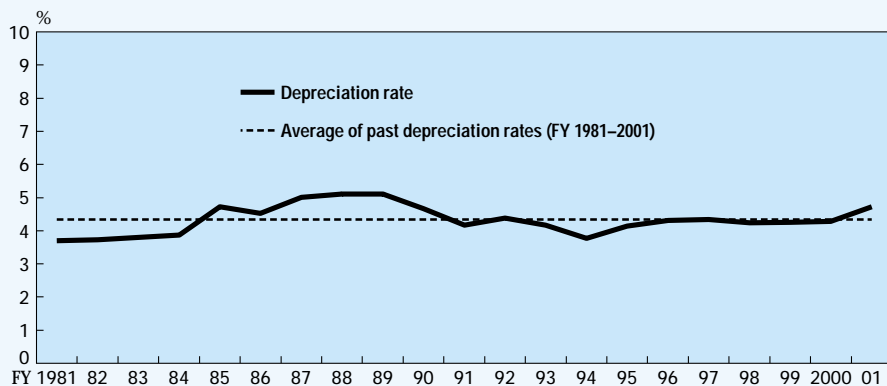
Box 2 (continued)

here. Bearing these caveats in mind, it is clear that the diagram describing the capital stock cycle is not precise enough to be used for forecasting purposes. It should be used, at most, as a method

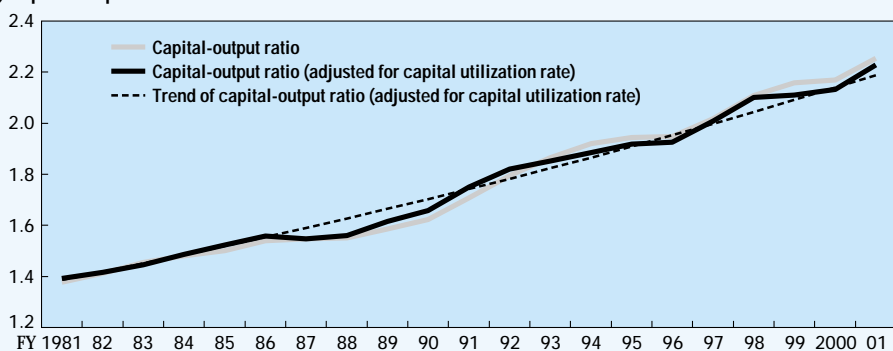
that takes into account both medium- and short-term factors to provide a rough sense of the current phase within which business fixed investment finds itself.

Chart 1 for Box 2 Depreciation Rate and Capital-Output Ratio^{1,2}

(1) Depreciation Rate



(2) Capital-Output Ratio



Notes: 1. The figures for the capital stock are adjusted for sample changes accompanying privatization of public companies.

2. The figures for the "capital-output ratio (adjusted for capital utilization rate)" remove the changes attributed to the capital utilization rate.

Sources: Cabinet Office, "National Accounts," "Gross Capital Stock of Private Enterprises"; Ministry of Economy, Trade and Industry, "Indices of Industrial Production."

Symbols and Abbreviations Used in This Article

CY	Calendar year	thous.	Thousands
FY	Fiscal year	bil.	Billions
Q	Calendar quarter	tril.	Trillions
%	Percent	ann.	Annualized
% points	Percentage points	s.a.	Seasonally adjusted