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Bank of Japan

# **Outlook for Economic Activity and Prices**

October 2011

(English translation prepared by the Bank's staff based on the Japanese original)

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## **The Bank's View<sup>1</sup>**

### **I. Introduction**

This October 2011 issue of the *Outlook for Economic Activity and Prices* (Outlook Report) presents the outlook for Japan's economy through fiscal 2013. The Outlook Report first provides a description of developments in global financial markets and overseas economies that are affecting trends in Japan's economy, followed by the Bank of Japan's assessment of the nation's financial environment. Next, the scenario considered to be the most likely by the Bank -- its baseline scenario -- is described, and upside and downside risks associated with the scenario are examined. Lastly, a summary of the Bank's basic thinking on the conduct of monetary policy is provided.

### **II. Global Financial Markets and Overseas Economies**

Strains in global financial markets have intensified since this summer, mainly reflecting concern about the sovereign debt problem in Europe. Although actions have been initiated recently to promote financial system stability, including ratification of the decision to increase the capacity and flexibility of the European Financial Stability Facility (EFSF) by 17 eurozone nations, financial market strains continue in light of remaining uncertainty about the implementation of such measures. The government bond yields have remained high in countries experiencing serious fiscal concern, such as Greece. Stock prices for European banks with significant exposure to the government bonds of concern have declined sharply, and short-term interest rates in the euro interbank markets have shown a distinct rise. The financial strains have started to affect the real economy through a tightening of financial institutions' lending attitude and a rise in lending rates, as well as a decline in business and household sentiment. Furthermore, in countries with serious fiscal concerns, additional fiscal austerity measures have been a drag on the economy in the short run. As such, in Europe a negative feedback loop among fiscal balances, the financial system, and the real economy is now in effect and uncertainty concerning the outlook for financial developments and economic activity has become elevated. In the United States, concern over an economic slowdown has intensified as a series of softer-than-expected

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<sup>1</sup> The text of "The Bank's View" was decided by the Policy Board at the Monetary Policy Meeting held on October 27, 2011.

economic indicators were released, and uncertainty regarding market prospects increased due to the fiscal debt ceiling problem and the downgrading of the credit rating for U.S. government bonds.

In such an environment, global investors have increasingly become risk averse. Stock prices have continued to be highly volatile around the globe, and credit spreads such as those on corporate bonds have widened in the U.S. and European markets. International commodity prices have also declined on the whole. Correspondingly, demand for assets perceived as safe has increased. The yields on U.S. and German government bonds have declined to historical lows. In the foreign exchange market, on the perception that it is a relatively safe currency, the yen has appreciated, together with the U.S. dollar and Swiss franc, mainly against the currencies of emerging and commodity-exporting economies.

Looking at developments in overseas economies with the situation described above in mind, after continuing strong growth led by emerging and commodity-exporting economies, the pace of growth has moderated since the spring of 2011, especially in advanced economies. By region, the underlying pace of recovery in the U.S. economy has remained quite modest against the background of the prolonged adjustment in excessive household debt and the housing markets as well as slow recovery in employment, although the slowdown in the spring partly reflected temporary factors such as high gasoline prices and the effect of the earthquake in Japan. European economies -- especially Germany, where exports are flourishing -- continued to recover gradually on the whole, but the pace has clearly slowed as a result of an aggravated financial environment caused by the sovereign debt problem and a deterioration in business and household sentiment. On the other hand, emerging and commodity-exporting economies have generally continued to see relatively strong growth -- against the background in which the autonomous positive feedback loop among production, income, and expenditure has basically been maintained -- although the pace has moderated somewhat due to waning real purchasing power caused by inflation, the effect of monetary tightening, and a slowdown in advanced economies. Inflationary pressures have not been sufficiently contained in many emerging and commodity-exporting economies.

In the Bank's baseline scenario, the growth pace of overseas economies, especially that of



advanced economies, is likely to remain slow for the time being against a backdrop of continued global financial market strains, but is expected to subsequently pick up led by emerging and commodity-exporting economies. Therefore, for the projection period on the whole, the growth rates of overseas economies are projected to be relatively high.<sup>2</sup> Looking at developments by country and region, the pace of growth in the U.S. economy is likely to remain modest despite the support from accommodative financial conditions reflecting the persistent strains from balance-sheet repair. In European economies, the effect of the sovereign debt problem will continue to weigh on economic activity for the time being, restraining economic recovery. Regarding emerging and commodity-exporting economies, as a gradual receding of inflationary pressure restores the real purchasing power of households, these economies are likely to achieve relatively strong growth, although some slowdown will continue in many economies for the time being. It should be noted, however, that the above projections are made based on the assumption that financial market shocks with possible significant impacts on economic activity are successfully avoided. Such an assumption is supported by the stance of policymakers, as the Group of 20 (G-20) communiqué of the Finance Ministers and Central Bank Governors meeting held in Paris in mid-October 2011 clearly states that they remain committed to taking all necessary actions to preserve the stability of banking systems and financial markets.

### **III. Japan's Financial Environment**

Japan's financial conditions have continued to ease as the Bank has pursued powerful monetary easing. Market interest rates, including longer-term ones, have remained at extremely low levels, and firms' funding costs have declined moderately. Issuing conditions for CP have remained favorable with the exception of a brief period after the quake. In the corporate bond market, new issuances temporarily paused in the face of some widening of credit spreads soon after the quake, but issuing conditions thereafter have

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<sup>2</sup> According to the projections for global economic growth (calculated as the aggregate of purchasing-power-parity weighted GDP growth projections for individual countries or regions) released by the International Monetary Fund in September 2011, the growth rates, especially those for advanced economies, were revised downward from the projections made in June. The global economy, however, is still expected to grow by 4.0 percent both in 2011 and 2012, and accelerate by 4.5 percent in 2013. For reference, the average growth rate during the 30 years since 1980 was 3.3 percent.

remained favorable except for electric power companies, which face difficulties with new issuance due to uncertainty concerning their business environment. Firms have continued to view financial institutions' lending attitudes as being on an improving trend. The financial positions of firms have continued to recover after an increase in the number of firms, especially small and medium-sized ones, experiencing weakness after the quake. Despite some differences depending on the size of firms, financial institutions' lending attitudes and the financial positions of firms have been on an improving trend on the whole and have recovered to the same levels as the average for the period since 2000, or somewhat better than the average. As such, the financial environment surrounding firms has continued to ease. Looking at funding in the corporate sector, for bank lending the year-on-year rate of decline has been gradually slowing and the outstanding amount has almost recovered to the previous year's level recently. The amounts outstanding of both corporate bonds and CP have exceeded their prior-year levels.

In the global financial market turmoil, there are marked differences between the financial environment in Japan as described above and that in the United States and Europe. For example, the LIBOR-OIS spread -- a proxy for strains in the interbank market -- has continued to widen for the U.S. dollar and the euro since this summer but has remained stable for the yen. Credit spreads on corporate bonds have been widening noticeably in the U.S. and European markets but have remained stable at low levels in Japan, as described. One of the background items to such differences is the fact that Japan's financial institutions do not hold a large amount of government bonds issued by the European countries at the center of the sovereign debt problem. Second, the total amount of risks held by Japan's financial institutions is also generally restrained relative to their capital levels, which they have endeavored to strengthen. In fact, financial institutions' credit cost ratios and nonperforming-loan ratios have been low in comparison to those in the United States and Europe, and funding liquidity risk including that in foreign currency has been also restrained. Third, the corporate sector holds relatively ample on-hand liquidity and there are no signs of a rush for additional liquidity funding, even in the face of the disturbance in global financial and capital markets. Fourth, the Bank has also been contributing to the easing of financial conditions by providing massive liquidity and purchasing risk assets such as CP, corporate bonds, exchange-traded funds (ETFs), and Japanese real estate

investment trusts (J-REITs) under the comprehensive monetary easing framework.

The easing trend in financial conditions will likely continue as the effects of the Bank's significant monetary easing spread further, and this is expected to support momentum toward a self-sustained recovery in domestic private demand. Stability in the financial environment will also be supported by the fact that Japan's financial system has gained reasonable robustness against a sharp economic downturn and a stock price plunge. Given the increasing global linkages of financial markets, however, Japan's financial environment is not immune from negative global developments. In practice, increasing risk aversion by global investors has been affecting Japan's financial markets in some areas since the summer, as evidenced by the yen's appreciation and stock price declines. It is necessary to maintain vigilance with regard to the possibility that further deterioration in global financial market conditions will affect Japan's financial system, and consequently the financial environment, through declines in stock and bond prices induced by the linkages between foreign and domestic financial markets as well as a deterioration in financial institutions' funding environment.<sup>3</sup>

#### **IV. Baseline Scenario of the Outlook for Economic Activity and Prices in Japan**

##### **A. Outlook for Economic Activity**

On the basis of the aforementioned developments in overseas economies and the financial environment at home and abroad, the following examines the scenario for Japan's economy that the Bank considers to be the most likely -- that is, the baseline scenario.

Japan's economic activity plunged after the Great East Japan Earthquake, mainly on the production and export side. Production activity declined sharply due to supply-side constraints caused by damage to production facilities and disruptions in supply chains, which resulted in a plunge in exports. Domestic private demand has also been weak, partly due to a deterioration in business and household sentiment that reflected uncertainty concerning the economic outlook and the effect of the nuclear power plant accident.

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<sup>3</sup> For more details on the assessment of the financial system stability in Japan, see the October 2011 issue of the Bank's *Financial System Report*.

Many firms have made serious efforts and come up with various ideas to overcome the quake-induced difficulties. They have carried out production at alternative sites and secured alternative suppliers while restoring damaged facilities. The resolution of supply-side constraints has progressed at a faster pace than originally anticipated. There is still uncertainty regarding the supply and demand of electric power, which rests primarily on the prospect of resuming operation of nuclear power plants after regular inspections. Nevertheless, despite the initial pressing concern that a possible power shortage this summer might seriously constrain economic activity, such a situation was avoided thanks to electric power companies' emergency measures to strengthen supply capacity, as well as firms' and households' efforts to conserve electricity and level out demand. As a result, production and exports have already been restored to the level registered before the quake-induced plunge.<sup>4</sup> Domestic private demand such as business fixed investment and private consumption has been also picking up on improvement in business and household sentiment.

As described above, during the period between the time of the quake until this summer, the pace of economic recovery had been determined by the pace of resolving supply-side constraints. However, as the supply-side constraints imposed by the disaster have now almost been resolved, the demand-side developments have become increasingly important. With this point in mind, the economic outlook for Japan can be described as follows. Although an adverse effect from a slowdown in overseas economies and the appreciation of the yen will continue for the time being, Japan's economy is expected to return to a moderate recovery path because the pace of recovery in overseas economies will subsequently pick up and the demand related to reconstruction after the earthquake disaster will gradually materialize. In the second half of fiscal 2011, a slowdown in overseas economies and the appreciation of the yen will have an adverse effect on the economy, especially on the export and production front, while reconstruction-related demand

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<sup>4</sup> After the revision to seasonal adjustments reflecting unusually large fluctuations following the Lehman shock, the published industrial production index is considered to have some bias, showing higher growth rates for the October-December and January-March quarters and lower rates for the April-June and July-September quarters. Therefore, the actual level of production in the July-September quarter is considered to be higher than as read in the statistics.

associated with the restoration of capital stock will gradually materialize in a variety of channels, such as public investment, business fixed investment, housing investment, and consumption of durable consumer goods. In fiscal 2012, as the growth rates of overseas economies gradually pick up, Japan's economy is projected to register a relatively high rate of growth supported by the transmission mechanism by which the strength in exports and production feeds through into income and spending. In addition, the support from reconstruction-related demand is likely to continue throughout the fiscal year. In fiscal 2013, the economy is expected to grow at a pace above its potential, led by robust demand from overseas economies, especially emerging and commodity-exporting economies, although the growth rate is expected to be lower than that in fiscal 2012 because the contribution from reconstruction-related demand will gradually diminish.<sup>5</sup> The growth rates for fiscal 2011 and 2012 are expected to be somewhat lower than the projection in the July 2011 interim assessment because of the effects of a slowdown in overseas economies and the appreciation of the yen. Somewhat detailed explanations of the outlook broken down by the corporate and household sectors are as follows.

Regarding the corporate sector, exports and production are expected to continue increasing against a background of robust demand from overseas, especially emerging and commodity-exporting economies. For the time being, although a slowdown in overseas economies and the appreciation of the yen will continue to be a drag, exports and production are most likely to remain on an increasing trend because manufacturers -- automakers in particular -- will restore the level of inventory abroad, which sharply declined after the earthquake, and work off an accumulated backlog of domestic orders. Demand related to reconstruction after the earthquake is also expected to increase gradually from both the private sector, including fixed investment and housing investment, and the public sector. Against this background, corporate profits are expected to continue recovering gradually. As evident in firms' annual business plans, business fixed investment is also likely to keep increasing gradually against the background of a recovery

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<sup>5</sup> Japan's potential growth rate during the projection period is estimated to be "around 0.5 percent" based on a standard production function approach. However, estimates of the potential growth rate are subject to a considerable margin of error as they greatly depend on the specific methodology employed and could change as more data for the relevant period become available.

in corporate profits and global and domestic demand.<sup>6</sup> In this regard, partly as a result of the yen's appreciation, firms are expected to strengthen their investment overseas. Although this has substituted for investment in Japan to some extent in the past, an expansion of overseas investment has often been pursued as a strategic move by firms to capture rising local demand overseas more effectively. At the same time, firms have made efforts to differentiate the role of domestic offices and factories from that of overseas production sites by shifting to more value-added activities. As for the outlook, although due attention needs to be paid to the possibility that domestic fixed investment and employment will be affected by a rapid shift of companies to overseas, the basic expectation is that overseas investment and domestic investment will increase by complementing each other. In addition, domestic business fixed investment will likely be supported by various needs arising from the earthquake such as repair and rebuilding of damaged facilities, as well as strengthening of their capacity for resistance to earthquakes and work to develop business continuity, including data backups.

As for the employment and income environment surrounding the household sector, despite a plunge in economic activity, a significant employment adjustment was avoided partly due to the relaxation of conditions for receiving employment adjustment subsidies. Working hours were also shortened after the plunge but have been recovering, especially in the manufacturing sector, with the recovery in economic activity led by production. Wage developments have been somewhat weak against a backdrop of deterioration in corporate profits due to the earthquake. Summer bonuses showed negative year-on-year growth, especially at small and medium-sized firms. As for the outlook, recovery in economic activity will gradually spread to the employment and income environment. In consideration of the time lag, however, an increasing trend in employment and wages will become evident only in fiscal 2012 and thereafter. In such an employment and income environment, private consumption weakened due to an economic plunge and deterioration in sentiment caused by the earthquake, but has been recovering on the whole. With regard to the outlook, private consumption is expected to gradually become more firm against a

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<sup>6</sup> According to the September 2011 *Tankan* (Short-Term Economic Survey of Enterprises in Japan), the domestic business fixed investment plan for fiscal 2011 is expected to exceed the previous year's level as it has been revised upward for the second half of fiscal 2011.

backdrop of gradual recovery in the employment and income environment. In the meantime, backed by low interest rates and a rise in the demand related to reconstruction, housing investment will likely continue increasing moderately throughout the projection period.

## **B. Outlook for Prices**

Based on the above projections for economic activity, the following examines the outlook for price developments. Looking at the underlying trend of the consumer price index (CPI) for all items less fresh food, the year-on-year rate of decline has continued to slow consistently since around the end of 2009 with a gradual improvement in the aggregate supply and demand balance, and is currently at around 0 percent.<sup>7</sup>

Regarding the outlook for the environment surrounding prices, the state of utilization of employment and production capacity, which reflects the aggregate supply and demand balance of goods and services, is expected to continue improving gradually with the economy's moderate recovery trend. According to the survey targeted at households and firms and at economists, medium- to long-term inflation expectations have not significantly changed so far and are expected to remain stable throughout the projection period. According to the surveys of market participants and economists, the expected rate of inflation in the medium to long term has been stable in recent years, at around 1.0 percent, and has not changed notably even after the downward revision of the CPI due to the base-year change. International commodity prices, which recently softened reflecting the global economic slowdown, are expected to increase moderately over the relatively long term led by food and energy prices. Such an increase is backed by the continued high growth in emerging economies that seek vigorously to raise their basic living standards in terms of housing, food, and clothing.

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<sup>7</sup> In August, the base year of the CPI was changed to 2010 and year-on-year rates of change for all items less fresh food as far back as January 2011 were revised retroactively. Taking the average for the period from January to July 2011, the year-on-year rate of change in the CPI for all items less fresh food was revised downward by about 0.6 percentage point. The downward revision was mainly due to resetting of the index levels for durable consumer goods, which had significantly declined on the 2005 base. As a result of the resetting, a decline in the prices of those goods on the total CPI index has a larger impact.

As for the outlook for prices on the basis of the aforementioned environment, the domestic corporate goods price index (CGPI) is expected to continue rising moderately on an annual basis throughout the projection period, reflecting a moderate increase in international commodity prices and the improvement in the aggregate supply and demand balance. With such an improvement in the balance and stable medium- to long-term inflation expectations, the year-on-year rate of change in the CPI will remain at around 0 percent for the time being but will gradually rise to around 0.5 percent toward the latter half of the projection period.

## **V. Upside and Downside Risks**

### **A. Risks to Economic Activity**

The aforementioned outlook is the scenario the Bank considers to be the most likely, in other words, its baseline scenario. The following upside and downside risks concerning the outlook for economic activity warrant attention.

The first risk concerns developments in global financial markets, especially those related to the sovereign debt problem in Europe. Given high uncertainty regarding the possible outcome of the sovereign debt problem in Europe, including its impact on the global economy, there is a possibility that global investors' risk-averse behavior will further intensify in financial and foreign exchange markets. If this results in further appreciation of the yen and a stock price fall, such events could cause Japan's growth outlook to deviate downward partly through a deterioration in business and household sentiment. Furthermore, given that a rise in the outstanding amount of sovereign debt not only in peripheral European countries but also in many of the advanced economies has been a source of instability in global financial markets, there is a possibility that financial markets will find the fiscal restructuring efforts in Japan to be insufficient. If this were to happen, it could have an adverse impact on economic activity through a rise in long-term interest rates and a fall in stock prices.

The second risk, which is related to the first one, concerns uncertainty about developments



in overseas economies. Looking at advanced economies, balance-sheet repair has continued to be a drag on U.S. economic growth, making it difficult to gain upward momentum and creating vulnerability to downside risks. Against the background of the continuing slump in housing prices, the slow pace of recovery in employment, and the limited room for further monetary and fiscal stimulus, due attention is warranted to the risk that the slowdown in the U.S. economy will be prolonged beyond the expectation. As for European economies, due attention needs to be paid to the possibility that a negative feedback loop among fiscal balances, the financial system, and the real economy will intensify, triggered by the sovereign debt problem. In many emerging and commodity-exporting economies, there remains a high degree of uncertainty about whether price stability and economic growth can be realized at the same time. If inflationary pressure persists despite monetary tightening, downside risk to the growth outlook warrants attention.

With regard to the outlook for global financial markets and overseas economies, there is also a possibility that further progress being made in initiatives to tackle the aforementioned problems in Europe -- such as fiscal reconstruction, and measures to restore financial system stability and structural reforms -- will result in a receding of global investors' risk aversion and a decrease in uncertainty concerning the global economic outlook. In such a case, the global economy, and consequently Japan's economy, could achieve stronger growth through improvement in business and household sentiment.

Third, there is uncertainty with regard to the demand related to reconstruction after the earthquake disaster. In disaster areas, replacement demand for damaged durable consumer goods such as autos and home appliances has already seen somewhat of an increase. Various activities aiming at reconstruction are ongoing, including removal of debris and construction of temporary housing. However, the restoration of capital stock such as infrastructure, business facilities, and housing has been carried out only on a limited scale both in the public and private sectors.

These kinds of reconstruction-related demand are expected to gradually expand into a full-scale operation as reconstruction plans, including a long-term vision for the recreation

of local communities, become more concrete and the supplementary budget is executed. However, it is still necessary to allow for a wide margin when projecting the scale and timing of reconstruction-related demand, as well as its impact on economic activity, because these depend on several factors including how quickly the reconstruction plan will become more concrete and whether the long-term vision of regional economies can be developed to enable a virtuous cycle of private demand work.

Fourth, there is uncertainty with regard to firms' and households' medium- to long-term growth expectations. Although these are expected to be maintained in a baseline scenario, possible changes warrant due attention. Japan's economy, which had already faced a declining trend in growth rates partly reflecting a rapid aging of its society, was confronted with additional challenges by the earthquake such as uncertainty regarding the supply and demand of electric power and steady progress in reconstruction. If it should therefore turn out to be difficult to overcome such challenges or further yen appreciation continues to suppress corporate profits as well as the employment and income environment -- or if new domestic production activity does not emerge to compensate for a shift of production to overseas -- then firms' and households' medium- to long-term growth expectations will decline and the growth outlook for the projection period is more likely to worsen.

On the other hand, if firms strengthen their capacity to explore global demand by expanding their business abroad, including that through mergers and acquisitions, and strengthen their capacity to create new goods and services that are highly original and more immune to price competition in domestic markets, medium- to long-term growth expectations could rise despite a rapidly aging population. If revitalization of local economies progresses on the back of reconstruction following the earthquake, or if prospects for achieving sustainability in the fiscal situation and social security system improve, then such positive effects could boost the medium- to long-term growth expectations. Efforts to address the challenge regarding the supply and demand of electric power may contribute to enhancing potential growth capacity through technological innovation and development of new business models.

## **B. Risks to Prices**

There is also uncertainty regarding the outlook for prices, which could deviate either upward or downward from the projection. To begin with, if any of the aforementioned upside and downside risks to economic activity materialize, prices might be affected accordingly. There are also the following risks specific to prices. The first concerns firms' and households' medium- to long-term inflation expectations. Even in the case where economic activity follows the baseline scenario, it takes time before positive inflation is firmly established. In such an environment, there is a possibility that firms and households will have increased expectations that prices are unlikely to rise even in the medium to long term. If medium- to long-term inflation expectations decline, it becomes more likely that actual prices and wages will deviate downward from the projection.

The second risk concerns developments in import prices. Considerable uncertainty surrounds developments in primary commodities such as crude oil, with potential for movement in either direction. Global demand for foods and energy will increase on the back of strong growth in emerging economies that seek vigorously to raise their basic living standards in terms of housing, food, and clothing, while supply capacity for such primary products has limited room for further expansion, at least in the short run. Given such a supply and demand structure for primary commodities, an upward revision in the growth outlook for emerging economies could result in a sharp rise in international commodity prices. On the other hand, if downside risks to the global economic outlook materialize, intensified risk aversion by global investors could trigger an accelerated decline in international commodity prices. In addition, fluctuations in foreign exchange rates could also affect consumer prices to a certain extent directly through changes in import prices and indirectly through changes in economic activity.

## **VI. Conduct of Monetary Policy**

The Bank assesses the economic and price situation from two perspectives and then outlines its thinking on the future conduct of monetary policy, taking into account the "understanding of medium- to long-term price stability" (hereafter "understanding") -- that is, the level of inflation that each Policy Board member understands, when conducting

monetary policy, as being consistent with price stability over the medium to long term. The current "understanding" shows that "on the basis of a year-on-year rate of change in the CPI, it falls in a positive range of 2 percent or lower, centering around 1 percent."

The first perspective involves assessing the baseline scenario of the outlook for economic activity and prices -- that is, the scenario considered to be the most likely -- through fiscal 2013. As noted earlier, although an adverse effect from a slowdown in overseas economies and the yen's appreciation will continue for the time being, Japan's economy is expected to return to a moderate recovery path because overseas economies will maintain relatively high growth, led by emerging and commodity-exporting economies, during the projection period on the whole, and the demand related to reconstruction after the earthquake disaster will gradually materialize. As for prices, the year-on-year rate of decline in the CPI has continued to slow consistently since around the end of 2009 and is currently at around 0 percent. Based on the projection taking into account the recent price developments as described above, with the improvement in the aggregate supply and demand balance and stable medium- to long-term inflation expectations, the year-on-year rate of change in the CPI will remain at around 0 percent for the time being but will gradually rise to around 0.5 percent toward the latter half of the projection period. Comprehensively assessing the outlook for economic activity and prices described above, the Bank expects that, although some more time will be needed to confirm that price stability is in sight on the basis of the "understanding," Japan's economy will eventually return to a sustainable growth path with price stability in the longer run.

The assessment from the second perspective examines the risks considered most relevant to the conduct of monetary policy, including risks that have a longer time horizon than the first perspective.<sup>8</sup> In the area of economic activity, the effect of balance-sheet repair on the U.S. economy still warrants attention. With regard to the sovereign debt problem in Europe, due attention needs to be paid to the possibility that a negative feedback loop among fiscal balances, the financial system, and the real economy will intensify. As for emerging and commodity-exporting economies, there remains a high degree of uncertainty about whether

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<sup>8</sup> For example, the Bank examines risk factors that will significantly impact economic activity and prices when they materialize, although the probability of such risks arising is low.

price stability and economic growth can be realized at the same time. There is a need to carefully examine how Japan's economy will be affected by the uncertainties regarding developments in overseas economies and ensuing disturbances in financial and foreign exchange markets. On the price front, considerable uncertainty surrounds the outlook for international commodity prices with potential for movement in either direction. There is also a risk that inflation rates will deviate downward from the projection as a result of a decline in medium- to long-term inflation expectations.

The Bank has been pursuing its comprehensive monetary easing policy introduced in October 2010 mainly through the purchase of financial assets under the Asset Purchase Program, which has been repeatedly expanded in size on a significant scale. In addition, the Bank has made it clear that it will continue the virtually zero interest policy until it judges that price stability is in sight on the basis of the "understanding," on condition that no problem is identified in examining risk factors, including the accumulation of financial imbalances.

As for the future conduct of monetary policy, the Bank -- in order for Japan's economy to overcome deflation and return to a sustainable growth path with price stability, and based on the examination from the two perspectives described above -- will continue to consistently make its utmost contributions as the central bank through the three-pronged approach of pursuing powerful monetary easing consisting of comprehensive monetary easing, ensuring financial market stability, and providing support to strengthen the foundations for economic growth.

Japan's economy faces not only a short-term and cyclical problem of recovery from a plunge in demand after the Lehman shock. More fundamentally, a long-term and structural problem -- namely, a decline in medium- to long-term growth expectations -- is of greater significance. Japan has confronted the fundamental challenge of a declining trend in growth rates reflecting a rapidly aging society and stagnant growth in labor productivity. In addition, Japan's economy faces a new challenge of reconstruction after the earthquake disaster. With the highest government debt level in terms of GDP among advanced countries, Japan also needs to present a clear medium-term roadmap for fiscal restructuring

in order to maintain market participants' confidence. In order to respond to these challenges and form the basis for future economic development, it is important for the government, the central bank, financial institutions, and business firms to continue making efforts in their respective roles to strengthen sustainable economic potential in the medium to long term, with a correct understanding of the aforementioned situation of the economy.

(Appendix 1)

**Forecasts of the Majority of Policy Board Members**

y/y % chg.

	Real GDP	Domestic CGPI	CPI (all items less fresh food)
Fiscal 2011	+0.2 to +0.4 [+0.3]	+1.7 to +2.0 [+1.8]	0.0 to 0.0 [0.0]
Forecasts made in July 2011	+0.2 to +0.6 [+0.4]	+2.2 to +2.5 [+2.4]	+0.6 to +0.8 [+0.7]
Fiscal 2012	+2.1 to +2.4 [+2.2]	+0.1 to +0.3 [+0.2]	0.0 to +0.2 [+0.1]
Forecasts made in July 2011	+2.5 to +3.0 [+2.9]	+0.5 to +0.9 [+0.6]	+0.6 to +0.7 [+0.7]
Fiscal 2013	+1.3 to +1.6 [+1.5]	+0.7 to +0.9 [+0.8]	+0.4 to +0.6 [+0.5]

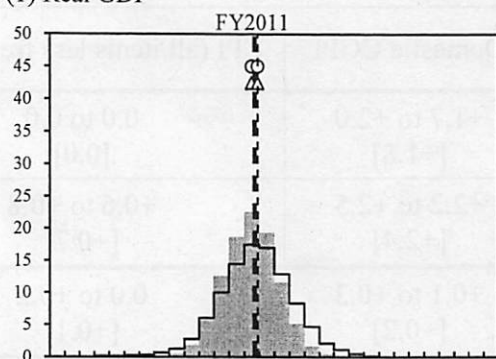
- Notes:
1. Figures in brackets indicate the median of the Policy Board members' forecasts (point estimates).
  2. The forecasts of the majority of the Policy Board members are constructed as follows: each Policy Board member's forecast takes the form of a point estimate, namely, the figure to which he or she attaches the highest probability of realization. These forecasts are then shown as a range, with the highest figure and the lowest figure excluded. The range does not indicate the forecast errors.
  3. Individual Policy Board members make their forecasts with reference to the view of market participants regarding the future course of the policy interest rate -- a view that is incorporated in market interest rates.
  4. The base year for the CPI was changed from 2005 to 2010. Revisions from the previous CPI forecast largely reflect this base-year change.
  5. CPI using the Chain-weighted Index Formula has also been released as a reference. Based on this chain-weighted index, the year-on-year rate of change in the CPI around fiscal 2013 may be slightly lower than the above forecasts based on the Fix-weighted Index Formula.
  6. The ranges shown below include the forecasts of all Policy Board members.

y/y % chg.

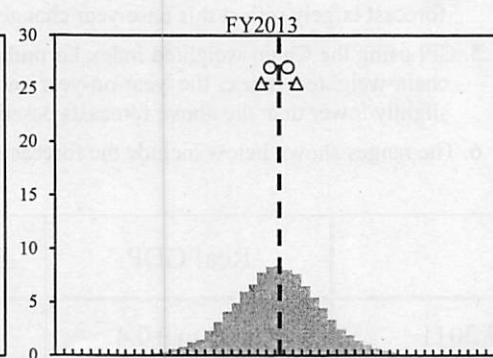
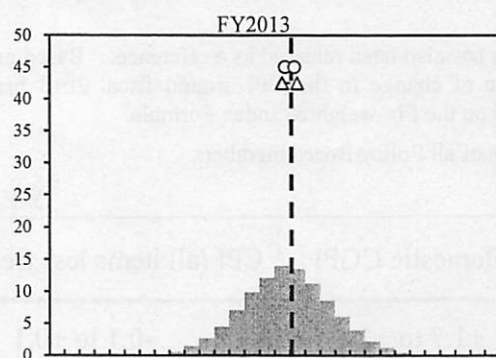
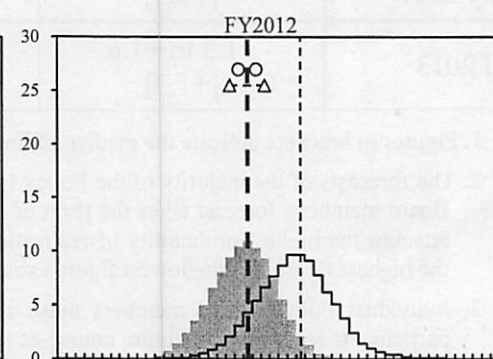
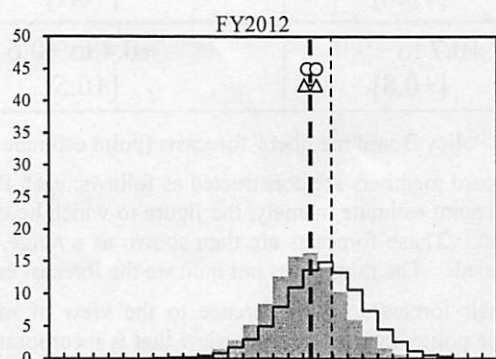
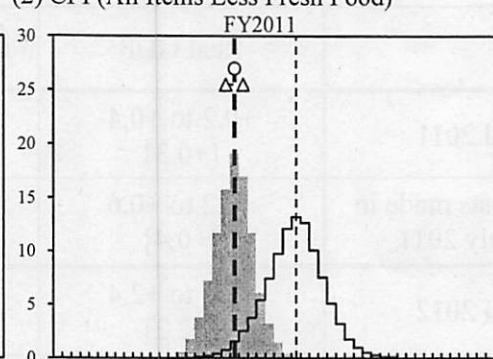
	Real GDP	Domestic CGPI	CPI (all items less fresh food)
Fiscal 2011	+0.2 to +0.4	+1.7 to +2.1	-0.1 to +0.1
Forecasts made in July 2011	+0.2 to +0.6	+2.2 to +2.6	+0.5 to +0.8
Fiscal 2012	+2.0 to +2.4	+0.1 to +0.4	-0.1 to +0.3
Forecasts made in July 2011	+2.5 to +3.0	+0.3 to +1.0	+0.4 to +0.8
Fiscal 2013	+1.2 to +1.7	+0.6 to +1.0	+0.3 to +0.7

## Risk Balance Charts

(1) Real GDP



(2) CPI (All Items Less Fresh Food)



Notes: 1. Vertical axes in the charts represent probability (%), while horizontal axes represent the year-on-year percentage changes in the respective indicators. Bar charts represent the probability distributions in October 2011, and solid lines represent those in July 2011.

2. Vertical dashed heavy lines indicate the median of the Policy Board members' forecasts (point estimates).  $\bigcirc$ — $\bigcirc$  indicates the range of the forecasts of the majority of Policy Board members.  $\triangle$ — $\triangle$  indicates the range of the forecasts of all Policy Board members.

3. Vertical dashed thin lines indicate the median of the Policy Board members' forecasts (point estimates) in July 2011.

4. The base year for the CPI was changed from 2005 to 2010. Revisions from the previous CPI forecast largely reflect this base-year change.

5. For the process of compilation of the Risk Balance Charts, see the box on page 9 of the April 2008 *Outlook for Economic Activity and Prices*.



## **The Background**

### **I. Economic, Price, and Financial Developments in the First Half of Fiscal 2011**

#### ***Economic Activity***

Looking back at the first half of fiscal 2011, Japan's economic developments were dominated by the effects of the Great East Japan Earthquake on March 11 (Chart 1). Production and exports, which had started to resume an increasing trend after the turn of the year, decreased substantially following the earthquake due to supply-side constraints such as supply-chain disruptions (Charts 2 [1] and 3 [1]). In this situation, domestic private demand also became weak due to a deterioration in business and household sentiment. Despite the significant downturn in economic activity, restoration efforts began promptly after the disaster. The pick-up in economic activity, mainly against the background of the repair of supply-chain disruptions, progressed at a faster pace than originally anticipated thanks to firms' swift and flexible responses, and production and exports had been restored to pre-quake levels this summer.

Specifically, the earthquake sharply dampened production, not only in the disaster areas but also in other areas throughout the country, by causing supply-side constraints such as damage to production facilities, supply-chain disruptions, and electric power shortages. The decline in production was particularly substantial in the automobile industry, where buffer stocks of parts and components were kept to a minimum due to its strict adherence to the just-in-time inventory system. Such developments led to a substantial drop in exports of finished products and parts, and this acted as a constraint on production worldwide, especially in the automobile industry (Chart 3 [1] and [2]). Household and business sentiment also deteriorated, mainly due to heightened uncertainty about the economic outlook and increased voluntary restraint in consumer spending, as well as concerns about the risk of aftershocks and subsequent developments at the Fukushima Daiichi nuclear power plant (Charts 1 [2] and 5 [2]). These developments, together with the supply-side constraints, restrained business fixed investment and reduced household spending; for example, in terms of private consumption and housing investment (Charts 4 [2], 5 [1], and 6).

Restoration efforts started promptly and supply-side constraints were eased gradually. With regard to electricity, concerns about supply-side constraints receded and a series of planned blackouts effectively ended in early April as the supply capacity of electric power recovered, mainly due to the restoration of disaster-stricken thermal power plants, alongside a seasonal decline in demand for electric power brought about by a rise in temperature. In the corporate sector, on the other hand, restoration of many of the damaged production facilities progressed rapidly, allowing firms to resume production relatively quickly. The supply of parts that had temporarily been scarce gradually increased as well, as firms carried out production at alternative sites and secured alternative suppliers both at home and abroad. These various moves included coordinated efforts made across firms. As a result, restoration of supply chains progressed at a faster pace than originally anticipated, and production and exports picked up rapidly from around May (Chart 3 [1] and [3]). In such a situation, business and household sentiment improved gradually and domestic private demand picked up. Business fixed investment turned toward an increase, partly due to a rise in the number of projects involving the restoration of affected facilities. Private consumption started picking up mainly in goods consumption, partly owing to the substantial increase in sales of household appliances resulting from a rush in demand prior to the end of analog TV broadcasting and from a rise in demand for power conservation-related products, although services consumption took somewhat longer to recover, particularly in travel (Chart 5 [3]). Meanwhile, with regard to the employment and income situation, a significant employment adjustment was avoided despite some observed effects of the post-quake economic downturn and decrease in corporate profits. The adjustment was avoided partly due to the quick pick-up in economic activity and the relaxation of conditions for receiving employment adjustment subsidies (Chart 7). This was another factor supporting household spending.

Despite concerns that economic activity would be restrained again in the summer due to a deterioration in the supply and demand balance of electric power, economic activity was not affected considerably thanks to efforts to strengthen power supply capacity by using more thermal power, and efforts made at firms and households to conserve electricity and level out demand. More specifically, operation of nuclear power plants did not resume after regular inspections, not only in areas directly stricken by the nuclear accident, such as the

service areas of Tokyo Electric Power Company (TEPCO) and Tohoku Electric Power Company, but also in the rest of Japan due to concern about their safety. This heightened concerns about possible adverse effects on economic activity, as the supply and demand balance of electric power deteriorated in the summer with an increase in demand for air-conditioning. The government therefore imposed mandatory restrictions on large-lot electricity users in the service areas of TEPCO and Tohoku Electric Power Company to reduce electricity consumption in peak hours to a level more than 15 percent below that of last year during July-September, and called on small-lot users including households to save a more or less equivalent amount of energy. In the service areas of Kansai Electric Power Company, which relied heavily on nuclear power, the government requested that firms and households reduce peak electricity consumption to a level 10 percent below that of last year, amid bleak prospects for resuming operation of nuclear power plants after regular inspections. In response to these governmental actions, firms worked to cut back total consumption of electric power through various energy conservation efforts aimed at reducing electricity consumption in peak hours and with minimum effects on economic activity, and to level out electricity use by days of the week and time of day (Chart 8).<sup>9</sup> Some firms introduced or expanded in-house power generation facilities, while households made efforts to conserve electric power by using less electricity or introducing energy-saving household appliances. As a result, a situation in which economic activity was seriously constrained by a power shortage was avoided, and production and exports were more or less restored to pre-quake levels.

Japan's economic activity has continued to pick up, although at a more moderate pace than during the period leading up to early summer, when it rapidly rebounded from the quake-induced plunge. Exports and production have continued increasing moderately after recovering rapidly in May and June, albeit with some effects of the slowdown in overseas economies. The increase has been led by automobiles, which have faced high pent-up demand. With regard to domestic private demand, business fixed investment and private consumption have continued to pick up. Housing investment has also shown clear signs of picking up mainly due to the resumption of projects that had been put on hold in view of the need to resolve supply-side constraints imposed on construction materials, and

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<sup>9</sup> See Box 1 for details on the effects of power saving this summer.

of the risk of aftershocks. Public investment has almost stopped declining, although there have been fluctuations, mainly against the background of construction of temporary housing and restoration of social infrastructure.<sup>10</sup>

Reflecting these economic developments, utilization of labor and production capacity has resumed an improving trend after deteriorating temporarily in the period following the earthquake (Chart 9 [1] and [2]). Looking at the weighted average of the *Tankan* (Short-Term Economic Survey of Enterprises in Japan) diffusion indices (DIs) of production capacity and employment conditions, where indices are weighted by capital and labor shares, the indicator improved in September after temporarily declining in June (Chart 9 [3]). The estimated negative output gap, although widening for a while after the earthquake, also appears to be narrowing again.

### *Prices*

On the price front, the year-on-year rate of increase in the domestic corporate goods price index (CGPI) rose reflecting the rise in international commodity prices observed toward this spring (Chart 10 [1]). The year-on-year rate of change in the corporate services price index (CSPI, excluding international transportation) continued declining in response to firms' cutback in expenses, but the pace of decline slowed mainly reflecting the relatively long-term recovery trend in corporate activity (Chart 10 [2]). The year-on-year rate of decline in the consumer price index (CPI) for all items less fresh food continued slowing from around the end of 2009, and has recently been more or less at 0 percent based on the new 2010 base-year index introduced in August 2011 (Chart 11 [1]).<sup>11</sup> Similar trends can be confirmed in the trimmed mean<sup>12</sup> or the Laspeyres chain index,<sup>13</sup> which reflect little

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<sup>10</sup> See Box 2 for details on economic developments in disaster areas.

<sup>11</sup> In August, the base year of the CPI was changed to 2010 and year-on-year rates of change for all items less fresh food as far back as January 2011 were revised retroactively. Taking the average for the period from January to July 2011, the year-on-year rate of change in the CPI for all items less fresh food was revised downward by about 0.6 percentage point. See Box 3 for details on the base-year change.

<sup>12</sup> Figures for the 10 percent trimmed mean are weighted averages of items; these items are obtained by rearranging year-on-year rates of price change in ascending order and then excluding items in both the upper and lower 10 percent tails by weight.

discontinuity caused by the base-year change (Chart 11 [2]). These developments in consumer prices can be interpreted as effects of the rise in international commodity prices and of the gradual improvement in the aggregate supply and demand balance feeding through to prices, albeit with a time lag, amid stable medium- to long-term inflation expectations among firms and households. Looking at a breakdown of the CPI (all items less fresh food), as with goods, the positive contribution from petroleum products increased while the year-on-year rate of decline slowed, particularly in prices for food products (Chart 12 [2]). As for services, the rate of change in housing rents and prices of eating out remained more or less unchanged, while the rise in prices for other services accelerated gradually partly due to price changes in overseas package tours (Chart 12 [3]). The year-on-year rate of increase in prices of public services accelerated, mainly against the background of price changes in electricity charges and airfares. The improvement in the year-on-year rate of change in prices of services, including public ones, can partly be attributed to the fact that the negative contribution from the effects of subsidies for high school tuition introduced in April 2010 had fallen off when they came to an end this past April. As for the effects of the disaster on prices, price rises due to tightening of the supply and demand conditions were partly observed in a few products including food, daily necessities, and construction materials reflecting tightening of the supply and demand balance, but no significant changes were seen in most other goods and services. Prices of goods that had been on the rise also started falling, together with the resolution of supply-side constraints. As such, the effects of the disaster on prices turned out to be relatively small.

### ***Financial Markets***

Strains in global financial markets have intensified since this summer, mainly reflecting concern about the sovereign debt problem in Europe. Concern about this problem, particularly uncertainty about additional support measures for Greece, has heightened in financial markets. Against this backdrop, countries with fiscal concerns, especially Greece, have seen a rise in credit default swap premiums and spreads in their long-term interest rates against German government bonds (Chart 13). Consequently, market participants

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<sup>13</sup> The Laspeyres chain index is a price index compiled by reviewing the weights of items of the base year every year in order to reflect changes in each item since the base year.

have become more critical of European banks with significant exposure to the government bonds of concern. In the United States, concern over an economic slowdown has intensified as a series of softer-than-expected economic indicators were released and uncertainty regarding market prospects increased due to the fiscal debt ceiling problem and the downgrading of the credit rating for U.S. government bonds.

In such an environment, global investors have increasingly become risk averse. Stock prices, especially those of financials, have declined sharply in the U.S. and European markets and implied volatility has increased significantly (Chart 14). In the U.S. and European money markets, credit spreads on interbank transactions have shown a distinct rise since this summer as suppliers of funds have become more cautious due to rising concern about the counterparty risk, especially for European financial institutions (Chart 15 [1]). In the face of such developments, five central banks, including the Bank of Japan, announced the collaborative initiative to conduct the U.S. dollar funds-supplying operations covering the year-end. With regard to corporate finance, in the U.S. and European corporate bond markets, credit spreads have widened since this summer reflecting increased risk aversion by investors (Chart 15 [2]).

In the meantime, policy rates have been maintained at a low level in the United States. In this situation, in September, the U.S. Federal Reserve (FRB) decided to extend the average maturity of its 400 billion U.S. dollar holdings of Treasury securities and reinvest principal payments on agency debt and agency mortgage-backed securities on its balance sheet in agency mortgage-backed securities. In Europe, the European Central Bank (ECB) raised policy rates by 25 basis points in April and again in July, in response to rising inflationary pressures. In August, the ECB also announced its intention to use the Securities Market Programme that was introduced in May 2010 to more actively respond to malfunctioning of the government bond markets caused by the sovereign debt problem, and aim at restoring the transmission mechanism of monetary policy. Monetary policy responses in emerging and commodity-exporting economies have started to diverge. While policy rates have been raised or maintained at relatively high levels in China and India, Brazil and Indonesia changed their course and started to cut policy rates. In this situation, in emerging and commodity-exporting economies as a whole, inflationary pressures persist and there

remains a high degree of uncertainty about whether price stability and economic growth can be realized at the same time (Chart 16).

Looking at financial and capital markets in Japan, the overnight call rate remained at an extremely low level in the money market, and the T-Bill rates -- including those with 1-year maturity -- declined to around 0.1 percent as the Bank pursued significant monetary easing (Chart 17 [1]). Credit spreads on interbank transactions have remained stable (Chart 15 [1]). Premiums for U.S. dollar funding through the yen/dollar foreign exchange swap market have risen somewhat but are relatively stable compared to those through the euro/dollar foreign exchange swap market (Chart 17 [2]).

Market participants have established their view that short-term money market rates will remain at low levels for the time being (Chart 17 [3]). In this environment, the Bank encouraged a decline in longer-term interest rates through its comprehensive monetary easing framework and yields on 2-year government bonds have remained at extremely low levels, in the range of 0.10-0.15 percent. Yields on 10-year government bonds have also remained at extremely low levels, at around 1 percent, while U.S. and German long-term interest rates declined to historical lows reflecting rising global demand for assets perceived as safe (Chart 18).

Stock prices in Japan edged down as those in the U.S. and European markets declined substantially and foreign investors recorded net sales (Chart 19 [1] and [2]). In the Japanese real estate investment trust (J-REIT) market, prices remained weak reflecting concern that the interests of current investors were being diluted by capital increases (Chart 19 [3]).

In foreign exchange markets, against the background of increasing risk aversion by global investors, the yen has appreciated, together with the U.S. dollar and the Swiss franc, particularly against currencies of commodity-exporting and emerging countries (Chart 20).

In August 2011, the Bank decided to increase the total size of the Asset Purchase Program by about 10 trillion yen, to about 50 trillion yen, based on the recognition that rising

uncertainty regarding the global economic outlook and ensuing fluctuations in financial and foreign exchange markets called for closer attention to downside risks.

### ***The Financial Environment***

Looking at the financial environment in Japan, financial conditions have continued to ease on the whole as the number of firms, especially small and medium-sized ones, seeing weakness after the quake started to decline. Issuing conditions for CP have remained favorable, with credit spreads staying at a level comparable to the pre-quake period following a brief period of slight deterioration following the quake (Chart 21 [1] and [2]). In the corporate bond market, new issuances temporarily paused soon after the quake. Thereafter, however, issuing conditions have recovered and become favorable at a relatively fast pace, except for electric power companies, which faced heightened uncertainty concerning their business environment. In the recovery process, the Bank's purchase of corporate bonds under the Asset Purchase Program helped calm anxiety in the market. While credit spreads remained at low levels, the variety of corporate bond issuers increased and the amount of issuance was higher than a year before (Chart 22).

The average interest rates on new loans and discounts have continued to decline gradually, reflecting declines in market interest rates including relatively long-term ones (Chart 23 [1]). Firms' funding costs have declined moderately against the background of the aforementioned developments in the CP, corporate bond, and bank lending markets. Although stimulative effects from low interest rates are still partly constrained given the current growth rates and prices, interest payments by firms have remained at sufficiently low levels in relation to their profitability (Chart 24).

With regard to the availability of funds for firms, both large and small firms have continued to view financial institutions' lending attitudes as being on an improving trend (Chart 25 [1]). The financial positions of firms have recovered moderately after experiencing an increase in the number of firms, especially small ones, seeing weakness after the quake (Chart 25 [2]). Comparing current indicators relevant to financial institutions' lending attitudes and the financial positions of firms with those in the past, many are at the same



levels as the average for the period since 2000 or somewhat better than the average. As such, the financial environment surrounding firms has continued to ease.

Such developments in Japan's financial environment significantly differ from those in the United States and Europe. For example, credit spreads on corporate bonds have remained stable at low levels in Japan, as described; on the contrary, those in the U.S. and European markets were generally stable until the middle of this year but started widening thereafter in reflection of increasing risk aversion by investors, and have widened noticeably, especially since this summer (Chart 15 [2]). Also, as described, while lending attitudes of financial institutions in Japan have been on an improving trend, those of financial institutions in Europe have recently turned cautious (Chart 26). One background item to such differences is the fact that Japan's financial institutions do not hold a large amount of government bonds issued by the European countries at the center of concern. In addition, since the Lehman shock, Japan's financial institutions have made continued efforts to strengthen their capital bases through issues of new shares and retained earnings, thereby restraining the total amount of risk compared with the amount of capital. The corporate sector has also managed to gain a certain leeway for financing by maintaining financial soundness and holding relatively ample on-hand liquidity. In addition, the Bank has been contributing to the easing of the financial environment by pursuing significant monetary easing.<sup>14</sup>

Within the aforementioned financial environment, firms' demand for working capital has increased, backed by the recovery in production activity after the quake. However, demand for external finance has been limited given the ample on-hand liquidity held by firms and the still moderate pace of increase in business fixed investment, including that related to reconstruction after the quake.

As for firms' funding, the year-on-year rate of decline in bank lending has continued to slow moderately (Chart 23 [2]). The outstanding amount of CP and corporate bonds issued has continued to exceed the prior-year level on the whole (Charts 21 [3] and 22 [2]). Meanwhile, the year-on-year change in money stock (M2) has been in the range of 2.5-3.0 percent (Chart 23 [3]).

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<sup>14</sup> See Box 4 for details on indicators for assessing the financial environment.

Land prices declined both in metropolitan and nonmetropolitan areas. According to the *Land Price Survey by Prefectural Governments* as of July 1, 2011, the year-on-year rate of decline has slowed somewhat

both for commercial and residential land prices in the three major metropolitan areas (Tokyo, Osaka, and Nagoya) (Chart 27). In nonmetropolitan areas, both commercial and residential land prices have continued to decline at the same pace as the previous year. As for the 23 wards of Tokyo, the pace of decline in commercial land prices accelerated somewhat while that for residential land prices was almost the same as six months ago.<sup>15</sup>

## **II. The Outlook for Economic Activity and Prices from the Second Half of Fiscal 2011 through Fiscal 2013**

### ***The Outlook for Economic Activity and Prices***

Having emerged from the rapid rebound phase with the resolution of supply-side constraints, Japan's economy in the second half of fiscal 2011 is likely to shift to a phase in which it will be particularly affected by developments on the demand side, such as exports and demand related to reconstruction after the earthquake.<sup>16</sup> Despite the effects of the slowdown in overseas economies and of the yen's appreciation, exports are likely to follow a moderate increasing trend as overseas demand remains firm as a whole led by emerging economies. This process is also supported by a restocking of overseas inventories, particularly in the automobile industry. At home, demand related to reconstruction is expected to gradually become full-fledged, and pent-up demand is likely to continue increasing for some time as supply-side constraints are resolved. After entering fiscal 2012, with a pick-up in overseas

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<sup>15</sup> Land prices are compared on a semiannual basis for areas that are surveyed in both the *Public Notice of Land Prices* and the *Land Survey by Prefectural Governments*.

<sup>16</sup> Looking at projected economic growth rates on a seasonally-adjusted quarterly basis, the growth rate from the previous quarter is likely to be highest in the July-September quarter of 2011, when a rebound in economic activity after the quake-induced plunge is expected, and slow after the October-December quarter. On a semiannual basis, the growth rate for the first half of the fiscal year (April-September 2011) will likely be negative, reflecting the negative growth in the January-March and April-June quarters, while relatively high growth is expected in the second half of the fiscal year (October 2011-March 2012) due to the carry-over effect from the high growth registered in the July-September quarter.

economies, Japan's economy is projected to register a relatively high growth rate supported by positive momentum that is propelled by exports and production, with their strength feeding through into income and spending, and by the contributions of reconstruction-related demand throughout the fiscal year. In fiscal 2013, the economy is expected to continue growing at a pace above its potential led by robust demand from overseas economies, especially emerging and commodity-exporting economies, although the growth rate is expected to be lower than that in fiscal 2012 because the contribution from the reconstruction-related demand will gradually diminish.

Expressing the outlook in terms of annual real GDP growth rate, this is projected to be in the range of 0.0-0.5 percent, 2.0-2.5 percent, and around 1.5 percent in fiscal 2011, fiscal 2012, and fiscal 2013, respectively. The projected growth rates, particularly the rate for fiscal 2012, are likely to be somewhat lower than those in the July 2011 interim assessment due to the slowdown in overseas economies and the appreciation of the yen.

Considering these developments in terms of the investment-saving balance, net saving will continue for the domestic sector on the whole despite the continued large fiscal deficit of the general government, as the household saving rate will likely remain relatively high and net saving in the corporate sector will remain significant throughout the projected period (Chart 28 [1]). Correspondingly, the current account surplus is likely to continue, particularly in the income balance. In fiscal 2011, the saving surplus of the domestic sector is likely to decrease temporarily as corporate profits decrease due to the disaster, which will correspond to a reduction in the current account surplus accompanying a deficit in the trade balance.<sup>17</sup> In fiscal 2012 onward, the saving surplus of the domestic sector will increase again on the whole due to improvement in the fiscal deficit resulting from increased tax revenues, although the saving surplus of the private sector will decrease mainly due to a pick-up in consumption. Such developments will correspond to an increase in the current account surplus.

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<sup>17</sup> After the quake, exports plunged due to supply-side constraints. Imports of intermediate goods and foodstuffs increased mainly as a result of demand for alternatives, and those of raw materials such as crude oil and natural gas increased mainly in response to a rise in demand for thermal energy (Chart 2 [2]). As a result, the balance on goods and services turned to a deficit in April-August on an annual basis (Chart 28 [2]).

As for the outlook for prices in terms of price indexes, the year-on-year rate of increase in the CGPI is expected to pick up in fiscal 2011 reflecting the surge in international commodity prices toward spring 2011, but is likely to become moderate in fiscal 2012 and beyond. Looking at the CPI, the year-on-year rate of change is expected to remain at around 0 percent for the time being, but will gradually rise to around 0.5 percent toward the latter half of the projection period with the improvement in the aggregate supply and demand balance and stable medium- to long-term inflation expectations. Compared with the July 2011 interim assessment, the projection for the CGPI is somewhat lower for fiscal 2011 and 2012 due to effects of the subsequent decline in international commodity prices and the appreciation of the yen. The projection for the CPI is lower for fiscal 2011 and 2012, mainly due to effects of the base-year change and partly owing to developments in international commodity prices.

Given these economic and price developments, the pace of growth in nominal income is likely to be weak for a while in fiscal 2011, but is expected to start recovering in fiscal 2012 and beyond.

The following provides supplementary details on the underlying mechanism of developments in economic activity and prices.

### ***Supply and Demand of Electric Power***

The aforementioned economic outlook is based on the assumption that economic activity will not be constrained due to a deterioration in the supply and demand balance of electricity. There remains high uncertainty, however, regarding the outlook for the supply and demand of electric power. As for this past summer, the effects of the supply and demand of electricity on economic activity remained limited, thanks to moves by electric power companies and firms to strengthen supply capacity and to efforts by firms and households to conserve electricity and level out demand. If the supply of electricity generated by nuclear power is reduced further, however, the future supply and demand balance will deteriorate for both summer and winter. This will give rise to the need to introduce further energy conservation measures for restraining demand for electric power at

its peak and to further strengthen supply capacity by using, for example, thermal power. Effects may spill over to economic activity in such an event.

### ***Government Spending***

Public investment, which had been on a declining trend under the severe fiscal conditions, has almost stopped declining, mainly against the background of construction of temporary housing and restoration of social infrastructure (Chart 29 [1]). It is expected to start increasing as full-fledged demand related to reconstruction materializes. Moreover, expenses related to the earthquake disaster for premises, such as debris removal costs, will push up government consumption. The first supplementary budget, of approximately 4 trillion yen, was approved on May 2 and the second supplementary budget, of approximately 2 trillion yen, on July 25. On July 29, the Headquarters for the Reconstruction from the Great East Japan Earthquake, established by the government, decided the Basic Guidelines for Reconstruction in response to the Great East Japan Earthquake (hereafter the Basic Guidelines). The Basic Guidelines designated the next five years, until the end of fiscal 2015, as the "intensive reconstruction period" and stated that reconstruction expenditures during the period would amount to at least 19 trillion yen.<sup>18</sup> Of that amount, a total of approximately 6 trillion yen has already been designated in the first and second supplementary budgets. The remaining 13 trillion yen is also expected to be budgeted in the near future, with most of it included in the third supplementary budget scheduled to be deliberated in the Diet. Proposals with regard to the funding of reconstruction -- namely, for the implementation of a temporary tax increase, particularly in income tax -- are also scheduled to be deliberated in the Diet.

### ***The Environment Surrounding Exports***

After continuing strong growth led by emerging and commodity-exporting economies, the pace of growth in overseas economies has moderated since the spring of 2011, especially in advanced economies (Chart 30). The underlying pace of recovery in the U.S. economy has remained quite modest against the background of the prolonged adjustment in excessive

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<sup>18</sup> According to the Basic Guidelines released by the government on July 29, the total size of projects for reconstruction over the next ten years will be at least 23 trillion yen.

household debts and the housing markets, as well as slow recovery in employment. In European economies, the pace of recovery has clearly slowed as a result of deterioration in financial conditions and business and household sentiment caused by the sovereign debt problem. On the other hand, the pace of growth in emerging and commodity-exporting economies has slowed somewhat due to waning real purchasing power caused by inflation, the effect of monetary tightening, and a slowdown in advanced economies. Effects of the weakening of global demand for IT-related goods have been seen in countries such as South Korea and Taiwan, heavily weighted in exports of such goods. On the whole, however, emerging and commodity-exporting economies have generally continued to see relatively strong growth against the background that the autonomous positive feedback loop among production, income, and expenditure has basically been maintained due to high medium- to long-term growth expectations. Inflationary pressures, therefore, have not been sufficiently contained in many emerging and commodity-exporting economies.

In the Bank's baseline scenario, the growth pace of overseas economies, especially that of advanced economies, is likely to remain slow for the time being against a backdrop of persisting global financial market strains, but is expected to pick up led by emerging and commodity-exporting economies. Therefore, for the projection period on the whole, the growth rates of overseas economies are projected to be relatively high (Chart 31). Looking at developments by country and region, the pace of growth in the U.S. economy is likely to remain modest reflecting the persistent strains from balance-sheet repair despite the support from accommodative financial conditions. In European economies, the effect of the sovereign debt problem will continue to weigh on economic activity for the time being, restraining economic recovery. Regarding emerging and commodity-exporting economies, as a gradual receding of inflationary pressure will restore the real purchasing power of households, these economies are likely to achieve relatively strong growth, although some slowdown will continue in many economies for the time being.

Taking this situation into account, Japan's exports are expected to continue increasing throughout the projection period on the whole, against a background of robust demand from overseas, especially emerging and commodity-exporting economies. For the time being, however, the effects of the slowdown in overseas economies and appreciation of the yen

will likely continue to be a drag, as will the weakening of global demand for IT-related goods. There is also a possibility that Japan's exports and production will decline due to effects of the flooding in Thailand. Nevertheless, the increasing trend itself is likely to be maintained, as restocking of overseas inventories that had been depleted after the earthquake takes place, particularly for automobiles (Chart 32).

Taking a closer look at capital goods and IT-related goods, which are expected to be significantly affected by the slowdown in overseas economies, exports of capital goods have recently shown weakness, especially in those to China, despite the fact that they had remained firm with few effects from supply-side constraints after the earthquake (Chart 33 [1]). Machinery orders, a leading indicator of exports of capital goods, and orders for machine tools from abroad, have been declining since the April-June quarter (Chart 33 [2]). Sales projections for machinery used to manufacture semiconductor products toward fiscal 2012 have also been lowered (Chart 33 [3]). However, if the growth pace of the world economy starts to pick up again, led by emerging economies, exports of capital goods are likely to boost the growth pace again, particularly for those destined to emerging economies that are highly motivated toward business fixed investment (Chart 33 [4]).

Looking at the environment surrounding IT-related goods, the shipment of semiconductors worldwide has recently been decreasing and market prices of semiconductors have been weak (Chart 34 [1], [2], and [3]). The inventory-shipment balance in Asian countries such as South Korea has also been deteriorating somewhat (Chart 34 [4]). This is due to the weakening global demand for final goods such as flat-panel televisions and personal computers. In addition, the recent increasing concerns about the weakness in demand for electronic parts and devices can partly be attributed to widespread cautious views about the upcoming Christmas sales in the United States and Europe, which have caused manufacturers of final demand to restrain their production to meet the Christmas demand. Taking this into account, exports of IT-related goods, especially electronic parts and devices, are likely to be relatively weak for the time being. If the global economy emerges from its deceleration phase and starts growing at a faster pace again, however, Japan's exports of IT-related goods will likely recover their growth trend as well.

### *Shift to Overseas Production*

An increasing number of firms have recently been shifting their production to overseas. The most fundamental factor behind this is (1) the increasing trend in overseas demand and the shrinking of the domestic market, although there are also several other factors at work, including (2) the relative appreciation of the yen compared to the levels before the Lehman shock, (3) the rapid catch-up of production technology overseas, and (4) concern about a rise in production costs at home. The background to and implications of a shift to overseas production is described below, including the issue of recent concerns about a possible hollowing-out of industries.

First, overseas demand is increasing and the domestic market has been on a shrinking trend. The overseas production ratio of Japanese firms has been rising over a protracted period. This basically corresponds to the fact that the pace of increase in the GDP of overseas economies came to exceed that of Japan from around the mid-1990s (Chart 37 [1]). The recently ongoing shift to overseas production is not an exception. In fact, recent surveys conducted on firms confirm that the most frequently raised reason for overseas investment is to meet local demand (Chart 37 [2]).

The aforementioned difference between the growth rates in Japan and overseas can be partly attributed to this shrinking of the domestic market or the sluggish increase in its pace of growth. Japan's working-age population has been contracting since the mid-1990s, resulting in continued structural downward pressure on the domestic market for durable consumer goods such as automobiles.<sup>19</sup> After the Lehman shock, markets for automobiles and household appliances grew rapidly thanks to temporary policy measures including the eco-point system for household electrical appliances, as well as a tax reduction and subsidies for purchasers of environmentally friendly cars. These measures have gradually come to an end, once more revealing the shrinking trend of the domestic market, which may be encouraging firms to further expand their business overseas (Chart 35 [3]).

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<sup>19</sup> Japan's economy has faced the problem of a declining trend in its growth rate mainly against the background of an intensifying rapid aging of the population. See Box 5 for details on the relationship between aging and medium- to long-term growth rates.



Second, in addition to these trend factors, there is a possibility that over the past two to three years the relative appreciation of the yen compared to the levels in the preceding period has been encouraging firms to shift their production to overseas. More specifically, the real effective exchange rate of the yen was on a significantly depreciating trend during the years leading up to the Lehman shock, in a situation where the global economy, including the United States and Europe, continued to register high growth (Chart 35 [1]). In such a depreciating phase, firms considerably increased their exports by raising their production level through active investment at home (Chart 35 [2]). After the Lehman shock, however, the price competitiveness of Japanese industries subsided as the yen's real effective exchange rate appreciated, partly due to its rebound from the previous phase of depreciation, as large-scale adjustment pressure weighed on the U.S. and European economies. There is a possibility that an increasing number of firms have decided to shift their production overseas in recognition of the continuation of the foreign exchange rate levels that emerged after the Lehman shock. In fact, looking at developments in overseas production ratios in different phases of foreign exchange rate developments, growth in the overseas production ratio accelerated in the yen appreciation phase with a time lag of several years and decelerated in the yen depreciation phase, which indicates that fluctuations in the foreign exchange rate have affected the timing of the expansion of overseas production to a certain extent (Chart 37 [3]).

Third, production technology overseas, including in emerging economies, has been catching up with that in Japan. In the past, only labor-intensive industries shifted to overseas, such as to Asia. A typical example is electronic machinery, in which labor-intensive manufacturing lines of production shifted to emerging economies such as China. Recently, however, the technology level in emerging economies has been rising rapidly, even in transport machinery, for which large disparities in the technology level had formerly been said to exist between Japan's economy and overseas economies (Chart 35 [4]).

Fourth, various issues facing domestic production are often highlighted by the business sector as a factor contributing to the shift of production to overseas. Specifically, firms are concerned about the following factors: strengthened regulations against non-regular forms of employment; the effective rise in Japan's tariffs on imported goods in relation to those in

other countries induced by progress in free trade agreements (FTAs) and the Trans-Pacific Partnership (TPP) abroad; the possibility of a rise in electric power costs; and the relatively high corporate tax rate (Chart 36). In addition, some firms have begun to review their global production network strategy with the aim of further diversifying production, reflecting a growing awareness of costs that may arise in the case of supply-chain disruptions due to the disaster.

Taking the above into account, Japan's overseas production ratio is likely to continue rising along a medium- to long-term growth trend mainly against the background of growth in overseas demand. Moreover, from a cyclical perspective, overseas production is likely to grow at a somewhat faster pace over the next two to three years. This reflects a rebound from the temporary slowdown experienced in the preceding period that was caused by effects of the yen's depreciation up to around 2007 as well as additional factors brought to attention due to the disaster, including a rise in costs and the need for risk diversification.

The crucial point is whether such increase in overseas production will lead to the so-called "hollowing-out of industries" that brings about decreases in investment and employment at home. On this point, past rises in overseas production ratios have not simply brought about a negative effect on Japan's economy but have also had a positive effect through, for example, (1) exports destined to overseas factories, (2) income from royalties and license fees paid by overseas subsidiaries, (3) merchanting, and (4) dividend income and reinvestment earnings from overseas subsidiaries (these are included in direct investment income received) (Chart 38). In addition, business fixed investment at home tended to increase in line with investment overseas, partly reflecting efforts to strengthen the competitiveness of domestic production through an increase in the value added of products. As such, based on past experiences, overseas production has been carried out with success in capturing global demand and in realizing a more advanced form of international division of labor.

Comparing the amount outstanding of overseas direct investment across countries, Japan is significantly behind other advanced countries in terms of capturing global demand (Chart 39). In Japan, which faces a further aging of the population, the issue of labor shortage is

likely to grow into a serious problem in the long term. Thus, in order to strengthen growth potential, it is important to proceed with efforts to (1) capture more global demand and engender an increase in corporate value by taking further advantage of overseas production, and (2) make use of labor in more advanced industries and in businesses targeted at the aging society at home.

However, in the event that firms' shift to overseas production accelerates mainly due to a significant appreciation of the yen at a stage where momentum for economic recovery has not strengthened sufficiently, attention should be paid to the possibility that growth in new industries, as well as employment opportunities, will fail to keep up with the resultant decline in domestic production, thereby prolonging an adverse effect on the overall economy.

#### ***The Environment Surrounding Corporate Profits and Business Fixed Investment***

Corporate profits, after decreasing substantially in the first half of fiscal 2011 due to the effects of the disaster, are expected to increase again in the second half of fiscal 2011 and thereafter (Chart 40). Looking at the outlook for firms' current profits in the September *Tankan*, profits at manufacturers, for both large and small firms, are likely to diminish by double digits on a year-on-year basis in the first half of fiscal 2011 due to effects of the disaster, but will turn to a double-digit increase in the second half. Taking the fiscal year as a whole, a slight decrease in profits is expected for large manufacturers and a slight increase for small manufacturers. As for nonmanufacturing firms, large firms are expected to see reduced profits throughout fiscal 2011, reflecting a significant decline in the profits of electric power companies due to rising generation costs. For small nonmanufacturing firms, profits are expected to decrease in the first half of fiscal 2011 but will likely turn to an increase in the second half, resulting in a rise for the fiscal year on the whole. After entering fiscal 2012, corporate profits are likely to remain on an increasing trend, as the mechanism by which the strength in exports and production feeds through into income and spending will be at work in a situation where overseas economies start growing at a faster pace again, and as reconstruction-related demand continues. Meanwhile, while the yen appreciation deteriorates the profitability of exports, it also supports corporate profits by restraining import costs.

In this situation, business fixed investment is expected to increase moderately. Having been cut back significantly after the Lehman shock, business fixed investment -- particularly projects involving maintenance and repairs -- is more likely to increase during the projection period (Chart 41). In addition, there will be disaster-related investments such as repair and reconstruction of disaster-stricken facilities, and construction projects related to the strengthening of earthquake-resistant and business-continuity systems. According to business fixed investment plans in the September *Tankan*, those of large manufacturing firms are expected to register a double-digit increase, especially in the assembly and processing machinery industry -- for example, electrical machinery (Chart 42). Business fixed investment plans of small manufacturing firms are likely to mark a considerable increase as well, taking into account the revision patterns of the *Tankan* over past years. On the other hand, in nonmanufacturing firms, the year-on-year rate of increase in business fixed investment plans for large firms has declined somewhat, mainly reflecting postponements in construction projects due to the effects of the disaster. Fixed investment plans for small firms are somewhat weaker than the average year despite upward revisions. Looking at overall figures on a GDP basis (all industries and firms including financial institutions, including software and excluding land), fixed investment plans for fiscal 2011 are relatively firm, with a year-on-year increase of 4.5 percent. Toward the end of the projection period, however, growth in business fixed investment is likely to slow somewhat if the overall expected growth rate for firms does not exceed 1 percent (Chart 43).

### ***The Employment and Income Situation and Households' Spending Behavior***

Looking back on the employment situation after the earthquake, a large-scale adjustment in employment was avoided because (1) many firms had viewed the disaster as a temporary shock and (2) measures such as the easing of eligibility conditions for employment adjustment subsidies were implemented in a swift manner. As a result, an adjustment for a decline in labor demand induced by fluctuations in economic activity was made mainly through a reduction in working hours (Chart 44 [1]). Recently, the pick-up in economic activity, particularly in production, has created an increasing trend in working hours again, especially in manufacturing, and job offers have been on an improving trend, including

those in disaster areas.

Regarding wages, effects of the disaster are visible mainly in bonus payments, especially among small firms (Chart 44 [2]). Summer bonuses in large firms turned out to exceed the prior-year level for this summer, partly due to the lagged effects of corporate performance during the previous fiscal year. On the other hand, summer bonuses in small firms, which are affected by more recent corporate performance, were relatively weak due to effects of the disaster.

As for the outlook, the pick-up in economic activity is likely to have a positive effect on the employment and income situation. However, the increasing trend in employment and wages is expected to become evident only in fiscal 2012 and thereafter. This is because a significant rise in employment is unlikely in fiscal 2011, given the ample room left for firms to make use of surplus workers, and cutbacks on bonus payments in the private sector will be a drag on the wage front (Chart 44 [3]). Meanwhile, the labor income share (compensation of employees/nominal GDP) is likely to rise temporarily in the first half of fiscal 2011, fall in the second half, and then decline moderately thereafter (Chart 44 [4]). The large fluctuation expected during fiscal 2011 is caused by the volatility in the nominal GDP (the denominator) due to the disaster.

Labor productivity per worker declined temporarily in reflection of the dampening of economic activity caused by effects of the disaster, falling below the trend observed from 1995-2005 by about 5 percent (Chart 45 [1]). While these developments led an increasing number of firms to regard their workforces as excessive, firms are now retaining a number of workers partly due to an increase in payment of employment adjustment subsidies given the easing of eligibility conditions (Chart 45 [2]). Consequently, the pace of improvement in the aggregate supply and demand balance, reflected in indicators such as the number of employees and unemployment rate, is likely to remain moderate even with a rise in the level of economic activity (Chart 45 [3]). In the second half of fiscal 2011, however, as automobile production is accelerated to make up for the disruption caused by the earthquake, and as reconstruction-related demand in disaster areas is materialized, labor demand might increase rapidly, thereby leading to a rise in wages due to a mismatch in the supply and

demand of labor depending on the region and industry.

In the employment and income environment described above, private consumption will likely remain firm, although no notable increase should be expected. Large-scale retail store sales have remained firm, albeit with some weather-induced fluctuations, after recovering to the pre-quake levels. Sales of household electrical appliances fell back sharply from the rush in demand, mainly for flat-panel televisions and hard disk recorders, prior to the ending of the analog TV broadcasting, and weakness will likely persist for the time being. Auto sales have been on a recovery trend and will continue to see solid demand for the time being because of an accumulated backlog of orders and anticipated rush in demand before the planned ending of tax reduction measures for energy-efficient cars at the end of March 2012. Services consumption, such as outlays for travel, is also expected to recover gradually with some lag following goods consumption. In the meantime, private consumption in disaster areas will be supported by the continued replacement demand for those goods damaged as a result of the disaster. Indicators for consumer confidence have been recovering after a plunge immediately following the earthquake (Chart 46 [1]). According to functional decomposition analysis, the recovery is attributed to (1) waning uncertainty about the employment and income environment, as indicated by lower stock price volatility; and (2) a decline in the residual factor in the equation (Chart 46 [2]). The residual factor should include the effects of voluntary restraint after the disaster, constraints from infrastructure such as railways and electricity, and concern about the risk of aftershocks and subsequent developments at the nuclear power plant. Uneasiness caused by these problems has gradually receded, resulting in the improvement of indicators for sentiment, and this tendency is likely to continue for the time being. There is a possibility, however, that households' concern about the employment and income environment will heighten, and that the improvement in sentiment will pause due to increasing volatility and significant price declines in the stock market, reflecting concern about the global economic downturn.

Looking at the relatively long-term picture, the propensity to consume has been on a downward trend. Since fiscal 2008, real disposable income has increased as income transfers from the government to households such as cash benefits and child allowances

have continued while consumption has been relatively restrained (Chart 47 [1] and [2]). The trend in the propensity to consume seems to partly reflect concern over a future increase in the fiscal burden against the background of a looming fiscal deficit, and such concern is likely to remain to some extent during the projection period. For this reason, although the rising share of the elderly will push up the propensity to consume, its pace is likely to be quite moderate.

As for the outlook based on the above considerations, private consumption, including that for services, is expected to gradually become more firm as economic activity continues to recover and the negative impact on sentiment of the aftershocks and the nuclear power plant problem recedes. At the same time, the pace of recovery is likely to remain modest throughout the projection period because improvement in the employment and income environment will be gradual and households will likely continue to have a vague concern about the future of the fiscal situation and social security system.

Housing investment has recently shown clear signs of picking up with the resolution of supply-side constraints caused by the earthquake. As for the outlook, housing investment will likely continue to increase moderately. While reconstruction of damaged houses will proceed in disaster areas, housing investment in other areas will also continue to be solid, backed by improvement in the employment and income environment as well as low interest rates.

### ***The Environment Surrounding Prices***

International commodity prices had continued to rise until April and, after experiencing a relatively large decline in May, had remained almost unchanged toward September (Chart 48). They have declined again since September against the background of concerns about a global economic slowdown. Regarding the outlook, they are expected to remain broadly unchanged for the time being because the global economy will continue to slow. It is expected that international commodity prices will gradually increase as the global economy exits from the slowdown phase and its rate of growth starts picking up.

The year-on-year growth rates of domestic energy and food prices are expected to increase

through the second half of fiscal 2011, reflecting the significant rise in international commodity prices observed toward spring earlier this year. After temporarily experiencing a decline partly reflecting the effect of the yen appreciation, these growth rates are expected to increase again, albeit gradually, in the second half of fiscal 2012 and beyond in line with a gradual rise in international commodity prices.

As for the expected rate of inflation in the medium to long term, it has not changed notably even after the significant downward revision of the year-on-year rate of increase in the CPI due to the base-year change (Chart 49).

After briefly experiencing the widening of a negative gap following the earthquake, the output gap has been improving as economic activity recovers (Chart 50 [1]). As for the outlook, the output gap is expected to continue improving gradually as Japan's economy continues to grow at a pace surpassing the potential growth rate.<sup>20</sup>

In the relatively long run, there is a broad positive correlation between the CPI and the output gap. In practice, the year-on-year rate of decline in the CPI for all items less food and energy has been gradually slowing so far against a backdrop of gradual improvement in the aggregate supply and demand balance (Chart 51 [1]). A similar relationship can be found for the chain-weighted CPI, which is less affected by the base-year change (Chart 51 [2]). As for the outlook, with the continued improvement in the aggregate supply and demand balance on the assumption that medium- to long-term inflation expectations remain stable at around 1 percent, the year-on-year rate of change in the CPI for all items less fresh food will gradually rise to around 0.5 percent toward the latter half of the projection period.

In the past, the year-on-year rate of change in the chain-weighted CPI tended to become

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<sup>20</sup> Japan's potential growth rate had temporarily dropped to around 0 percent partly due to a decline in the growth rate of capital stock reflecting the economic plunge after the Lehman shock (Chart 50 [2]). Since then, the rate has been gradually increasing as a result of a recovery in the growth of capital stock and labor input against the background of gradual economic recovery. Japan's potential growth rate during the projection period is estimated to be "around 0.5 percent" based on a standard production function approach. However, estimates of the potential growth rate are subject to a considerable margin of error as they greatly depend on the specific methodology employed and could change as more data for the relevant period become available.



lower than that in the fixed-weighted CPI and the gap became larger as more time passed from the base year, which is currently 2010. Based on this observation, the year-on-year rate of change in the chain-weighted CPI around 2013 may be slightly lower than the forecast in this Outlook Report, which is based on the fixed-weighted CPI.<sup>21</sup>

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<sup>21</sup> The gap between the year-on-year rate of change in the chain-weighted CPI and that in the fixed-weighted CPI could change in reflection of yearly changes in the weight of consumption items.

### **(Box 1) Power Saving This Summer**

The demand for electric power this past summer declined significantly compared to the year before, both in terms of peak demand and total consumption (Chart 52 [1] and [2]). This is partly attributable to relatively low temperatures, in contrast to a record-breaking hot summer last year, but power-saving efforts by businesses and households also made a significant contribution.

Looking at a breakdown of electricity consumption by electric power company, the amount of consumption in July-August was 14 percent below the prior-year level in the service areas of Tokyo Electric Power Company (TEPCO) and Tohoku Electric Power Company, where the restriction of electricity use was imposed by law (Chart 8 [1]). Looking at the data by type, the amount of consumption was lower than the prior-year level for every type including industrial power (mainly for factories), commercial power (mainly for offices), and lighting (mainly for households) (Chart 8 [2]). Judging from these data, the electricity power-saving campaign was successfully accomplished owing to the efforts of businesses and households mainly in the service areas of TEPCO and Tohoku Electric Power Company.<sup>22</sup>

Power-saving efforts this past summer basically worked via two means: a reduction in peak demand achieved by leveling out the electricity consumption pattern within a week (the leveling out effect) and a reduction in total electricity consumption.

With regard to the leveling-out effect, since July, when the automobile and other industries started their work shifts, the data confirm a decline in electricity consumption on Thursdays and Fridays and a rise in the relative share of consumption at the weekends (Chart 8 [3]). Looking at the intraday electricity consumption pattern, demand leveled out such that daytime consumption was significantly restrained while the share of consumption during the rest of the day increased (Chart 8 [4]).

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<sup>22</sup> According to the press release by TEPCO on September 26 on the effect of power saving in its service area, the power supply and demand level during high temperatures in August was lower by about 9,000 to 10,000 MW compared to the term with almost the same temperature last year.

As for the reduction in total electricity consumption, when actual consumption related to industrial power, commercial power, and lighting was respectively compared to the estimated levels extrapolated from a regression analysis using economic activity indexes and temperature as independent variables, it became evident that downward deviations from the estimated levels had increased in the period leading up to summer (Chart 52 [3], [4], and [5]). This implies that, with the same temperatures, the same level of economic activity could be achieved with less electricity consumption than in the past; in other words, power saving enhanced efficiency.

### **(Box 2) Economic Developments in Disaster Areas**

The Great East Japan Earthquake on March 11 brought devastating damage, especially to the Pacific coastal areas of the Tohoku region. In addition to enormous human casualties and damage to social capital and private facilities,<sup>23</sup> accidents at nuclear power plants caused a power shortage. Other than these supply-side constraints, the demand factors acted to dampen the economy as business and household sentiment significantly deteriorated reflecting concerns over the risks of aftershocks and an uncertain outlook. An economic downturn occurred on a nationwide scale due to the effects of supply-chain disruptions, but was particularly significant in disaster areas immediately after the quake.

With respect to recent economic developments in disaster areas, private economic activity has been recovering with an easing of supply-side constraints, an increase in both public and private expenditures for reconstruction, and an improvement in sentiment. More specifically, as for public investment, the value of public works contracted in disaster areas has seen a high growth rate reflecting progress in construction of temporary housing and restoration of social infrastructure such as roads (Chart 53 [1]). The number of housing starts has clearly begun to increase in recent months (Chart 53 [2]).<sup>24</sup> Against this background, the number of job offers has been rising in disaster areas, especially from the construction sector, and sentiment related to household activities has improved in a relatively significant manner, partly due to a rebound from the quake-induced plunge (Chart 53 [3] and [4]). In this environment, private consumption in disaster areas showed a relatively strong increase -- more significant than that observed on a national scale -- partly due to replacement of demand for those goods lost or damaged as a result of the disaster (Chart 53 [5] and [6]).

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<sup>23</sup> According to the estimate by the Cabinet Office published on June 24, 2011, damage to infrastructure amounted to about 16.9 trillion yen. The breakdown of the damage was as follows: about 10.4 trillion yen for buildings such as houses, stores, and factories; about 1.3 trillion yen for lifeline facilities such as electricity, water, and gas; about 2.2 trillion yen for social capital such as ports, airports, and roads; about 1.9 trillion yen for damage related to primary industries such as farmland; and about 1.1 trillion yen for other damages.

<sup>24</sup> In the most severely stricken prefectures -- namely, Miyagi, Iwate, and Fukushima -- the number of totally or partially destroyed houses amounted to approximately 270 thousand, about one-tenth of the housing stock in the three prefectures.

As for the outlook, expenditures related to public investment for full-scale reconstruction are expected to increase based on the "Basic Guidelines for Reconstruction in response to the Great East Japan Earthquake" published in July. Private expenditures are also expected to increase for the infrastructure investment, repair, and rebuilding of offices, production facilities, and houses, as well as earthquake-proofing.

### **(Box 3) Base-Year Change for the CPI**

The base year for the consumer price index (CPI) was changed in August 2011 as a regular exercise conducted every five years. In this process, several changes were made including (1) recompiling the total index by resetting the index level of individual items with the 2010 level at 100, (2) updating the weight of individual items taking into account changes in consumption patterns, (3) revising the composition of the consumption basket to reflect recent changes in consumption patterns, and (4) changing model formulas to compile indexes for individual items.<sup>25</sup>

As a result of the base-year change, the average year-on-year rate of change in the CPI (all items less fresh food) for January-July 2011 was revised downward by 0.6 percentage point (Chart 54 [1]). Looking at individual items, televisions were a significant contributor to the downward revision. Other consumer durable goods, such as personal computers, also contributed to the downward revision (Chart 54 [2]).<sup>26</sup> Among a variety of changes made, the effect of resetting the index level to the base year was mainly responsible for the downward revision (Chart 54 [3]).

Looking at past base-year changes, the degree of downward revision had been small until 2000, but has increased since 2000 reflecting an increase in the weight of those goods with significant price changes, such as IT-related goods (Chart 54 [4]). The downward revision in 2000 was mainly attributable to the adoption of personal computers as new items. The downward revision in 2005 was attributable largely to changes in model formulas to compile the price index for mobile phone fees and partially to a resetting of the index levels for consumer durable goods.

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<sup>25</sup> Tariff structures for services such as airfares, electricity charges, and mobile phone fees are not uniform. It is difficult to identify individual services and the price levels of similar services differ significantly by provider. Therefore, the price indexes for such services are compiled based not only on the price data obtained from the Retail Price Survey but also on model estimations derived from various business statistics.

<sup>26</sup> The degree of price declines in consumer durable goods, such as personal computers, in Japan's CPI is larger than that in the CPI of the United States and major European countries.

As such, in recent years, the year-on-year rate of change in the CPI has been revised downward in a discontinuous manner at each occasion of the base-year change. In this regard, it is beneficial to check the chain-weighted index and the trimmed mean, both of which are less affected by the base-year change.<sup>27,28</sup> Compared to the fixed-weighted index, the base-year change in the chain-weighted index is less likely to cause a significant gap because weights are updated and index levels are reset every year. On the other hand, the trimmed mean is compiled by excluding items that show an extreme rise or decline and taking the weighted average of the year-on-year rates of price changes of the remaining items. In the process of excluding the items, the items causing a gap at the time of the base-year change tend to be excluded. In addition, taking the average of year-on-year rates of change instead of the index level of each item has the same effect of resetting the index level for the previous year to 100. In practice, these indexes have been improving moderately since around the end of 2009 without experiencing any significant gap at the time of the base-year change (Chart 11 [2]).

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<sup>27</sup> Compared to the fixed-weighted index, the base-year change every five years in the chain-weighted index is less likely to cause a significant gap in the year-on-year rates of change. However, the chain-weighted index sometimes experiences a certain degree of a gap when the base year is changed every year, as seen at the time of the base-year change in 2006, when changes in the composition of the basket and model formulas for compiling indexes resulted in a certain downward revision.

<sup>28</sup> For more on the trimmed mean, see Box 1 in the April 2010 issue of the Outlook Report.

#### **(Box 4) Indicators for Assessing the Financial Environment**

Monetary policy starts with a change in policy rates, and its effect is transmitted to the economy as a whole through financial and capital markets. Therefore, in order to assess how accommodative a financial environment is, proper overall judgment of a variety of factors is necessary, including not only the level of policy rates but also other various elements such as the real interest rate, risk premium, and activities of financial institutions.

##### **1. Real Interest Rate**

Together with the nominal interest rate, the real interest rate, which is derived by extracting the expected rate of inflation from the nominal interest rate, is one important determinant of an economic entity's decision on expenditure. As it is difficult to measure the expected rate of inflation accurately, the real interest rate is often calculated by extracting the actual inflation rate from the nominal interest rate for the sake of convenience.

Comparing the real policy rates calculated using the aforementioned convenient method with potential growth rates -- proxy variables representing the level of real interest rate that are neither tight nor accommodative -- the stimulative effects from low interest rates have been partly constrained in Japan (Chart 55). On the other hand, the levels of real policy rates are significantly accommodative in the United States and Europe.

A more difficult issue to address is the choice of inflation expectation indicators to calculate the real interest rates with relatively long terms, which firms and households are actually presented with when making investment and borrowing. One method is to use long-term inflation expectation data in the surveys targeted at economists (Chart 49). For example, based on the Consensus Forecasts of October 2011, the expected rates of inflation (6 to 10 years ahead) are 1.0 percent in Japan, 2.2 percent in the United States, and 1.8 percent in Germany. Extracting these figures from 10-year government bond interest rates, long-term real interest rates in these three countries have been around 0 percent in the recent period.



It should be noted, however, that the levels of real interest rates both for the short term and long term are subject to a margin of error as they greatly depend on various assumptions, including inflation expectations.

## **2. Risk Premium**

Private economic entities do not receive funding at policy rates or risk-free rates, such as the rates of government bonds. The actual funding rates facing private economic entities are the sum of risk-free rates and the risk premium. In the case of CP and corporate bonds, the risk premium is often referred to as the credit spread because they are basically determined by the default rate of issuers and the expected rate of recovery assessed by investors.

Even when policy rates are unchanged, credit spreads may widen significantly, resulting in tighter financial environment, in response to instability in financial and capital markets or increasing risk aversion by investors. A comparison of credit spreads in corporate bond markets shows that those in Japan have been stable at low levels while those in the United States and Europe have widened rapidly (Chart 15 [2]). It should be noted that, as experienced after the Lehman shock, credit spreads tend to rise sharply when tensions heighten significantly in financial markets.

## **3. Activities of Financial Institutions**

The funding structures of private economic entities differ significantly by country. In Japan, given the relatively high weight of bank borrowing, activities of financial institutions take on significant importance in assessment of the financial environment.

An assessment of the easiness or tightness of the bank lending market should be made based on the ultimate impact on activities of firms, and consequently on economic activity. Therefore, this requires quantitative data on subjective information regarding how firms see the availability of funds from banks. In this regard, indicators for the lending attitude of financial institutions as perceived by firms in surveys including the *Tankan* are useful for measuring the easiness of financial conditions (Chart 25 [1]). Lending attitudes as

perceived by the suppliers of funds could also be checked by using surveys targeted at financial institutions. Another merit of surveys targeting financial institutions is that the existence of similar surveys in major countries enables an international comparison. Such an international comparison for the recent period shows that financial institutions have maintained a positive stance on lending in Japan, while European institutions have become more cautious (Chart 26).

Indicators related to the financing conditions for banks, including money market developments, are also important in assessing the financial environment because they have a significant impact on lending rates. For example, even when overnight interest rates are at low levels, banks' lending attitudes could become more cautious, resulting in a tighter financial environment, if term interest rates rise reflecting strains in the money market. Comparing credit spreads in interbank term transactions, a significant rise has been observed in the euro and a modest rise was recently experienced in the U.S. dollar, while an extremely low and stable situation has continued in the yen (Chart 15 [1]).

#### **4. Summary**

In taking a mechanistic look at the levels of real policy rates using a convenient method, it is somewhat higher in Japan in comparison to that in the United States and Europe. For the purpose of assessing the degree of monetary easing, however, it is more important to look at the funding environment and funding costs for firms, which are ultimately also affected by two factors: how the policy rate will affect longer-term interest rates and to what extent the risk premium is contained. Based on such an assessment framework, the financial environment in Japan has continued to ease while that in the United States and Europe has become less accommodative recently. The Bank has purchased a wide range of financial assets using the Asset Purchase Program under the comprehensive monetary easing framework. The aim of such purchase is to nurture an accommodative financial environment from the aforementioned two perspectives, namely, by encouraging a decline in longer-term market interest rates and a narrowing of risk premiums. In addition, provision of ample liquidity under the comprehensive monetary easing framework is intended to bring about a positive effect on the availability in corporate financing by fostering a sense of security in the funding environment for financial institutions.

Although it is often referred to, money stock -- a quantitative indicator -- is not an appropriate indicator for assessing the easiness of a financial environment. The level of money stock as a ratio to nominal GDP has been higher in Japan than in the United States and Europe (Chart 56).

#### **(Box 5) Aging and Medium- to Long-Term Growth Rates**

In the 2000s, real GDP growth rates in Japan have stayed at a level below those in other advanced economies (Chart 57 [1]). As for growth in labor productivity -- that is, real GDP growth rate per worker -- Japan is in the top subgroup among advanced economies. Therefore, it is a decline in workers that has restrained the growth rate of the national economy as a whole.

The recent drop in the number of workers reflects a decline in the working-age population caused by a rapid aging of society (Chart 57 [2]). After reaching a peak in around 1995, the working-age population started to decline but its pace accelerated in the 2000s. If the working-age population were to fall further, economic growth rates could be constrained from the supply side through a decline in labor supply. Moreover, on the demand front, if firms failed to capture the consumption needs of the elderly, a decline in the working-age population would contribute to the shrinkage of domestic markets.

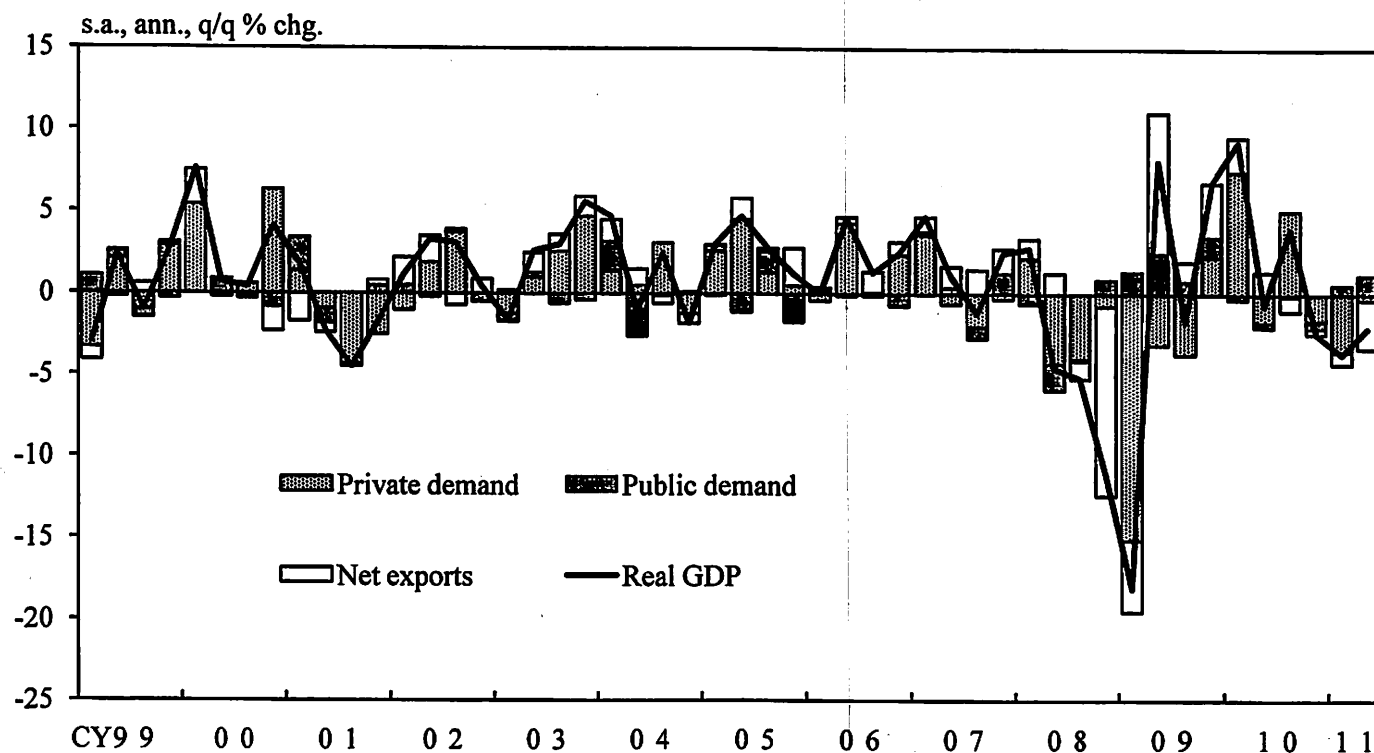
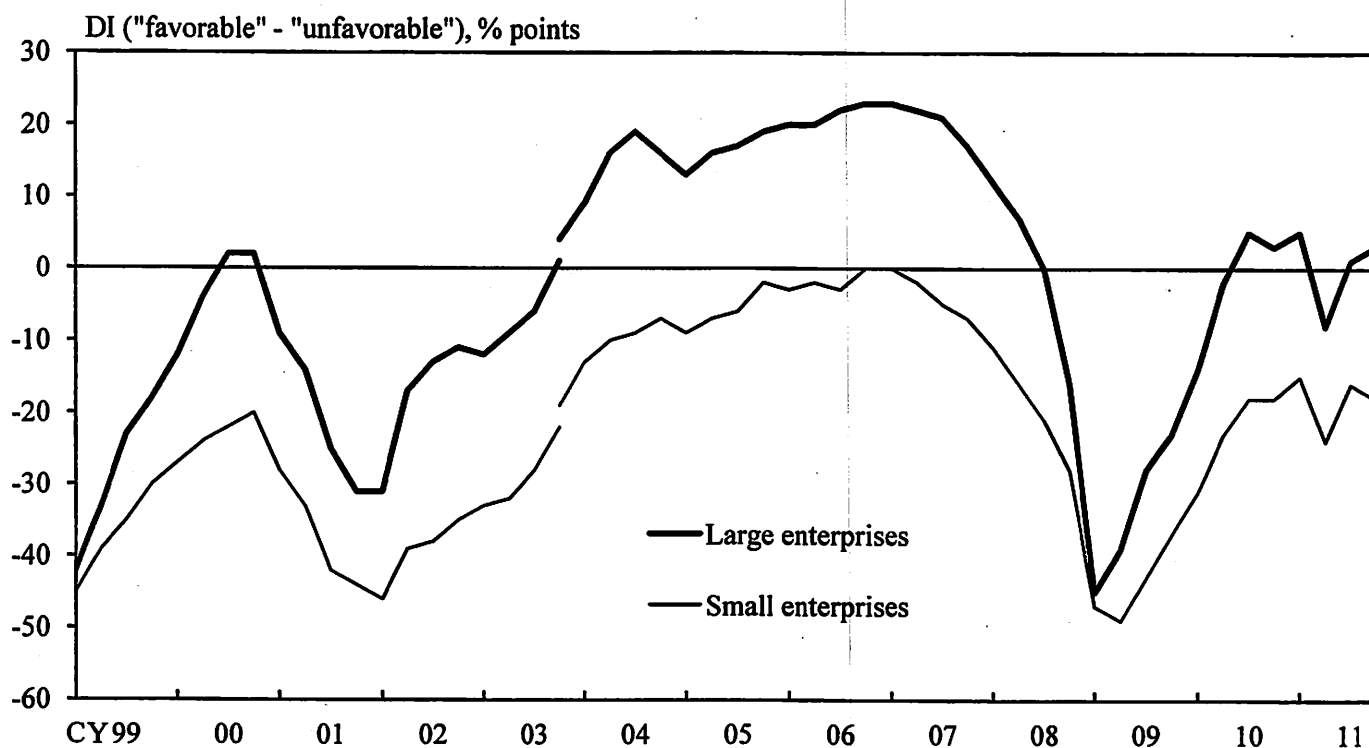
The demographic outlook for Japan shows that the pace of decline in the working-age population is projected to be faster than that in total population, reflecting a further aging of society. As a result, the growth rate of GDP per capita is expected to be lower than that of GDP per worker by about 0.5 percentage point. Put differently, in order to maintain the growth rate of GDP per capita in a country experiencing a rapid aging of society, like Japan, it must be compensated for by raising the growth rate of GDP per worker, in other words that of labor productivity, and/or by reducing the gap between the rates of decline in total population and the number of workers, through an increase in the labor participation rate (Chart 57 [3]). In order to raise labor productivity faster, it is important to capture global demand more aggressively and strengthen the capacity to cultivate potential demand in domestic markets; for example, in the area of medical and nursing care services. In addition, for the purpose of raising the labor participation rate, it is crucial to develop the environment required to encourage the entry of females and the elderly into the labor market.

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## Real GDP and Business Conditions

## (1) Real GDP

(2) Business Conditions<sup>1,2</sup>

Notes: 1. Figures are based on the "Tankan," all industries.

Figures for 2011/Q4 are the forecasts in the September 2011 survey.

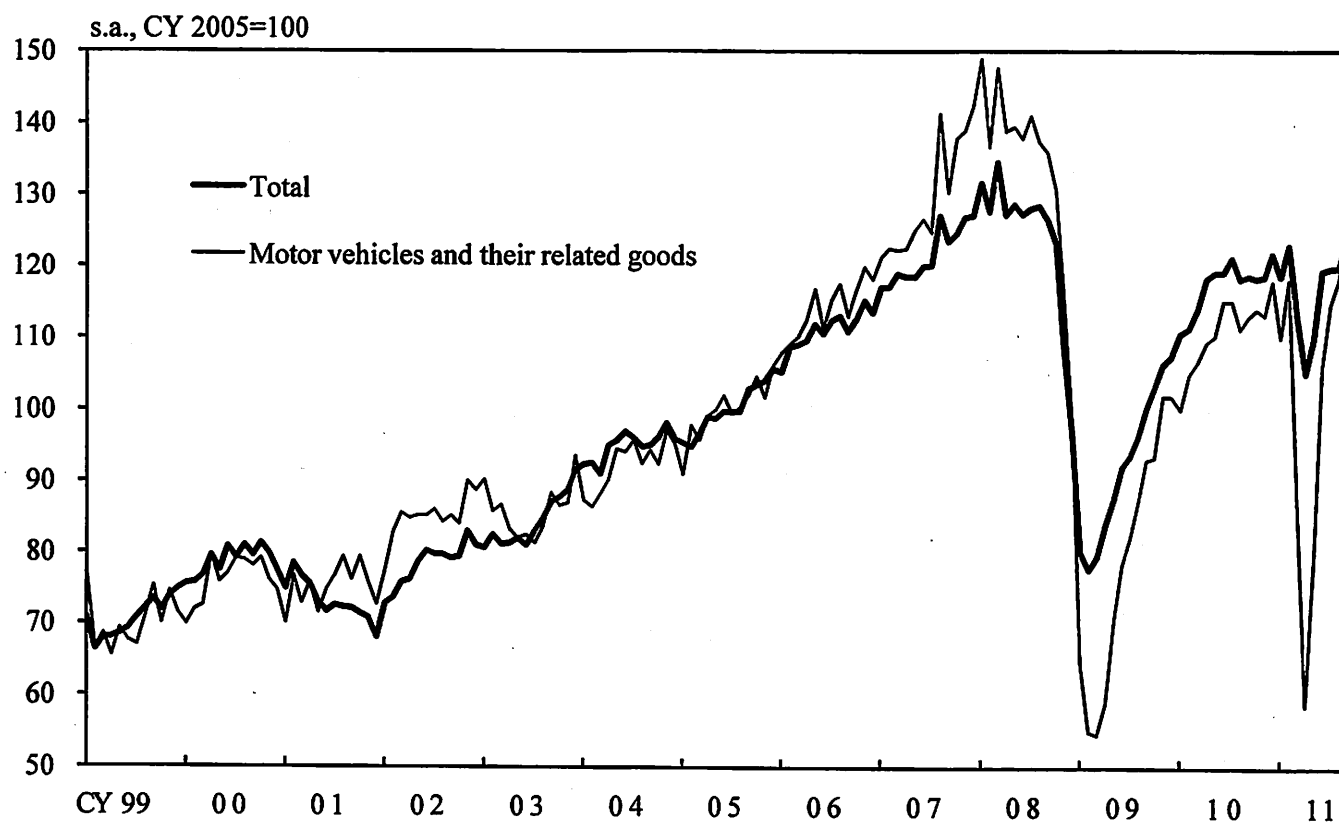
2. The "Tankan" has been revised from the March 2004 survey. Figures up to the December 2003 survey are based on the previous data sets. Figures from the December 2003 survey are on the new basis.

Sources: Cabinet Office, "National Accounts";

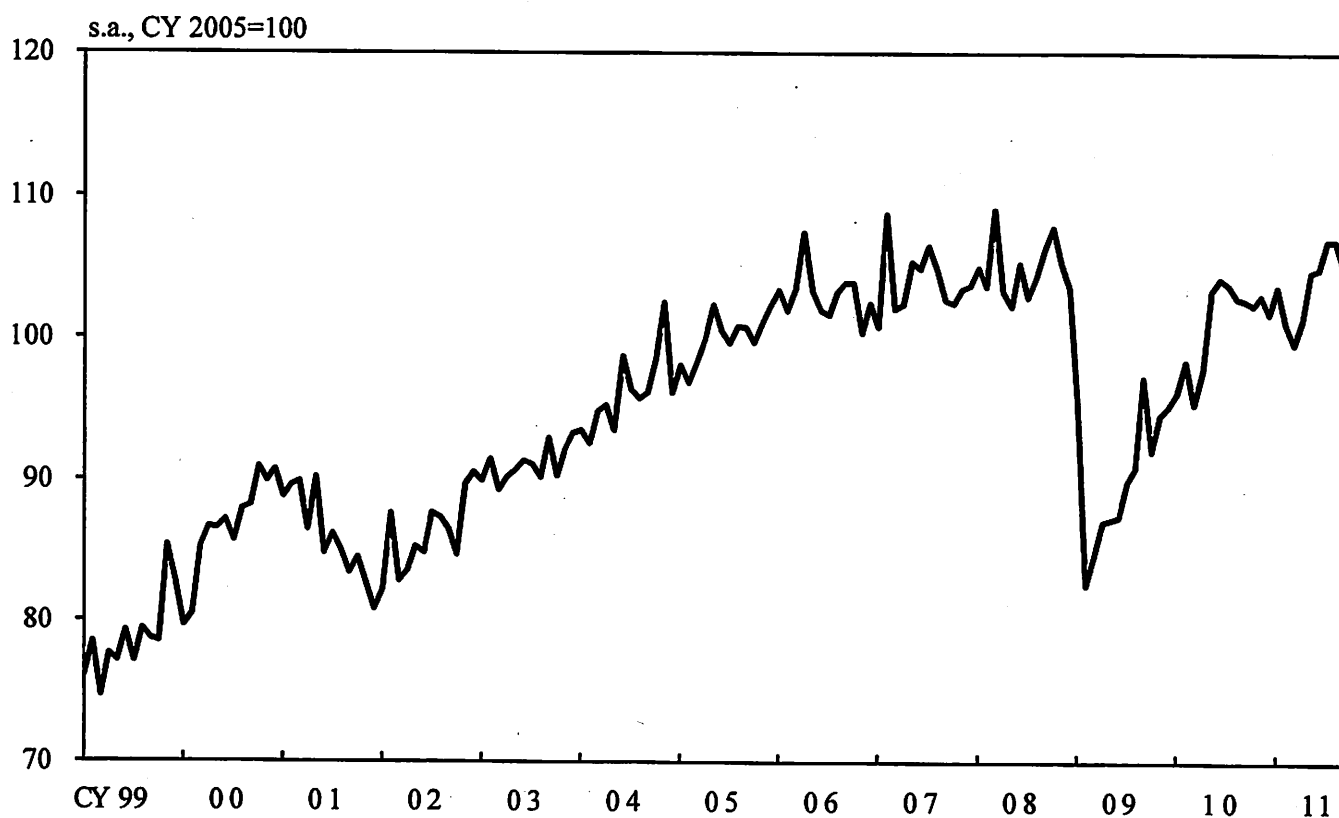
Bank of Japan, "Tankan, Short-Term Economic Survey of Enterprises in Japan."

## Exports and Imports

## (1) Real Exports



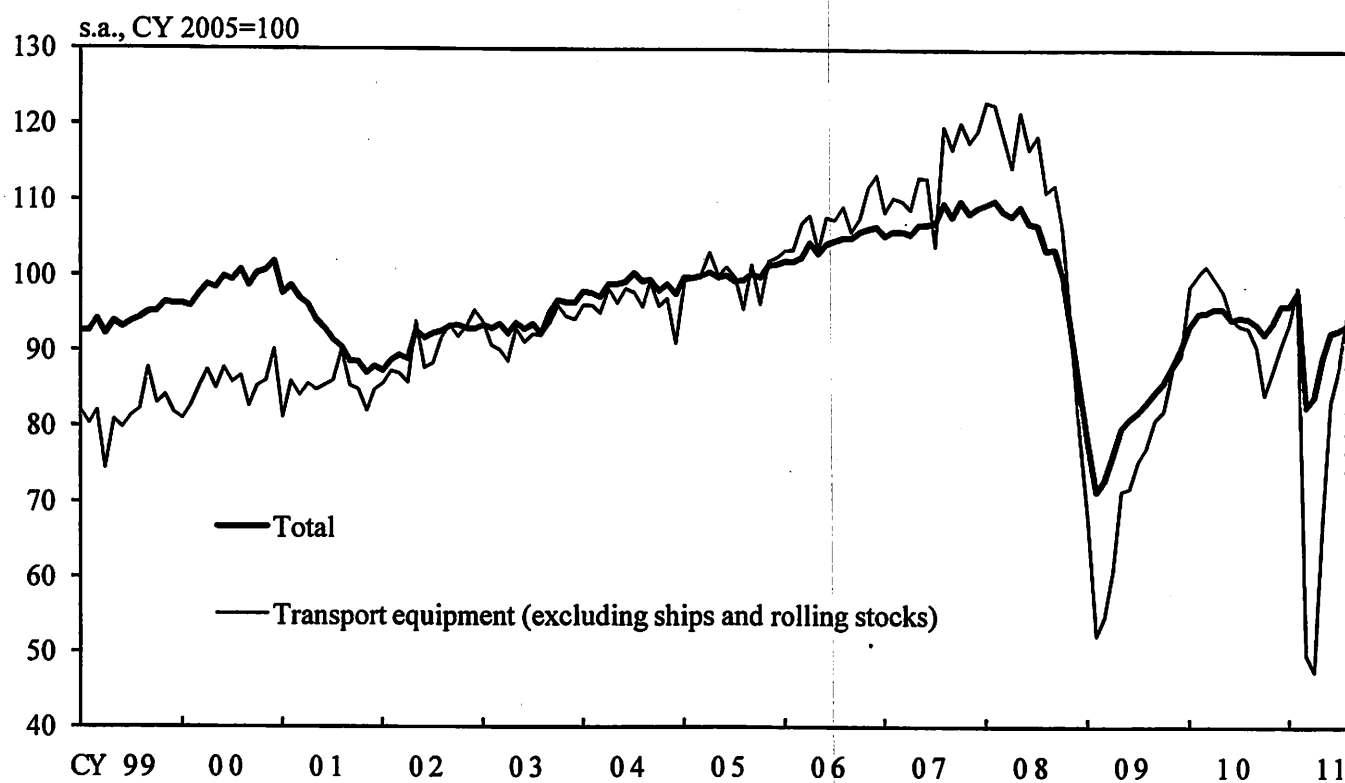
## (2) Real Imports



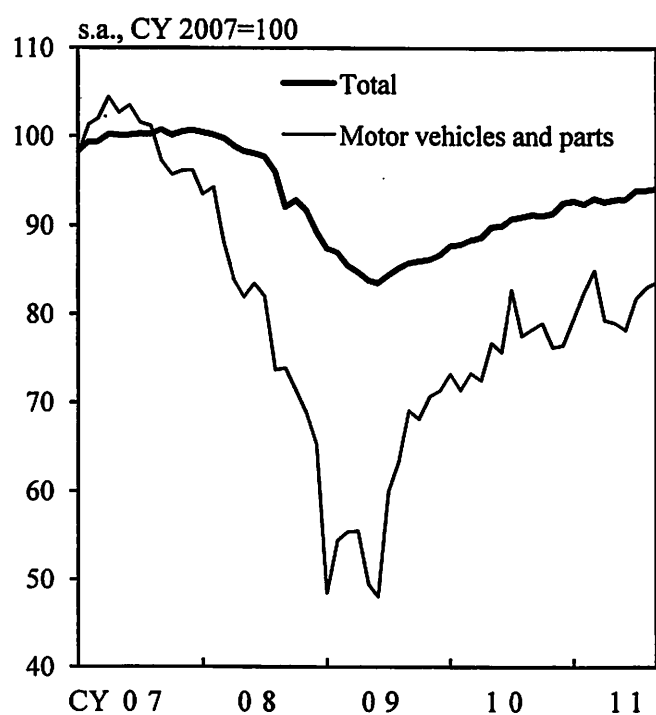
Sources: Ministry of Finance, "Trade Statistics"; Bank of Japan, "Corporate Goods Price Index."

## Production

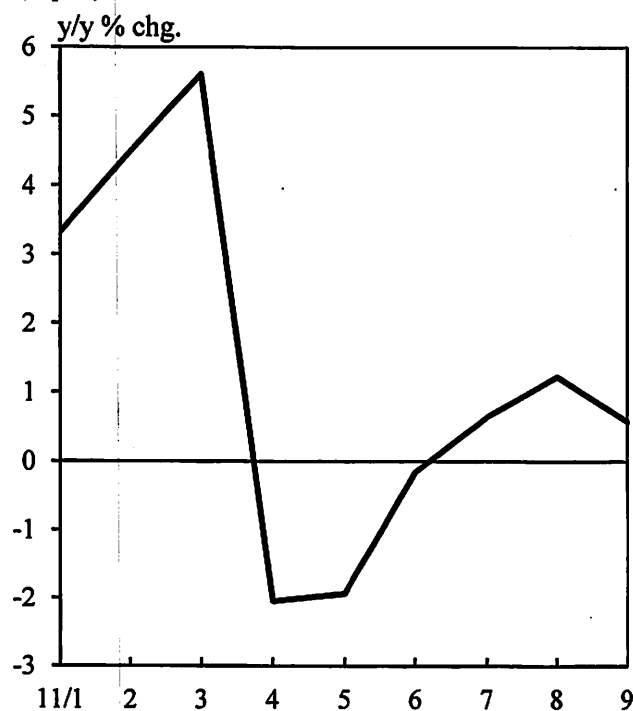
## (1) Industrial Production in Japan



## (2) Industrial Production in the United States



## (3) Economists' Forecasts of Industrial Production (Japan)



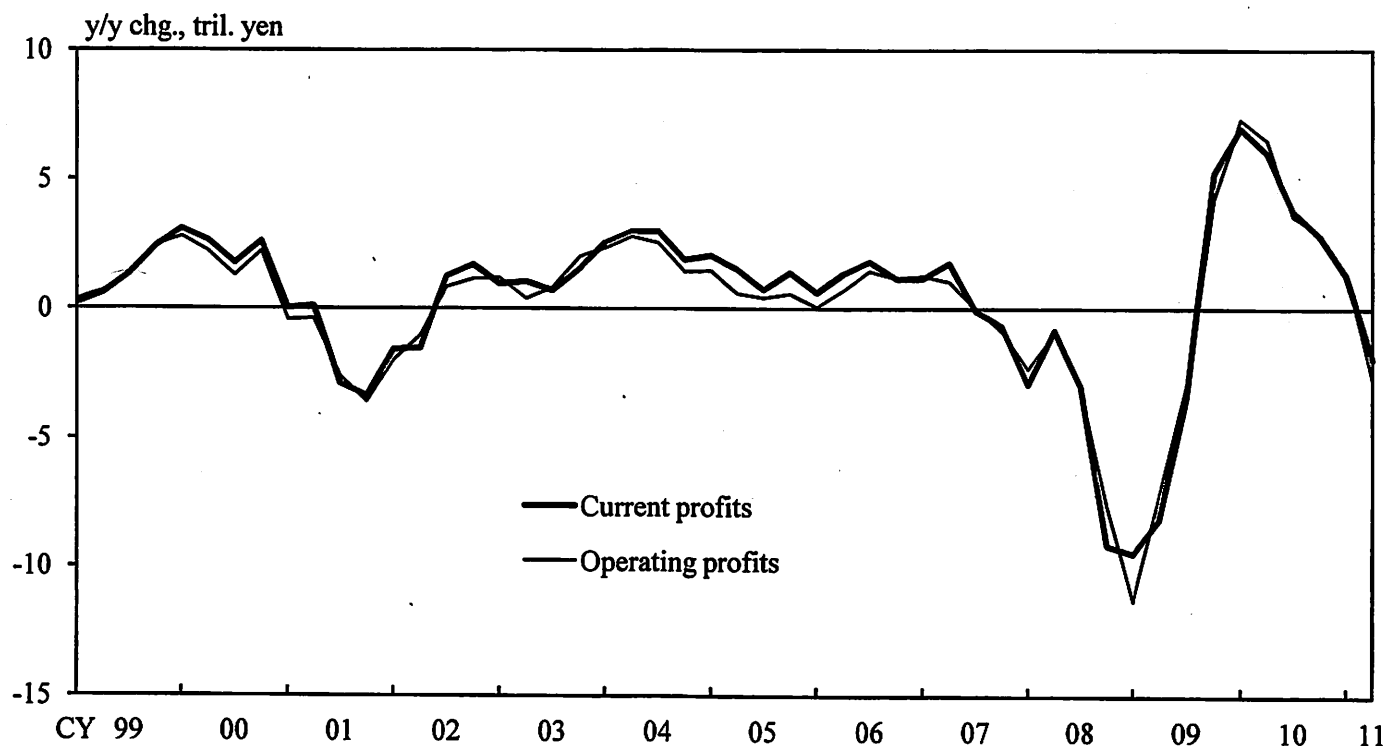
Note: The figure is the forecast of fiscal 2011 in each monthly survey.

Sources: Ministry of Economy, Trade and Industry, "Indices of Industrial Production";  
Economic Planning Association, "ESP Forecast"; FRB, "Industrial Production and Capacity Utilization."



## Corporate Profits and Fixed Investment

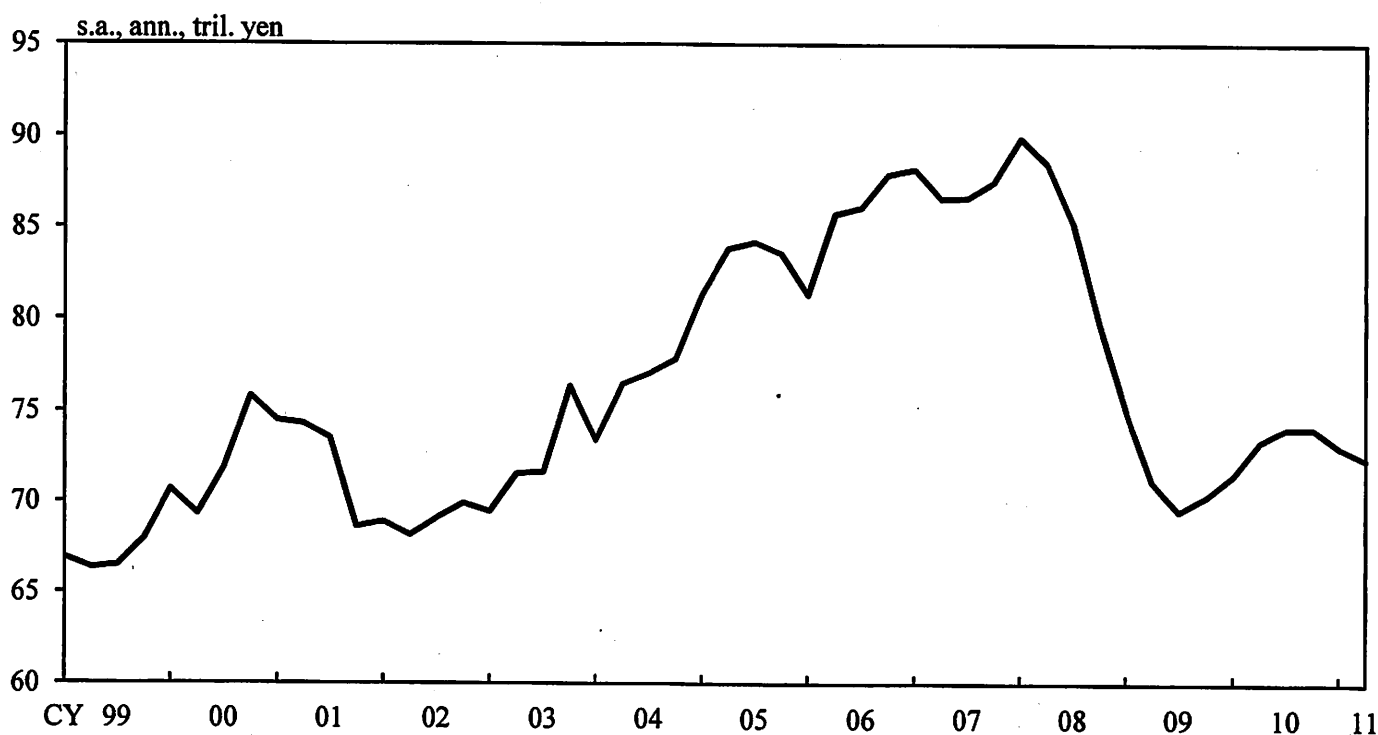
### (1) Corporate Profits



Notes: 1. Based on all-size enterprises and all industries.

2. Taken from the "Financial Statements Statistics of Corporations by Industry, Quarterly." Figures exclude finance and insurance.

### (2) Fixed Investment

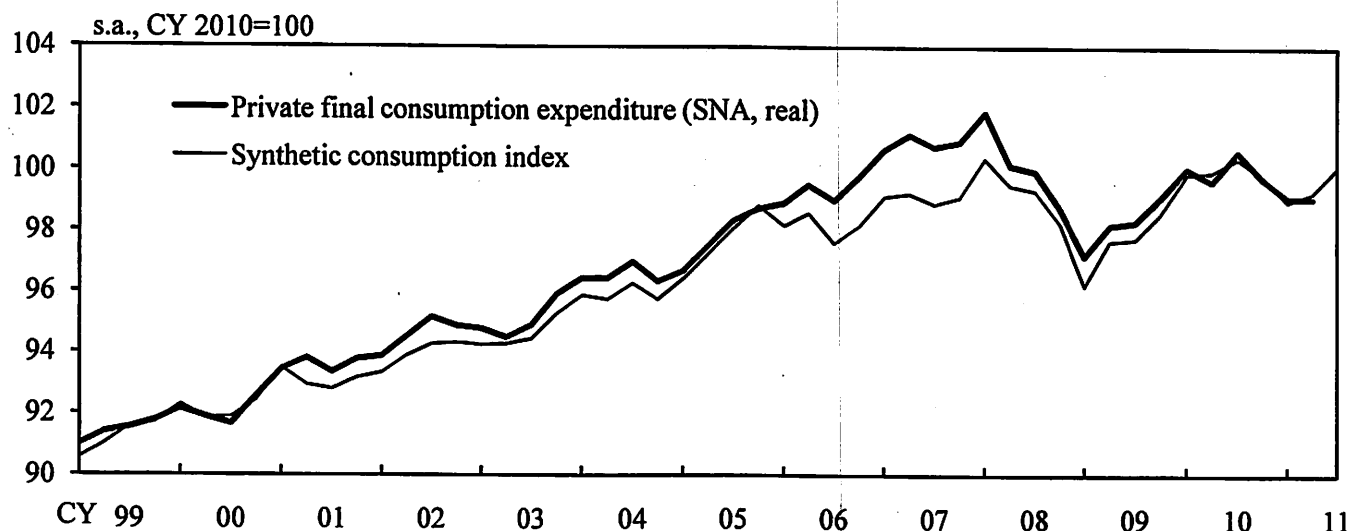


Note: Taken from "National Accounts." The figure is real private non-residential investment.

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

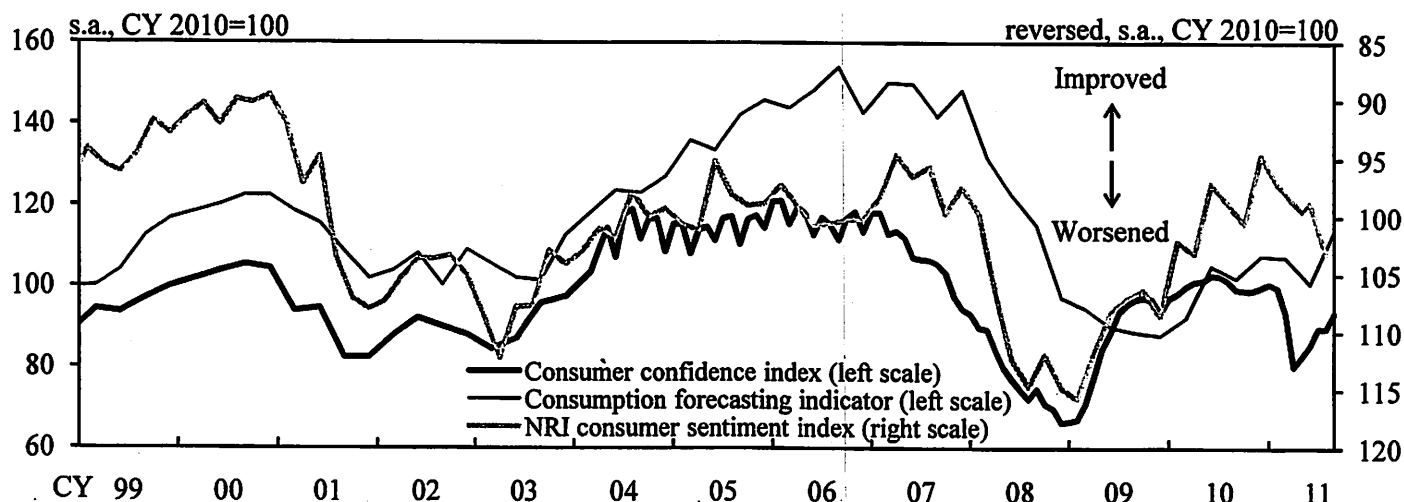
## Private Consumption

### (1) Private Final Consumption Expenditure and Synthetic Consumption Index



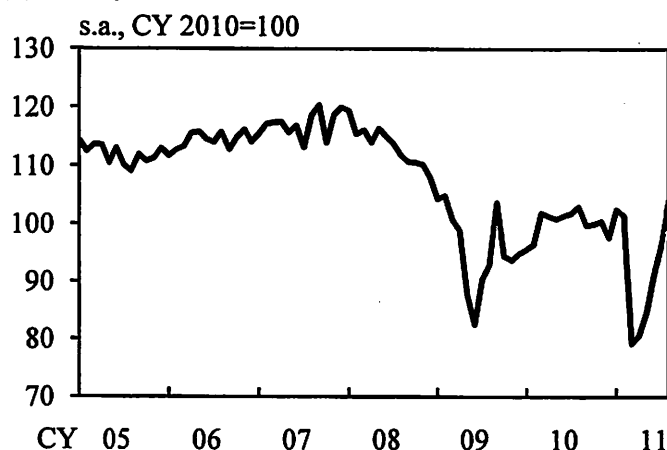
Note: The figure of synthetic consumption index for 2011/Q3 is the July-August average in quarterly amount.

### (2) Consumer Confidence

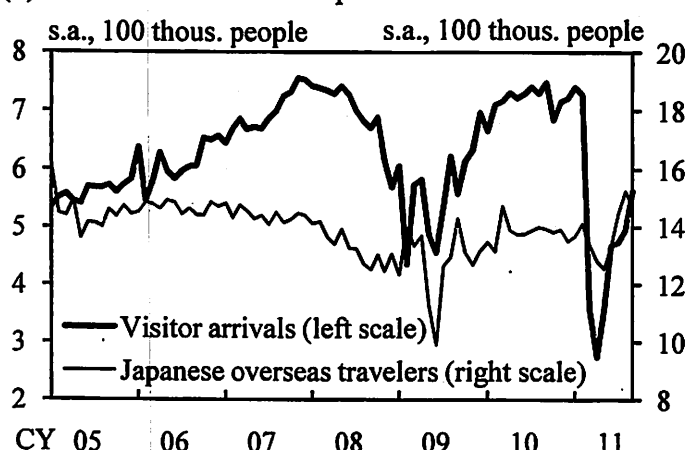


Note: Figures are plotted for each surveyed month, and the data for the intervening months are linearly interpolated.

### (3) Outlays for Travel



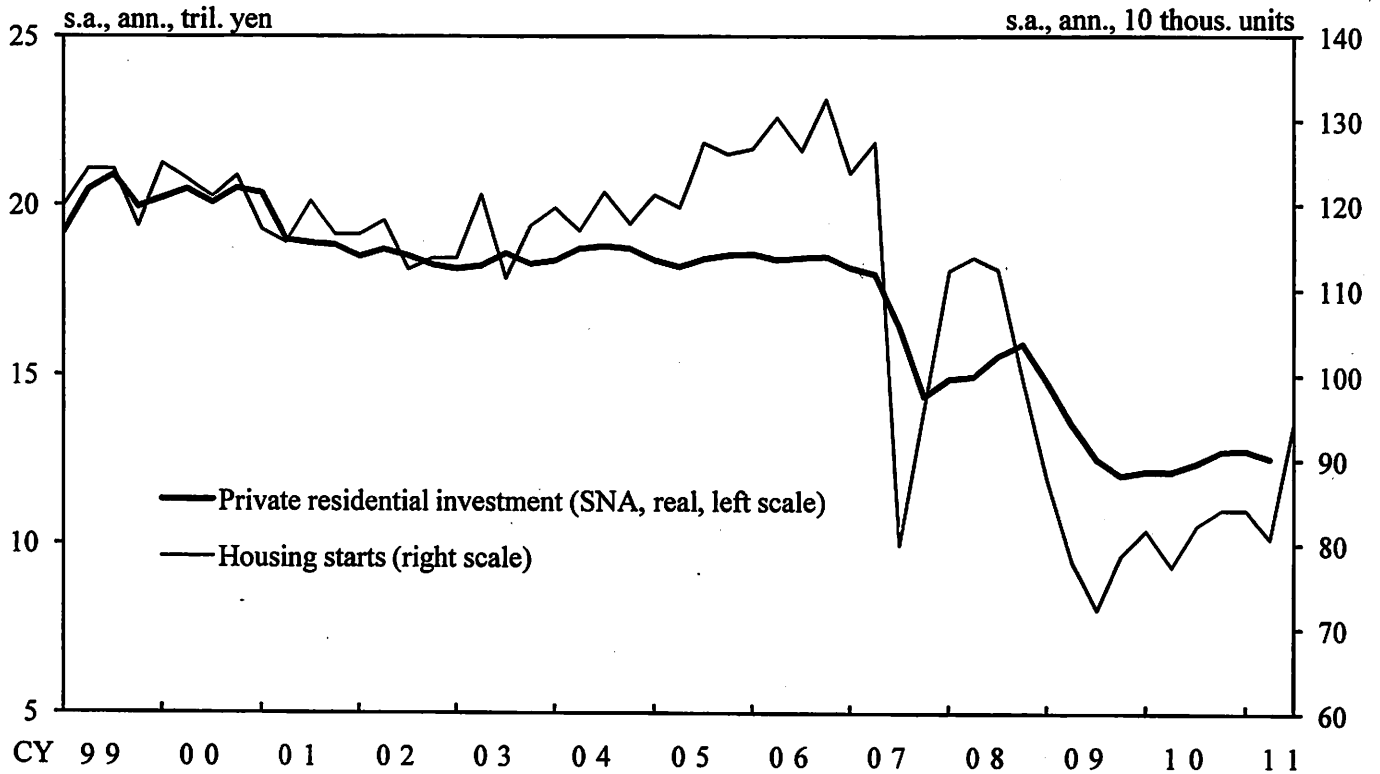
### (4) Visitors from and to Japan



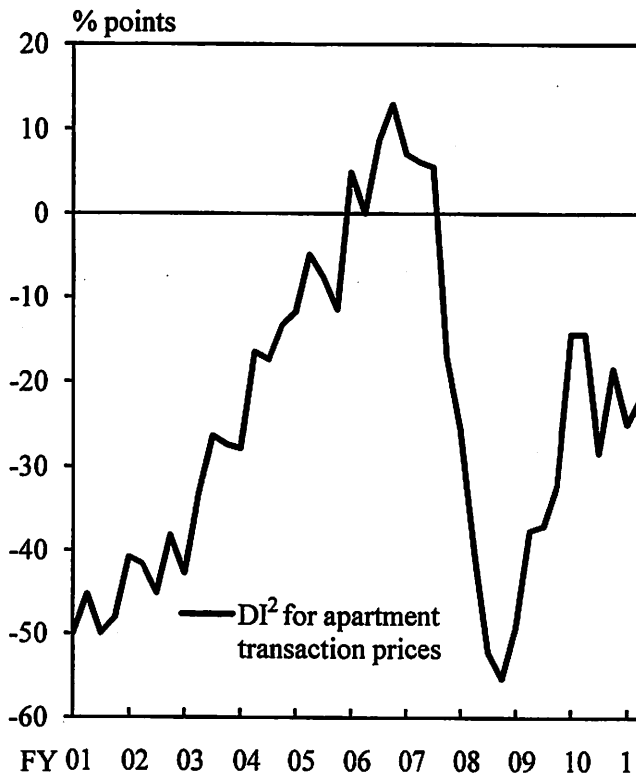
Sources: Cabinet Office, "National Accounts," "Consumer Confidence Survey,"  
"Synthetic Consumption Index"; Nikkei Inc., "Consumption Forecasting Indicator";  
Nippon Research Institute (NRI), "Consumer Sentiment Survey";  
Japan Tourism Agency, "Major Travel Agents' Revenue"; JAPAN NATIONAL TOURISM ORGANIZATION.

## Housing Investment

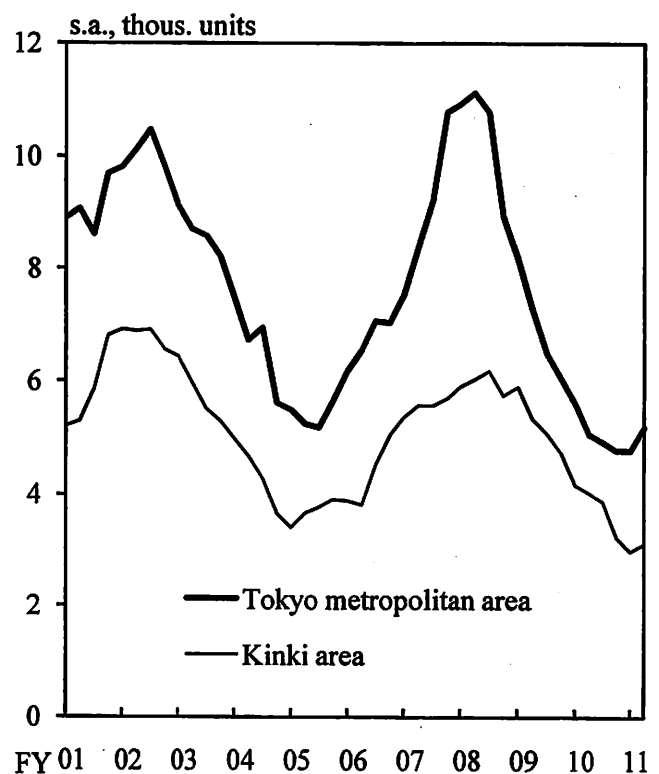
### (1) Housing Starts and Private Residential Investment<sup>1</sup>



### (2) Business Sentiment of Real Estate Industry



### (3) Apartment Stock

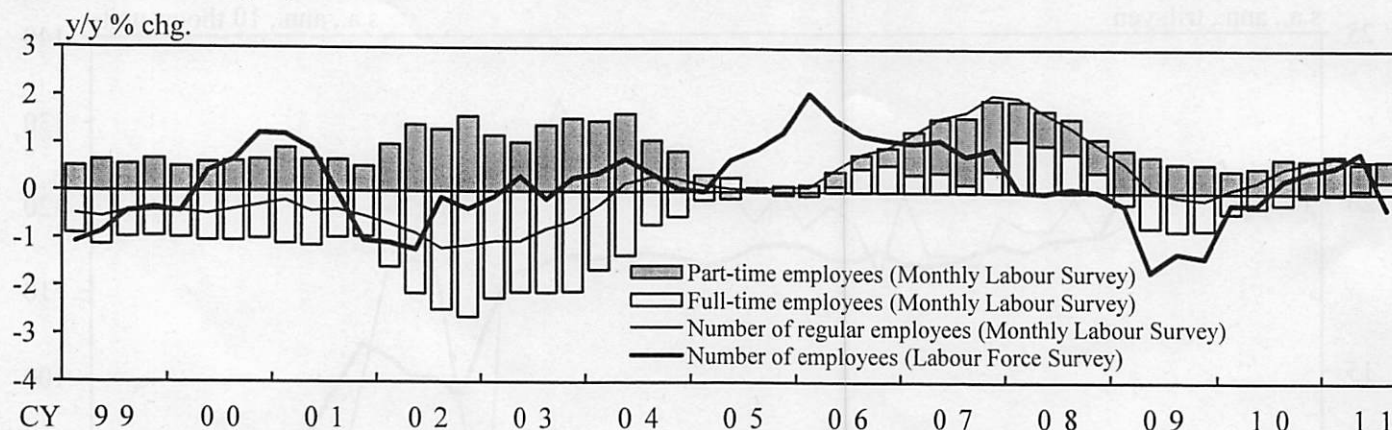
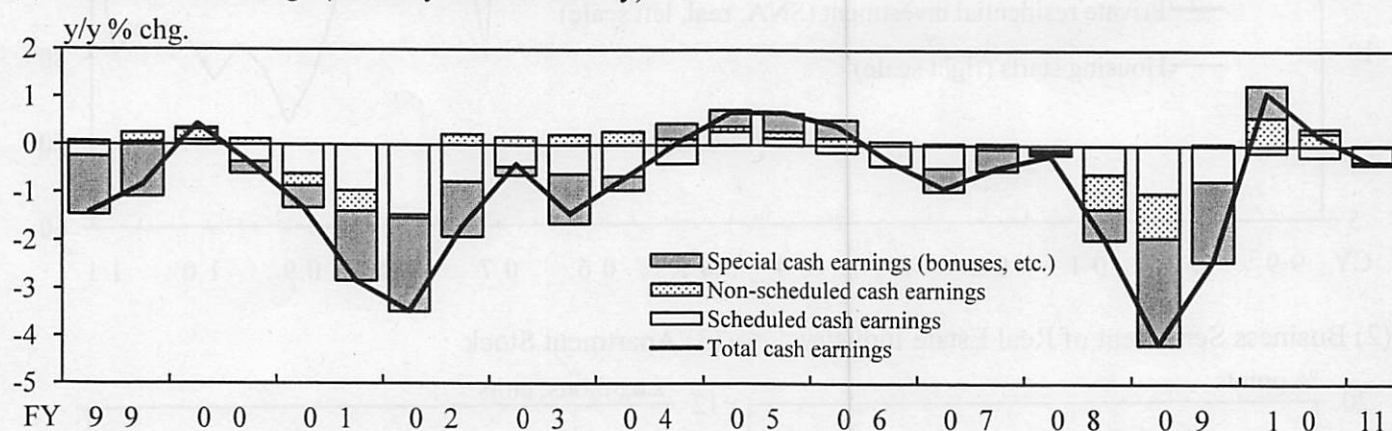
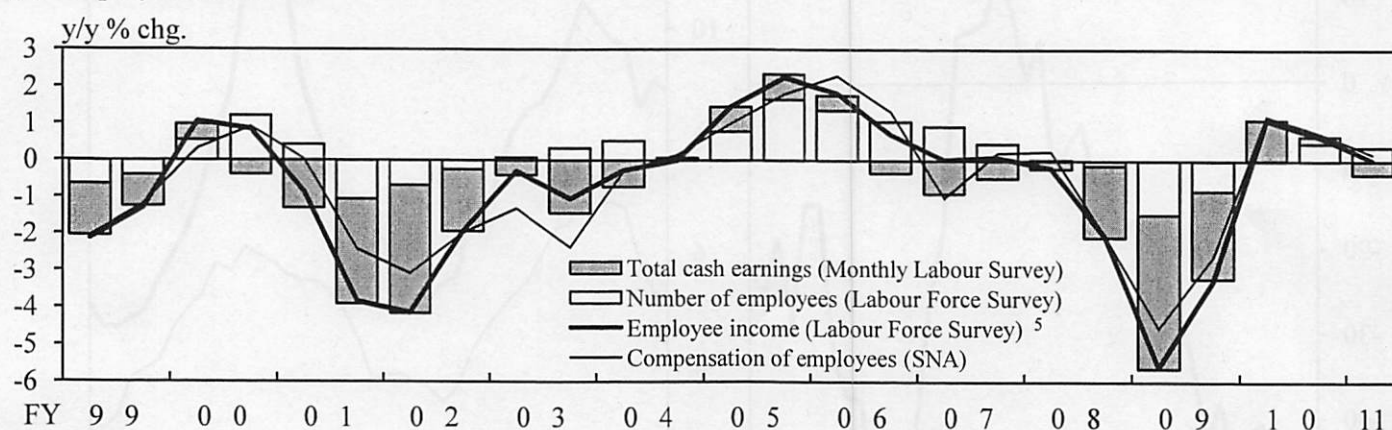


Notes: 1. Figures of housing starts for 2011/Q3 are July-August averages.

2.  $DI = [(\text{"rise"} \times 2 + \text{"slightly rise"}) - (\text{"slightly fall"} + \text{"fall"} \times 2)] / 2 / \text{total} \times 100$

Sources: Ministry of Land, Infrastructure, Transport and Tourism, "Statistics on Building Construction Starts"; Cabinet Office, "National Accounts"; The Land Institute of Japan; Real Estate Economic Institute Co., Ltd.

## Employee Income

(1) Number of Employees<sup>1,2,3</sup>(2) Total Cash Earnings (Monthly Labour Survey)<sup>1,4</sup>(3) Employee Income<sup>1,3,4</sup>

Notes: 1. Data from "Monthly Labour Survey" are for establishments with at least five employees.

2. Figures for 2011/Q3 are July-August averages.

3. Quarterly figures from 2011/Q1 and semiannual figures from the second half of fiscal 2010 for the "Labour Force Survey" are based on data that exclude Iwate, Miyagi, and Fukushima prefectures.

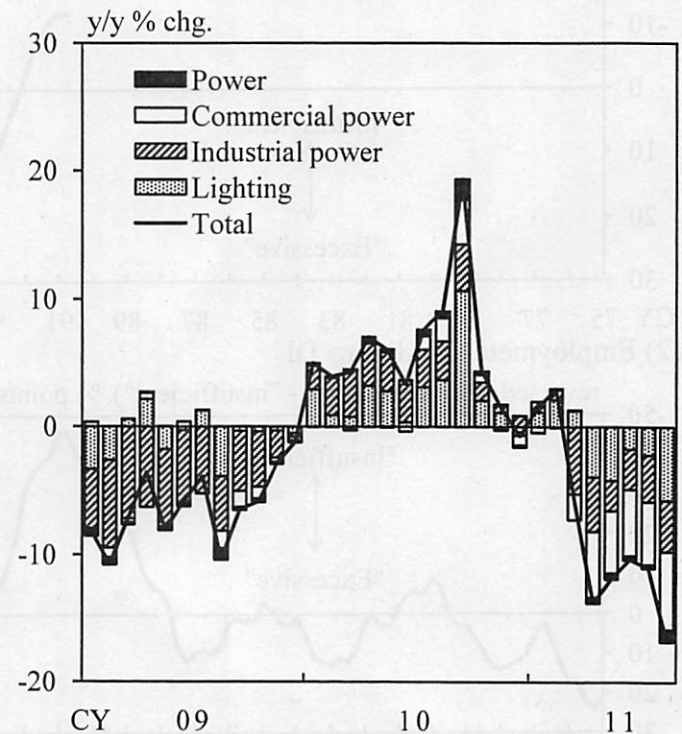
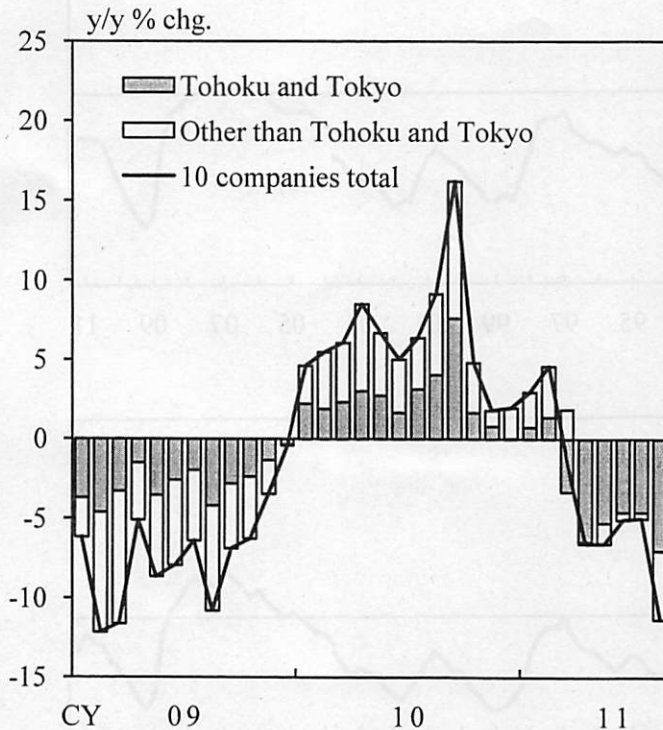
4. Figures for the first half of fiscal 2011 are the April-August averages, except for the figure for compensation of employees, which uses the 2011/Q2 figure.

5. Calculated as the number of employees (Labour Force Survey) multiplied by total cash earnings (Monthly Labour Survey).

Sources: Ministry of Internal Affairs and Communications, "Labour Force Survey";  
Ministry of Health, Labour and Welfare, "Monthly Labour Survey";  
Cabinet Office, "National Accounts."

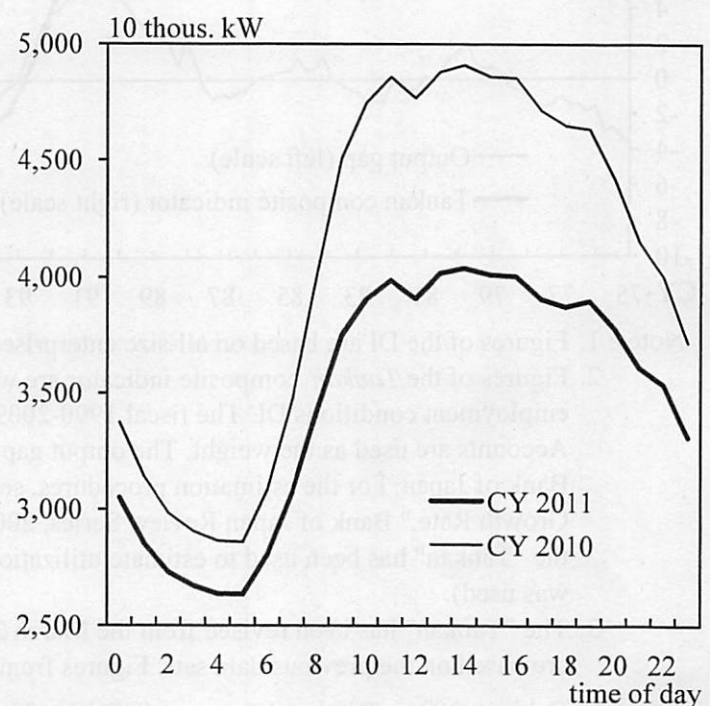
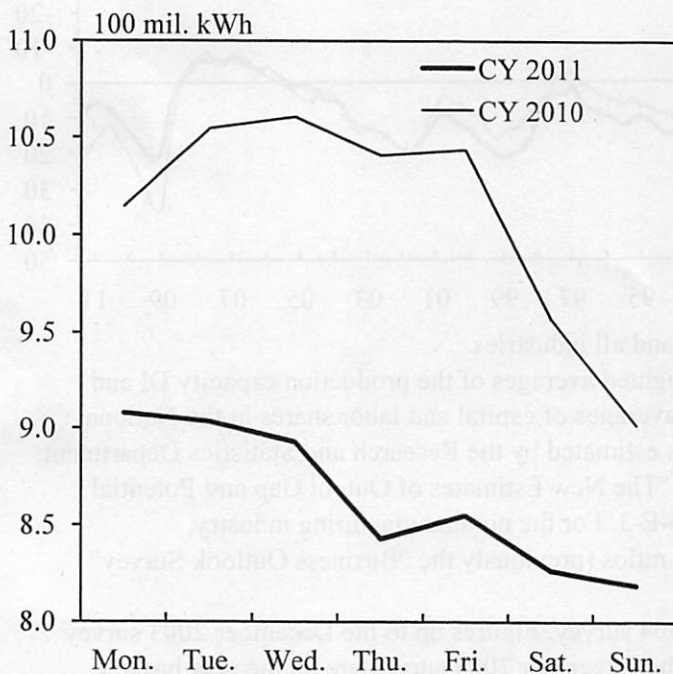
## Power Demand

- (1) Electric Power Consumption (10 Companies Total) (2) Electric Power Consumption in the Tokyo Electric Power Company (TEPCO) Service Area



Note: "Power" includes electric power consumption of small factories.

- (3) Electric Power Consumption per Day of the Week in the TEPCO Service Area (in July) (4) Intraday Peak-Demand in the TEPCO Service Area (in July)



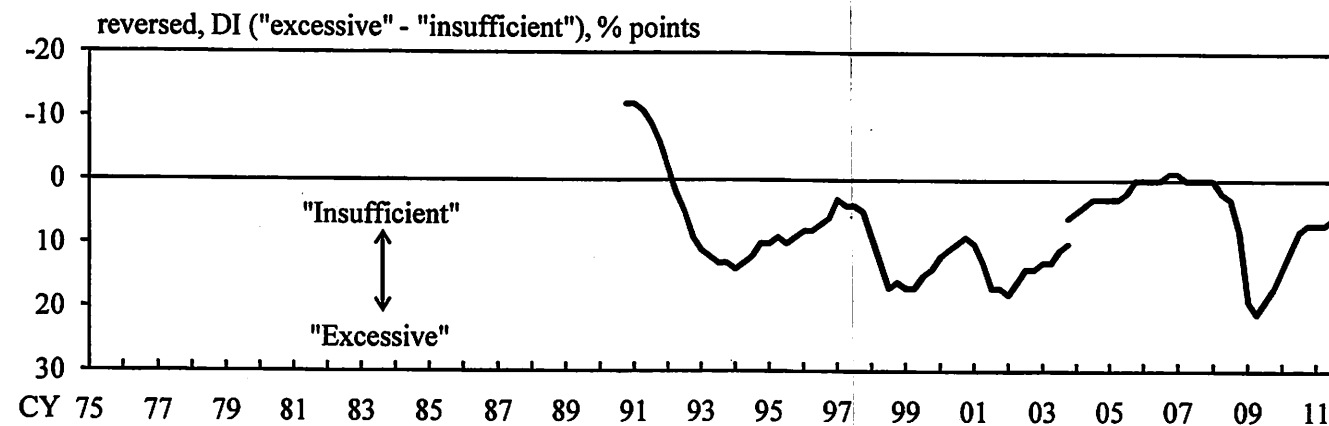
Note: Figures are the daily averages.

Note: Figures are the daily averages.

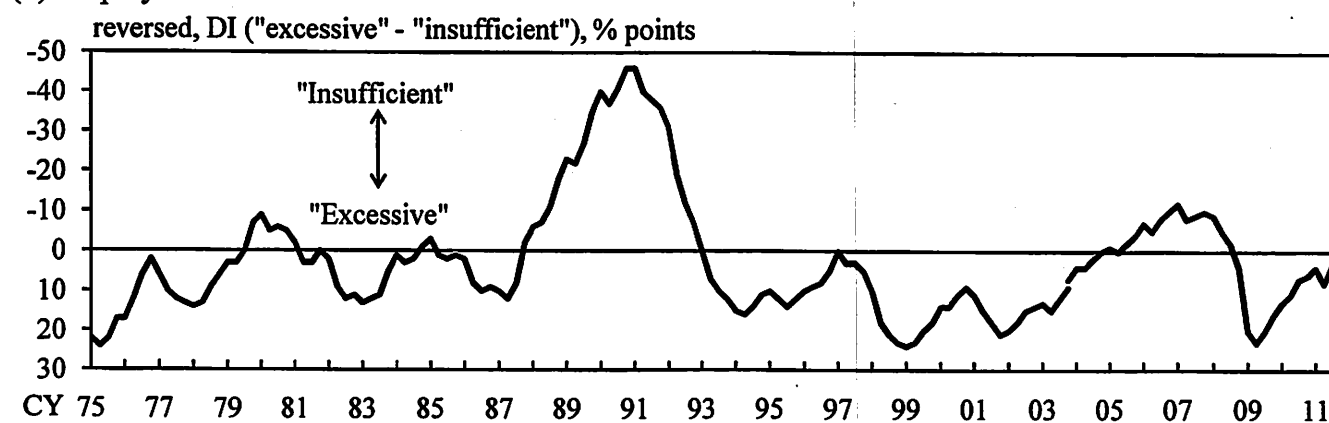
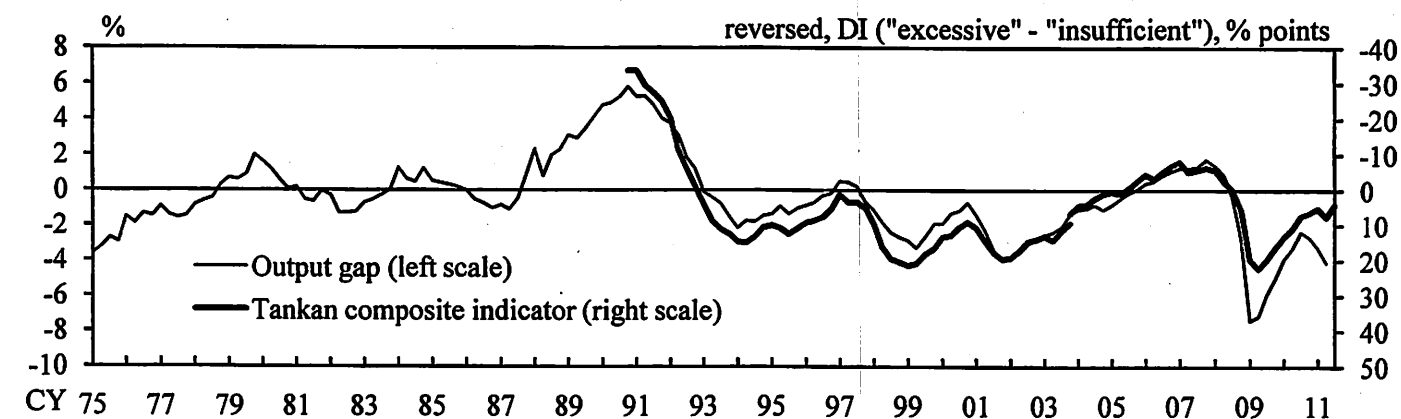
Sources: The Federation of Electric Power Companies of Japan, "Electricity Demand"; Electric Power System Council of Japan, "Power Demand"; Tokyo Electric Power Company.

## Resource Utilization

## (1) Production Capacity DI



## (2) Employment Conditions DI

(3) *Tankan* Composite Indicator and Output Gap

Notes: 1. Figures of the DI are based on all-size enterprises and all industries.

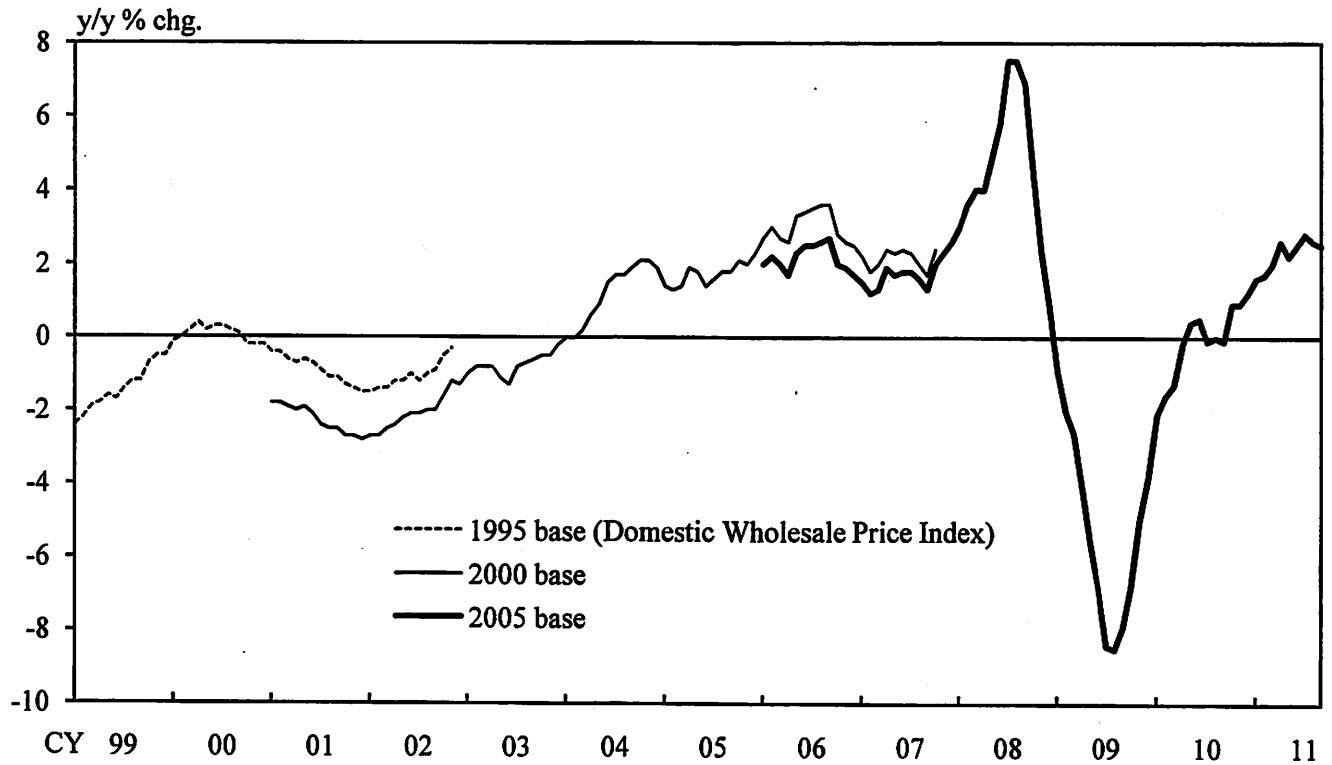
2. Figures of the *Tankan* composite indicator are weighted averages of the production capacity DI and employment conditions DI. The fiscal 1990-2009 averages of capital and labor shares in the National Accounts are used as the weight. The output gap is estimated by the Research and Statistics Department, Bank of Japan. For the estimation procedures, see "The New Estimates of Output Gap and Potential Growth Rate," Bank of Japan Review Series, 2006-E-3. For the nonmanufacturing industry, the "Tankan" has been used to estimate utilization ratios (previously the "Business Outlook Survey" was used).

3. The "Tankan" has been revised from the March 2004 survey. Figures up to the December 2003 survey are based on the previous data sets. Figures from the December 2003 survey are on the new basis.

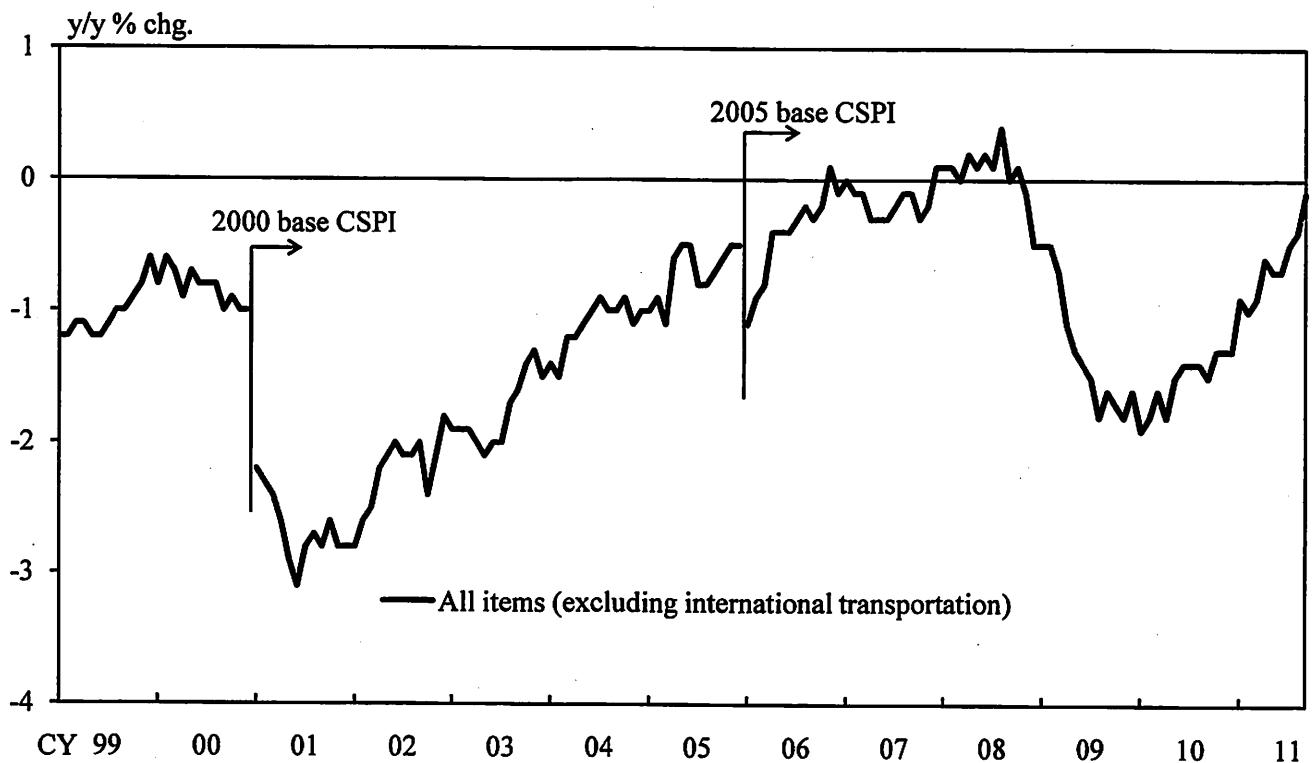
Sources: Cabinet Office, "National Accounts"; Bank of Japan, "*Tankan*, Short-Term Economic Survey of Enterprises in Japan"; Ministry of Internal Affairs and Communications, "Labour Force Survey"; Ministry of Health, Labour and Welfare, "Monthly Labour Survey," "Report on Employment Service"; Ministry of Economy, Trade and Industry, "Indices of Industrial Production," etc.

# Corporate Prices

## (1) Domestic Corporate Goods Price Index



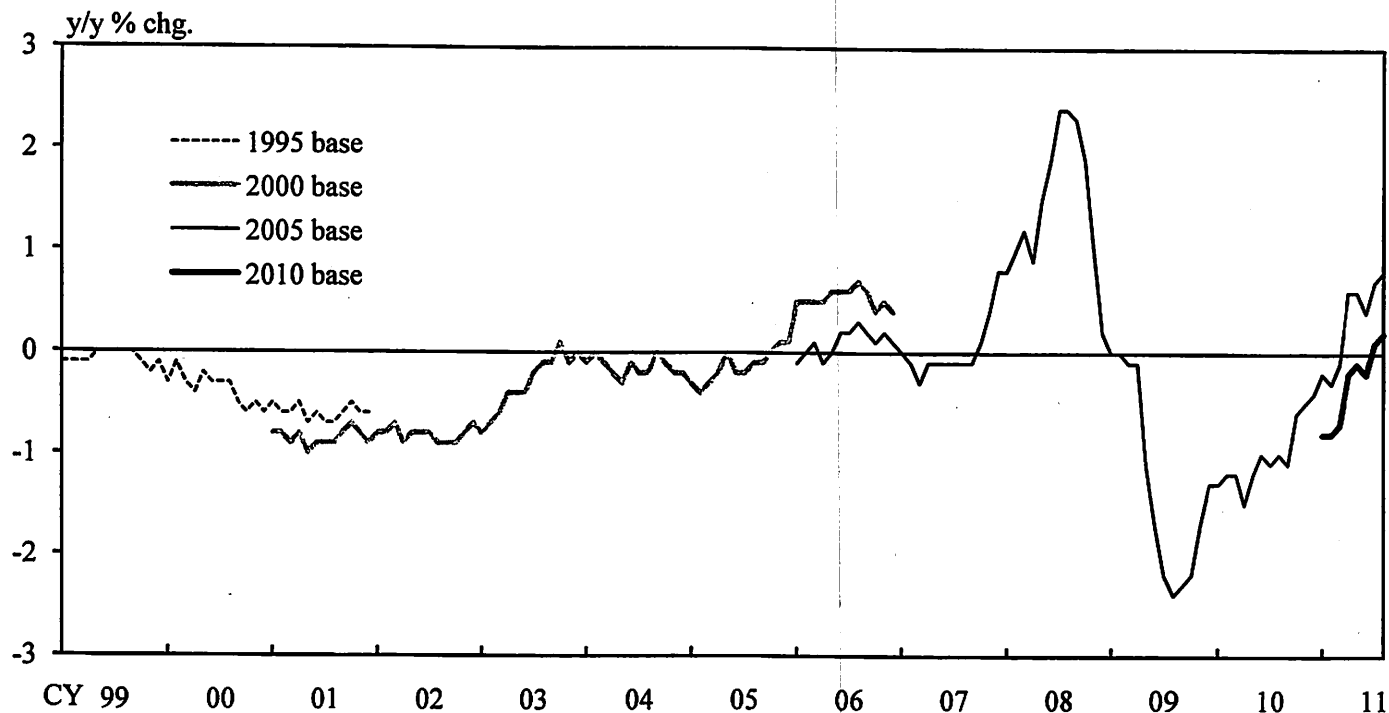
## (2) Corporate Services Price Index



Source: Bank of Japan, "Corporate Goods Price Index," "Wholesale Price Index,"  
"Corporate Services Price Index."

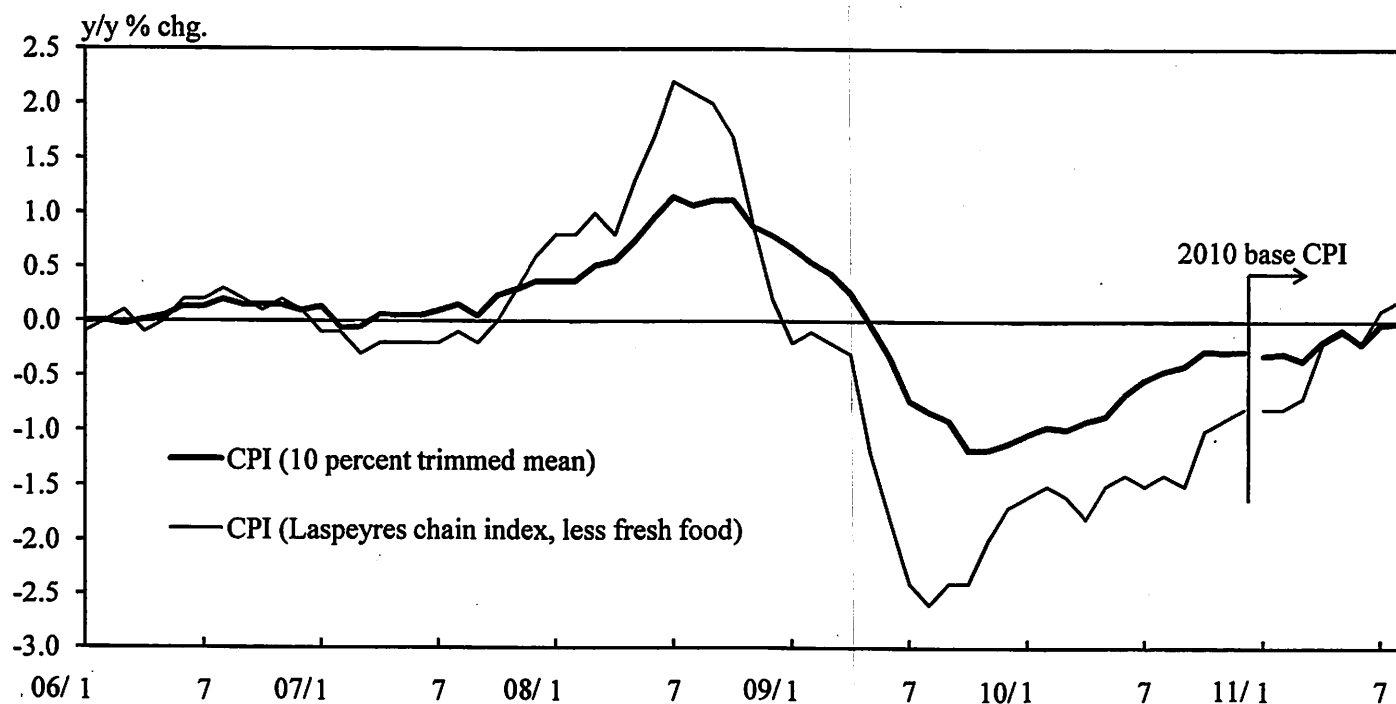
## Consumer Price Index (1)

## (1) Consumer Price Index



Note: Less fresh food.

## (2) Trimmed Mean and Laspeyres Chain Index

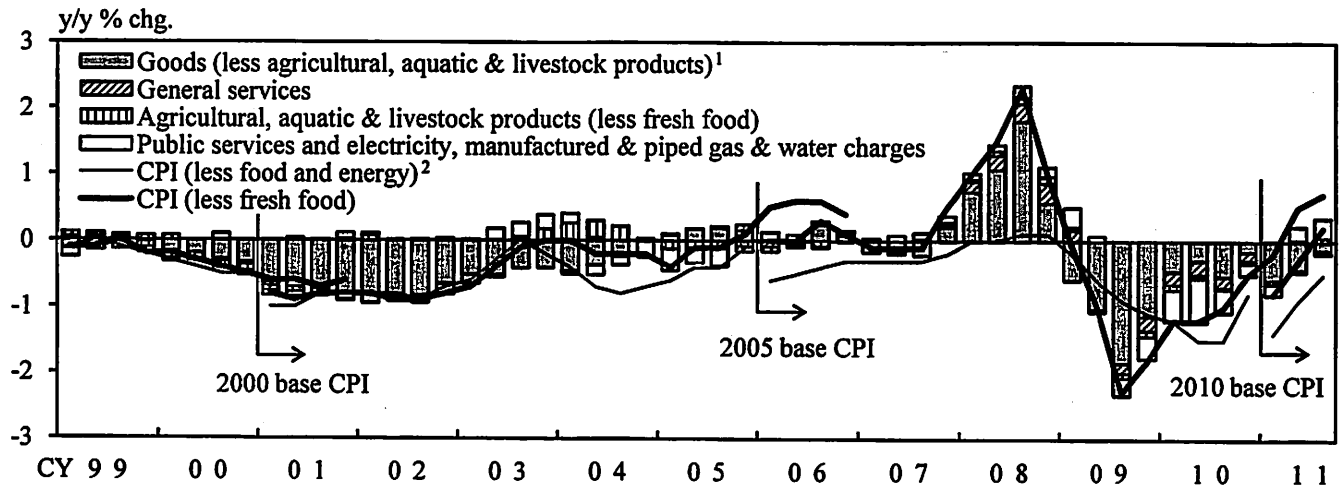


- Notes: 1. Figures for the 10 percent trimmed mean are weighted averages of items; these items are obtained by rearranging year-on-year rates of price change in ascending order and then excluding items in both the upper and lower 10 percent tails by weight.
2. Figures of the Laspeyres chain index for 2006 and 2011 are the year-on-year rates of the fixed-base method.

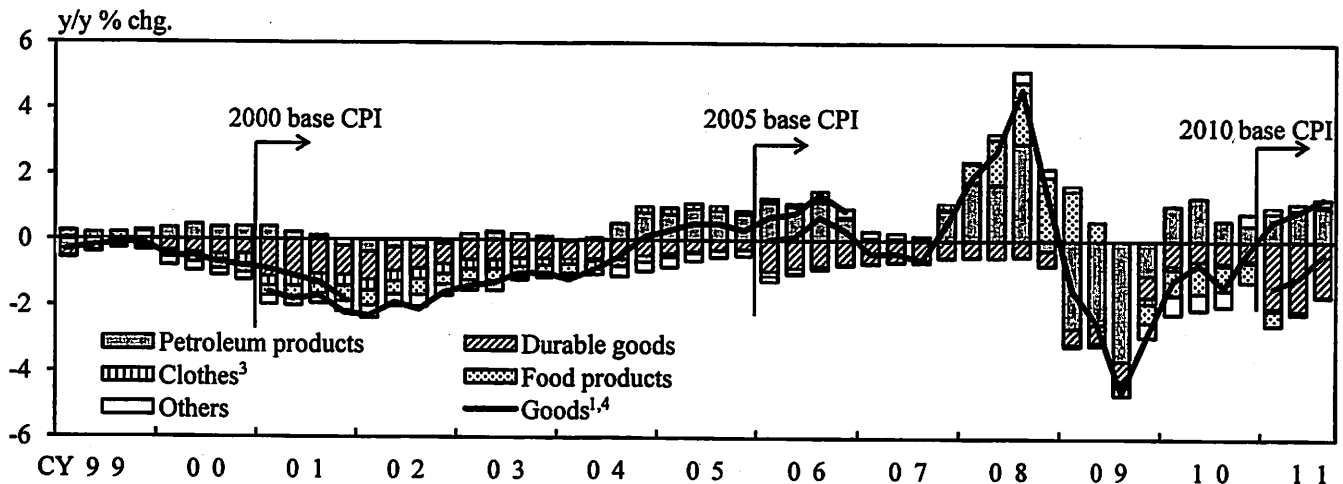


## Consumer Price Index (2)

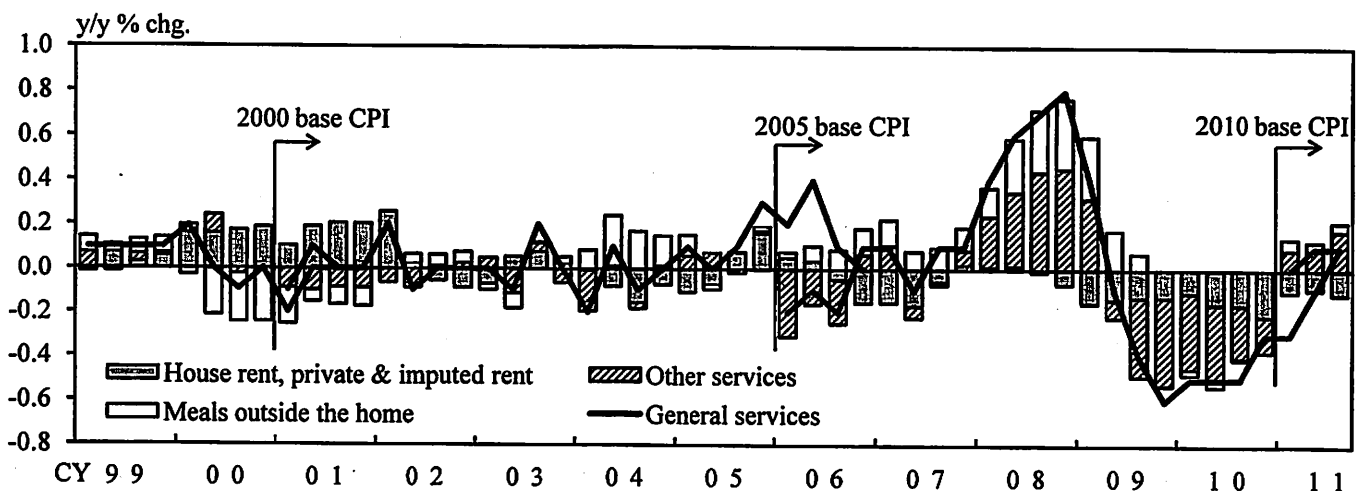
### (1) Consumer Price Index (Less Fresh Food)



### (2) Goods (Less Agricultural, Aquatic & Livestock Products)<sup>1</sup>



### (3) General Services



Notes: 1. The items are basically the same as those defined by the Ministry of Internal Affairs and Communications.

However, electricity, manufactured & piped gas & water charges are excluded from goods.

2. Alcoholic beverages are excluded from food.

3. Including shirts, sweaters & underwear.

4. Less agricultural, aquatic & livestock products.

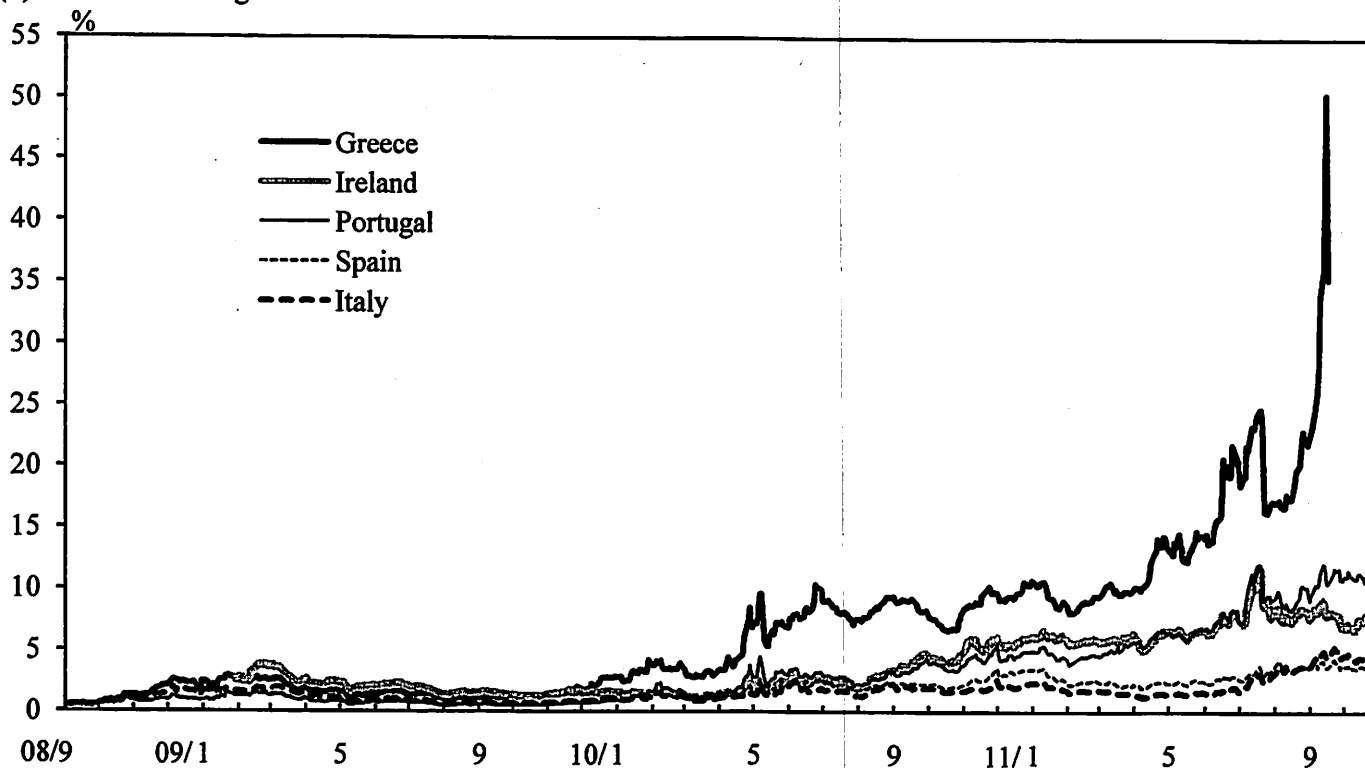
5. The year-on-year rates of change other than those of the CPI (less fresh food), CPI (less food and energy), and General services are calculated using published indices.

6. Figures for 2011/Q3 are the July-August averages.

Source: Ministry of Internal Affairs and Communications, "Consumer Price Index."

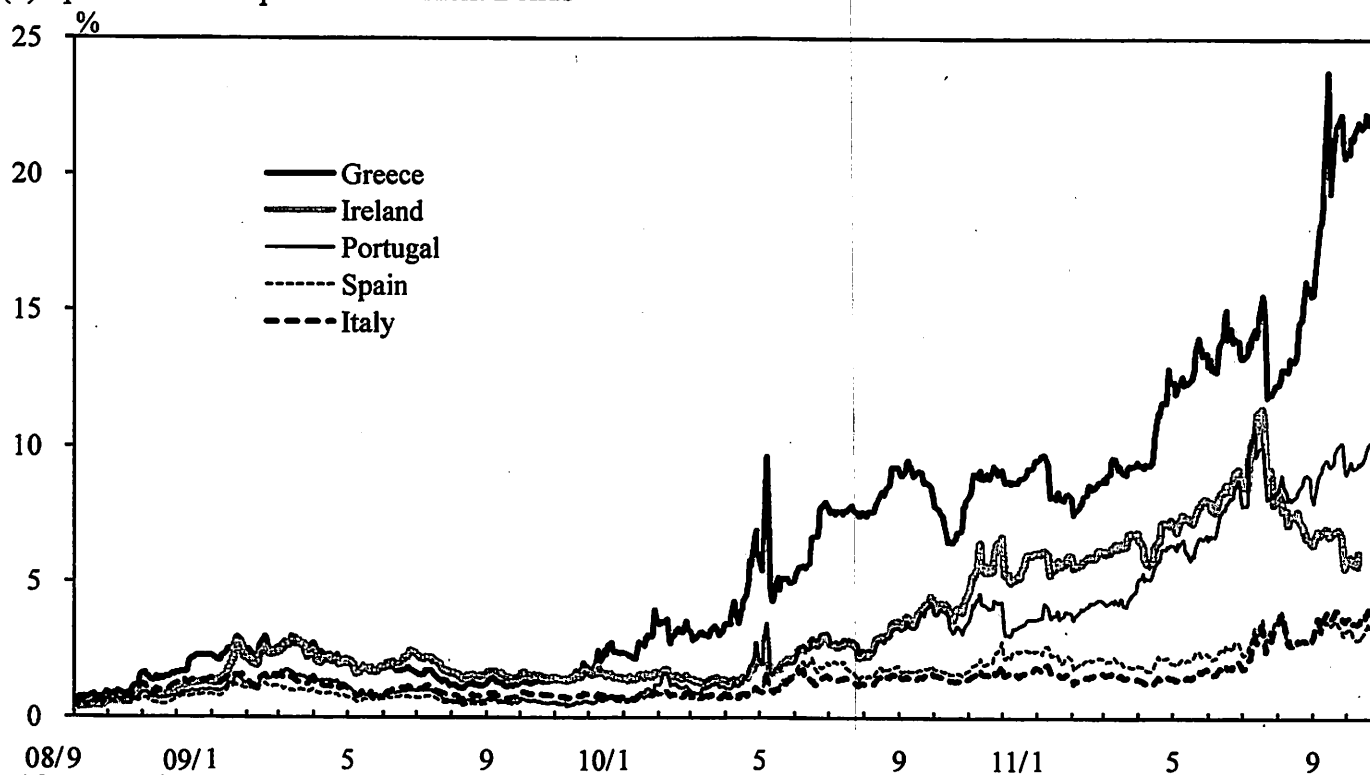
## Sovereign Risk Premiums

## (1) 5-Year Sovereign CDS Premiums



Note: The CDS premium for Greece has been discontinued as of September 16, 2011 due to the decrease in market trades.

## (2) Spreads for European Government Bonds



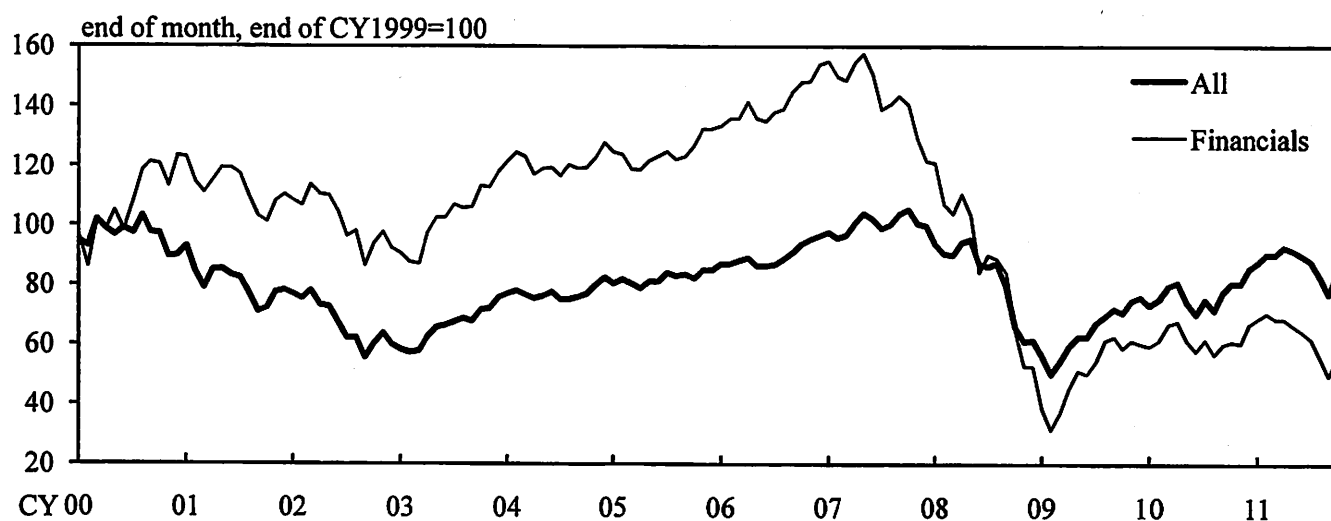
Notes: 1. The spreads for government bonds are the yield spreads for 10-year government bonds issued by European countries minus those issued by Germany.

2. The spreads for Irish bonds have been discontinued as of October 11, 2011 due to the suspension of market issuance since October 2010.

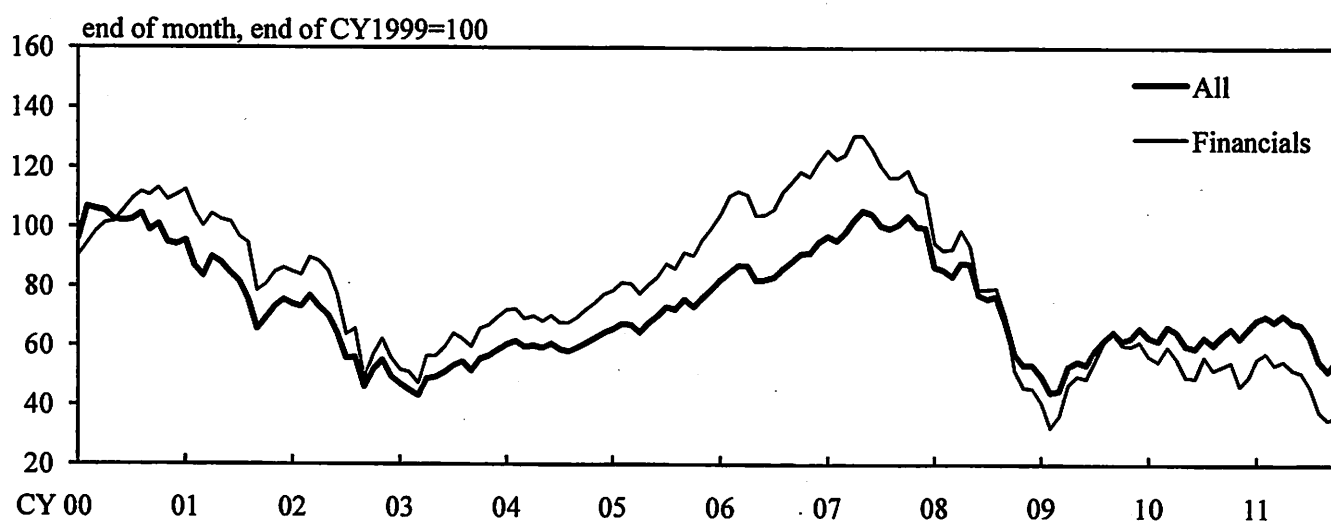
Source: Bloomberg.

## Stock Prices in the United States and Europe, and Volatility

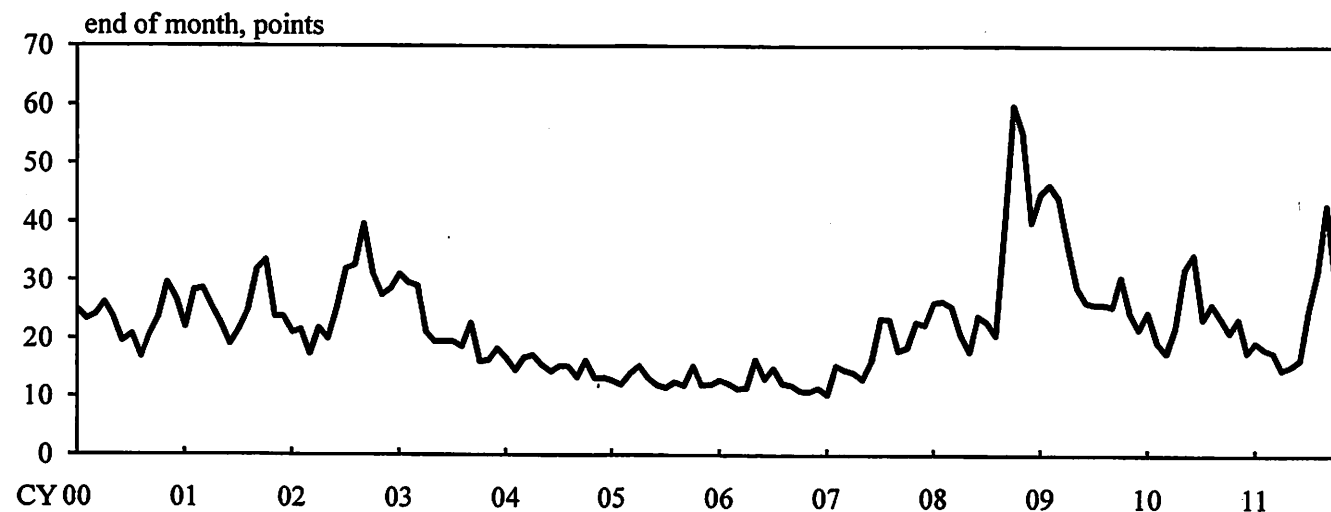
### (1) Stock Prices in the United States (S&P500)



### (2) Stock Prices in Europe (EURO STOXX)



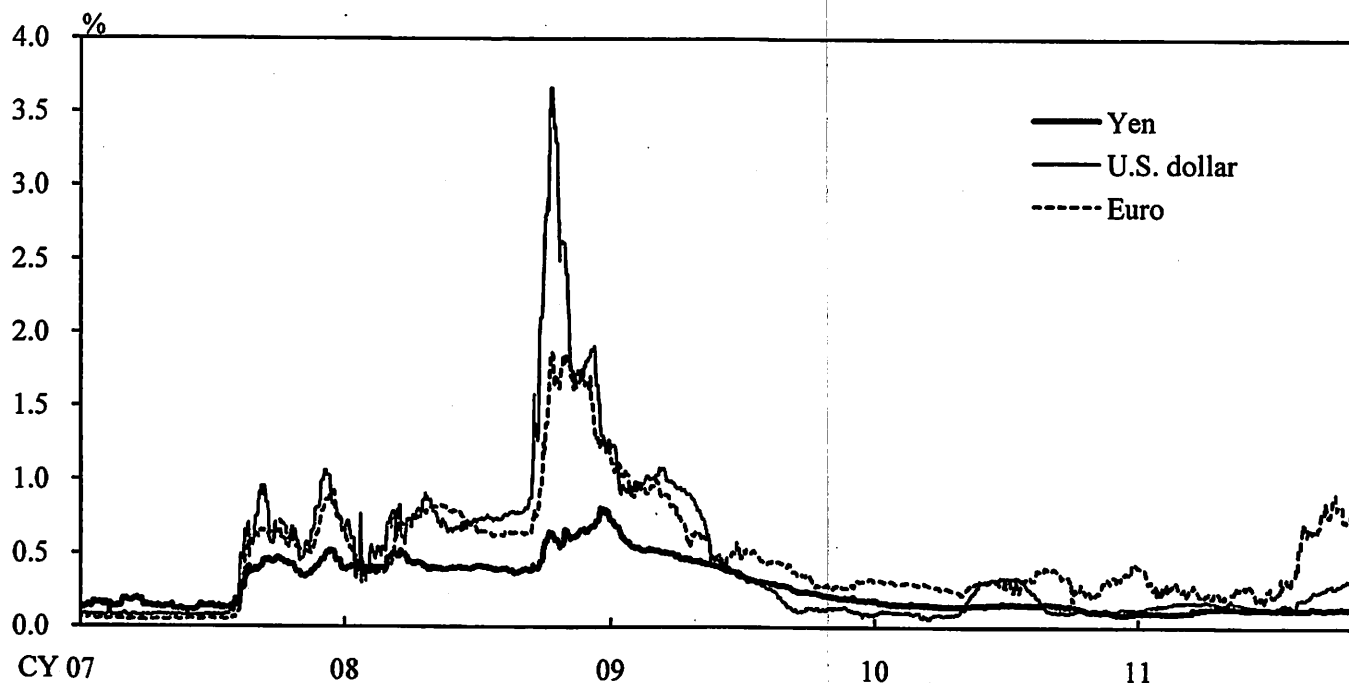
### (3) Implied Volatility of Stock Prices in the United States (VIX Index)



Source: Bloomberg.

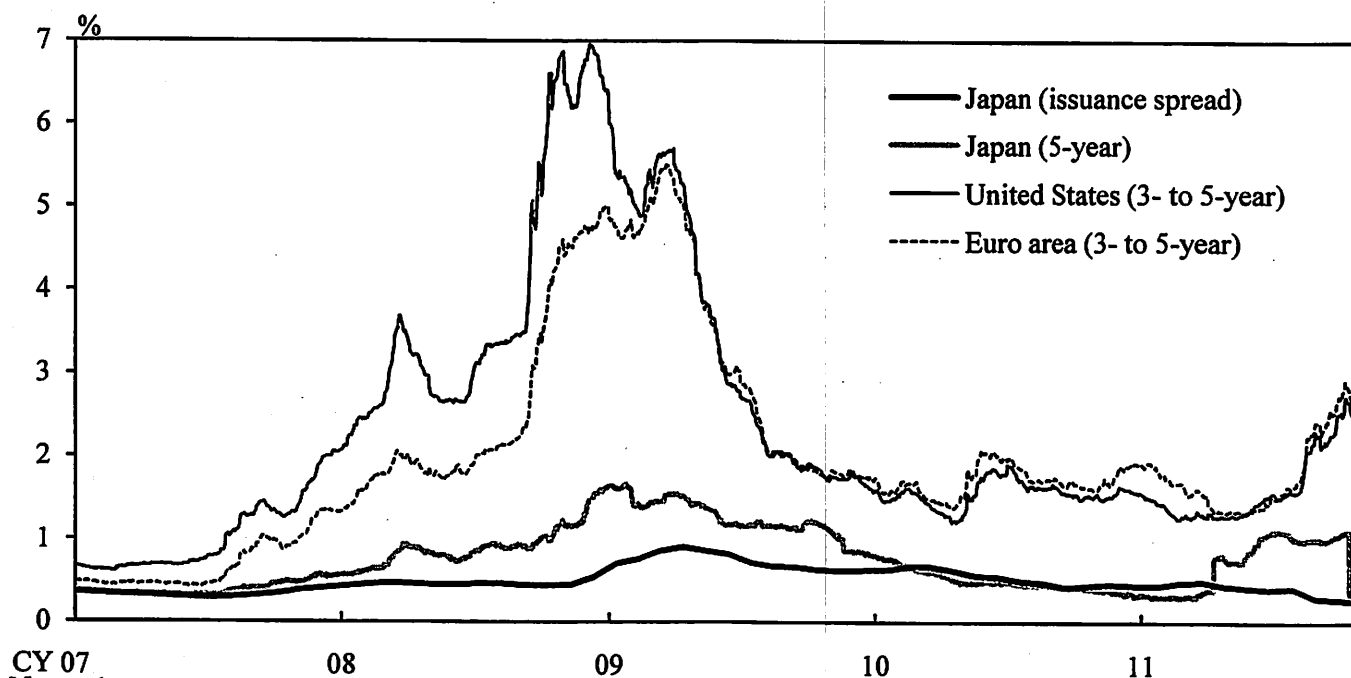
## Credit Spreads in Financial Markets of Major Economies

### (1) Credit Spreads for Yen-, Dollar-, and Euro-Denominated Term Instruments



Note: The credit spreads for term instruments are Libor (3-month) minus yields on overnight index swaps (3-month).

### (2) Credit Spreads for Corporate Bonds in Major Economies



Notes: 1. The credit spreads for corporate bonds (rated A) are the corporate bond yields minus the government bond yields. The indicated ratings of corporate bonds in Japan are of R&I, and those in the United States and the euro area are of Moody's, S&P, and Fitch.

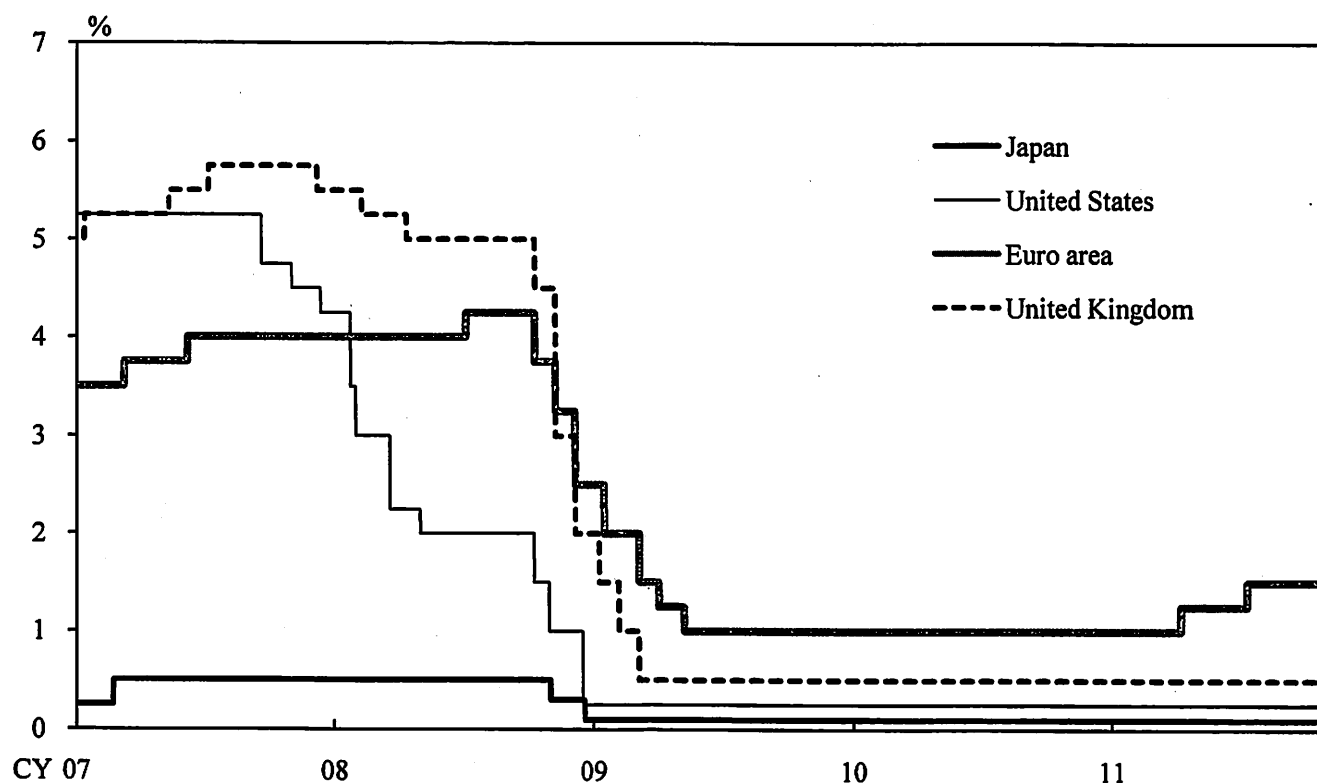
2. For the issuance spread, see Chart 22.

3. The credit spread in Japan fluctuated significantly because of a change in the credit rating of some firms with wide spreads.

Sources: Japan Securities Dealers Association; Capital Eye Ltd.; I-N Information Systems; Bloomberg.

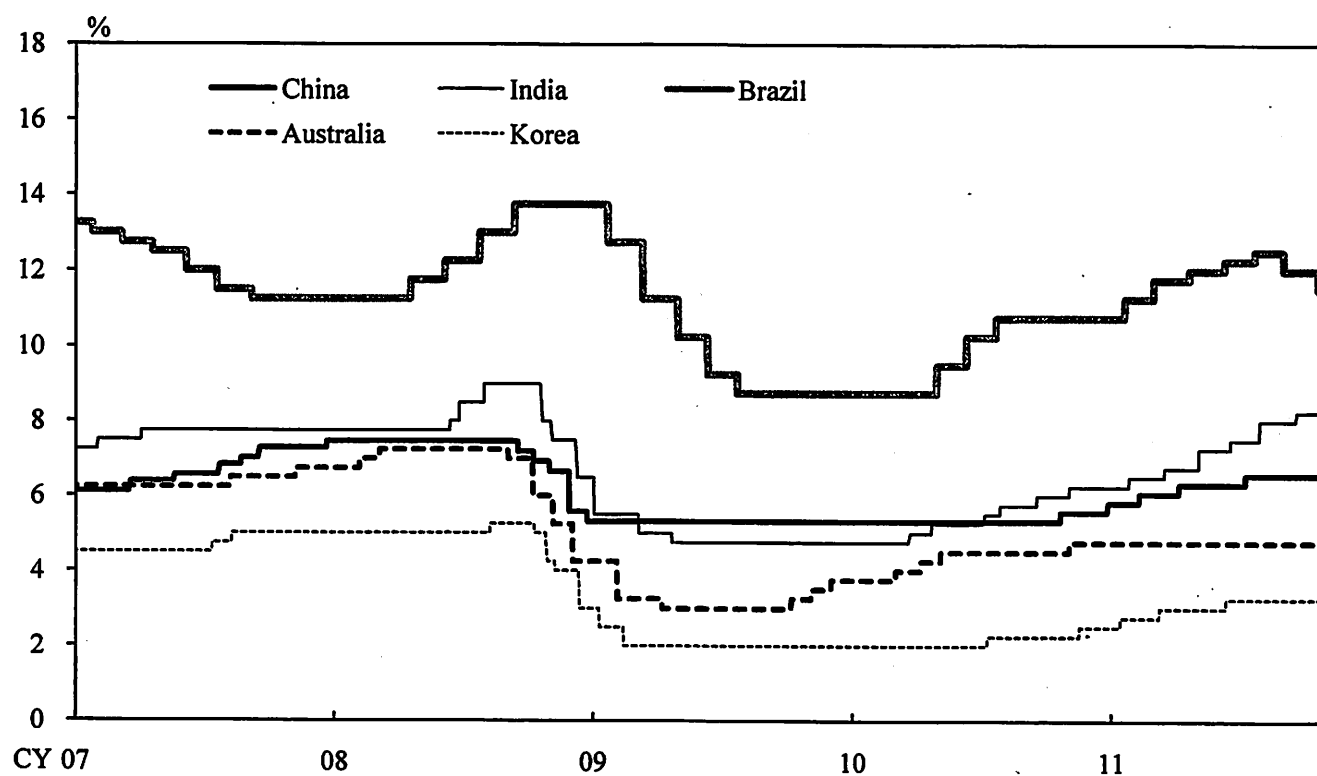
## Policy Interest Rates

## (1) Advanced Economies



Note: In the United States, from December 16, 2008, the target range for the federal funds rate is 0 to 0.25 percent and the interest rate applied to reserve balances is 0.25 percent. In Japan, from October 5, 2010, the Bank of Japan has encouraged the uncollateralized overnight call rate to remain at around 0 to 0.1 percent and the interest rate applied to the complementary deposit facility is 0.1 percent.

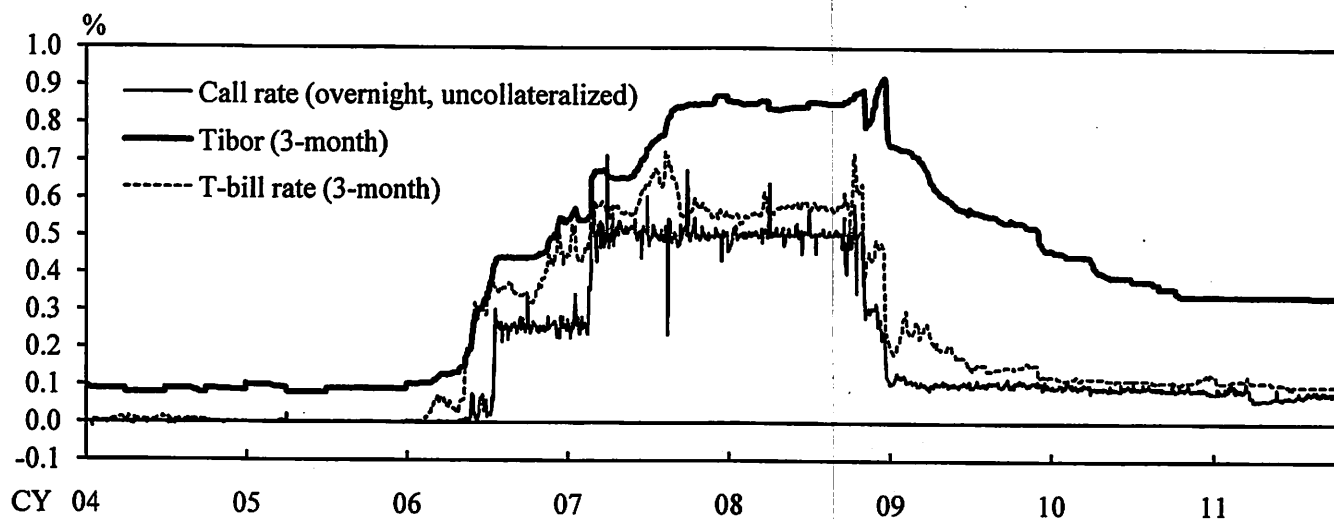
## (2) Emerging and Commodity-Exporting Economies



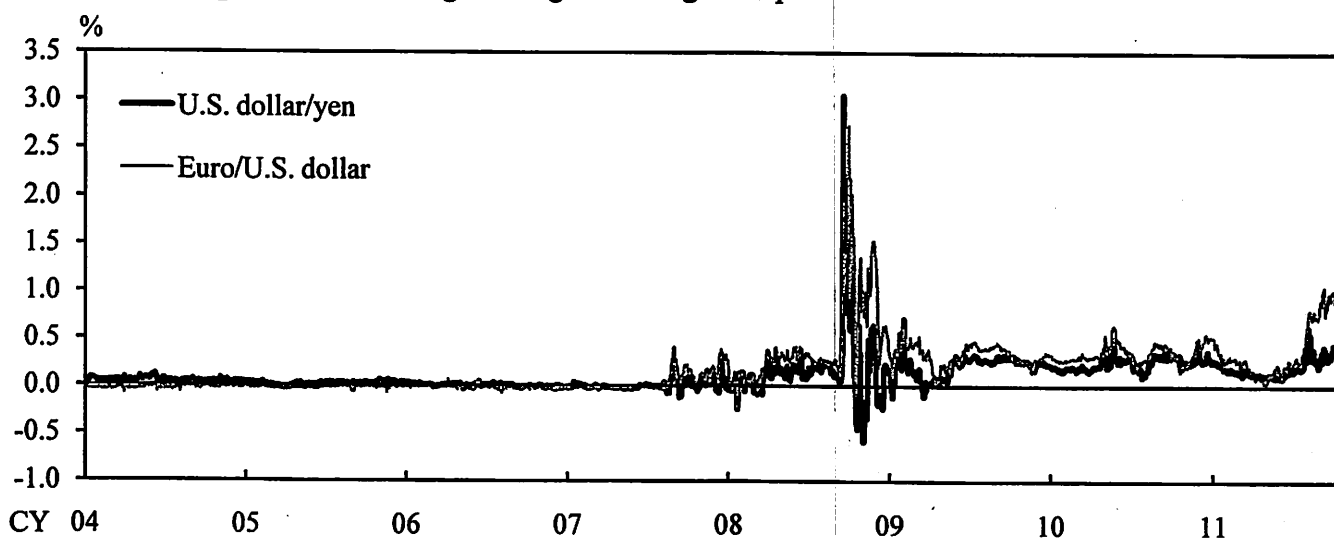
Sources: Bank of Japan; Bloomberg.

## Short-Term Interest Rates

### (1) Short-Term Interest Rates

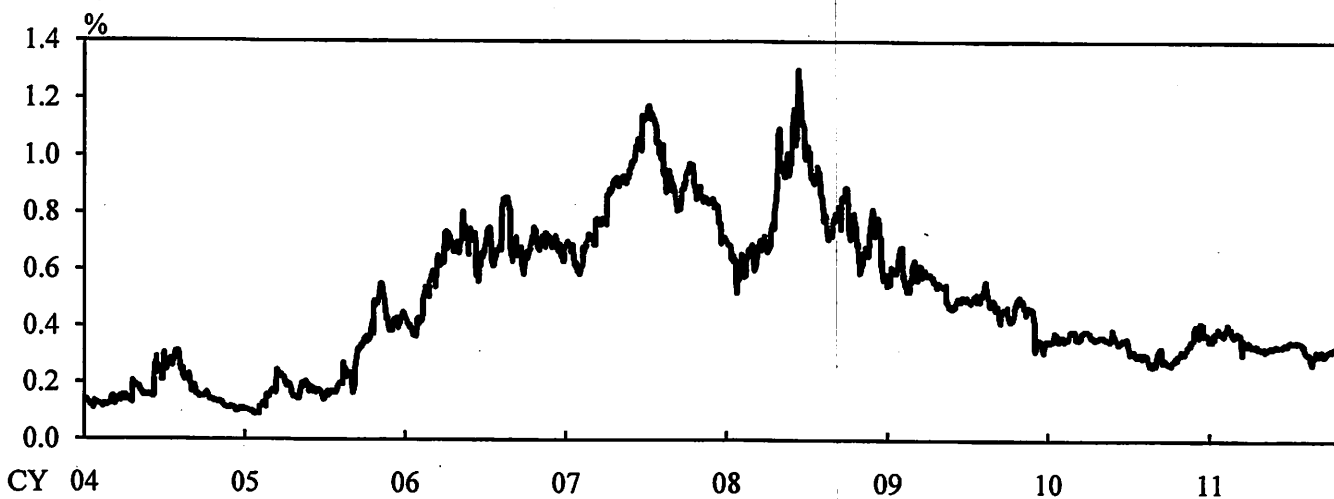


### (2) Dollar Funding Premiums through Foreign Exchange Swaps



Note: Rates for funding the U.S. dollar from the yen or the euro minus 3-month dollar LIBOR.

### (3) Euroyen Interest Rate Futures

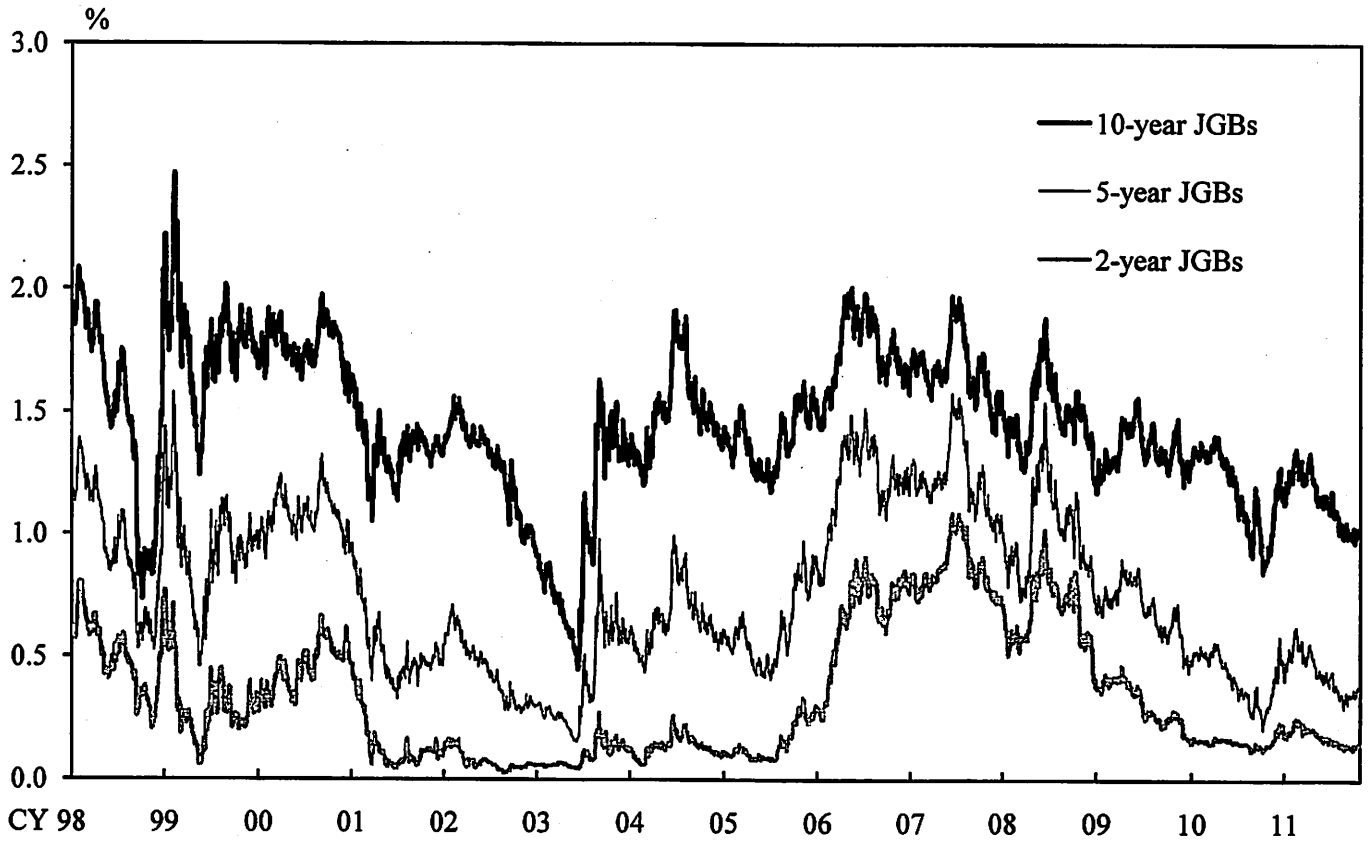


Note: Calculated from those for 3-month, leading contract months.

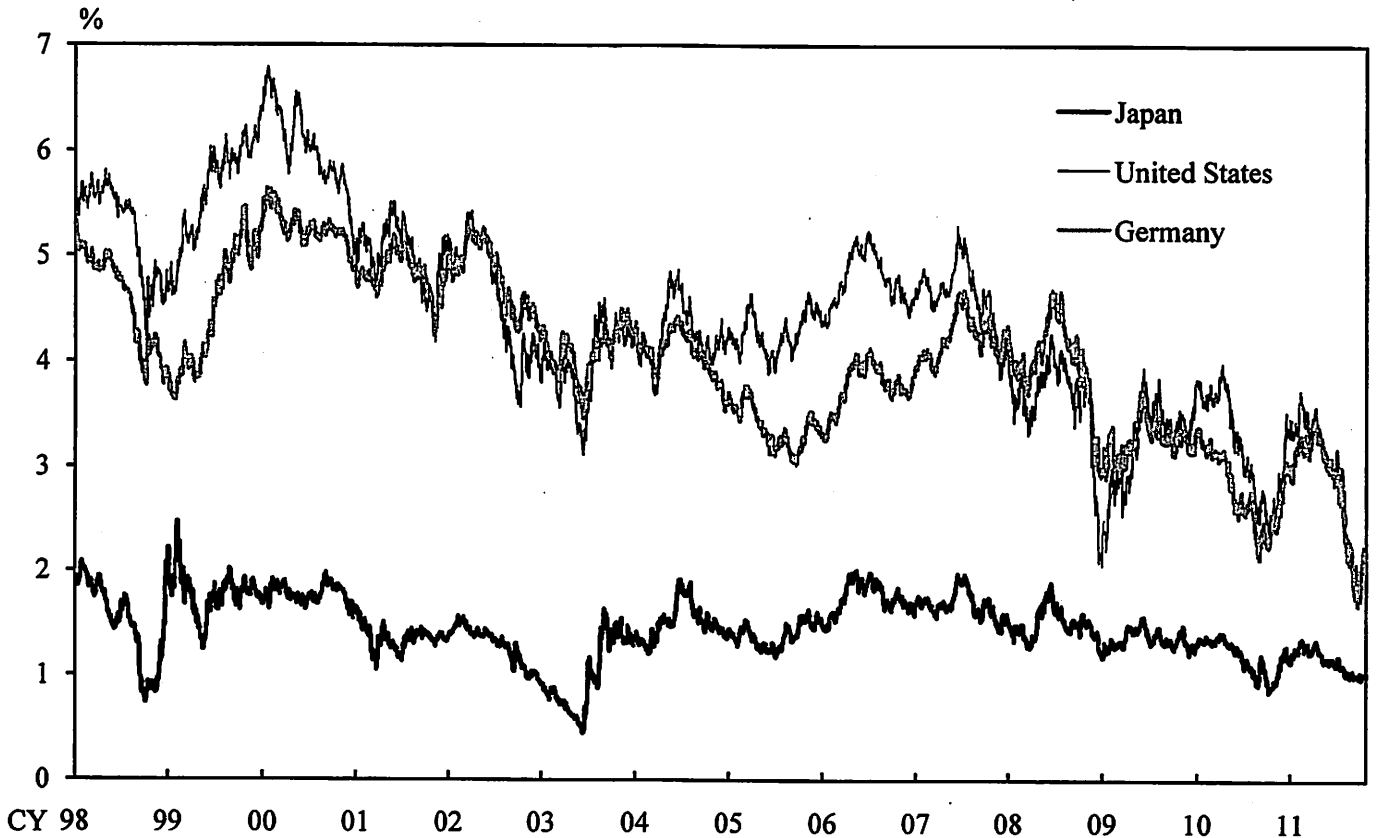
Sources: Bank of Japan; Tokyo Financial Exchange; Bloomberg.

# Long-Term Interest Rates

(1) Government Bond Yields



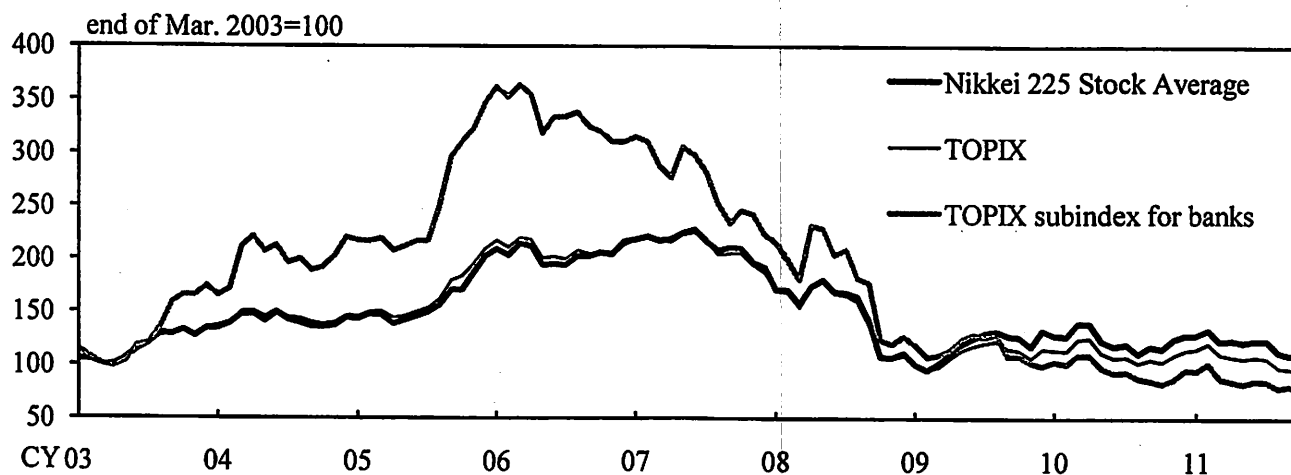
(2) Long-Term Interest Rates in Major Countries (10-Year Government Bond Yields)



Source: Bloomberg.

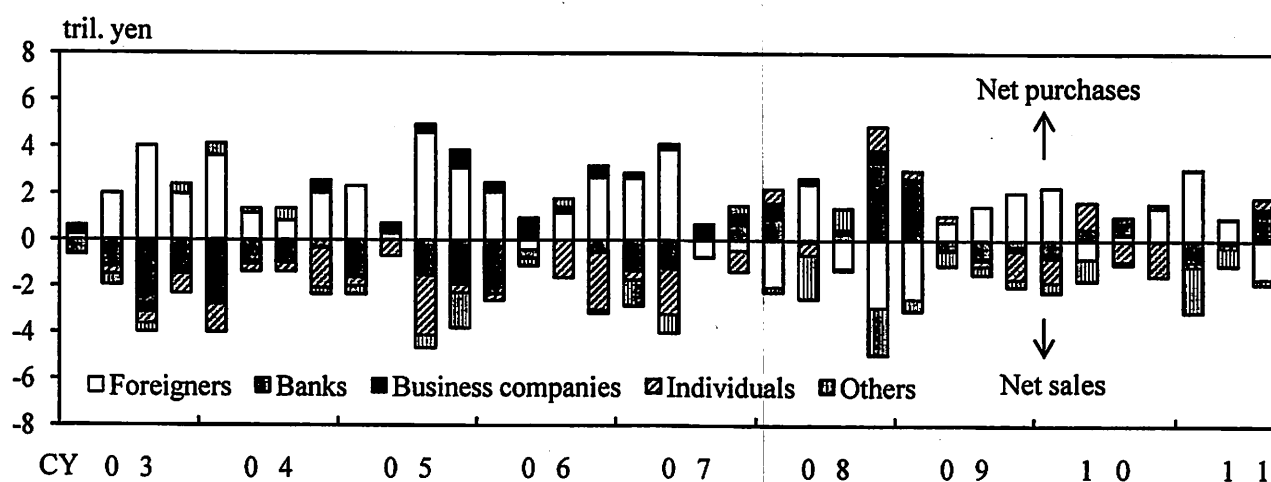
## Stock Prices and the J-REIT Market

### (1) Stock Prices



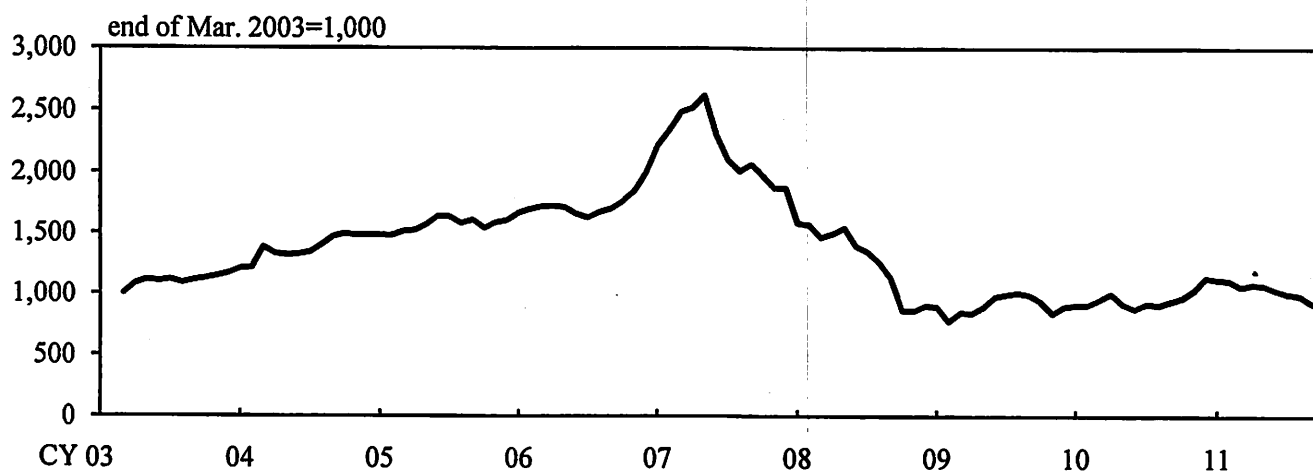
Note: The data are as of month-end.

### (2) Trading Volume by Investor Type



Note: Figures are the sum of the first and second sections of the Tokyo, Osaka, and Nagoya stock exchanges.

### (3) TSE REIT Index



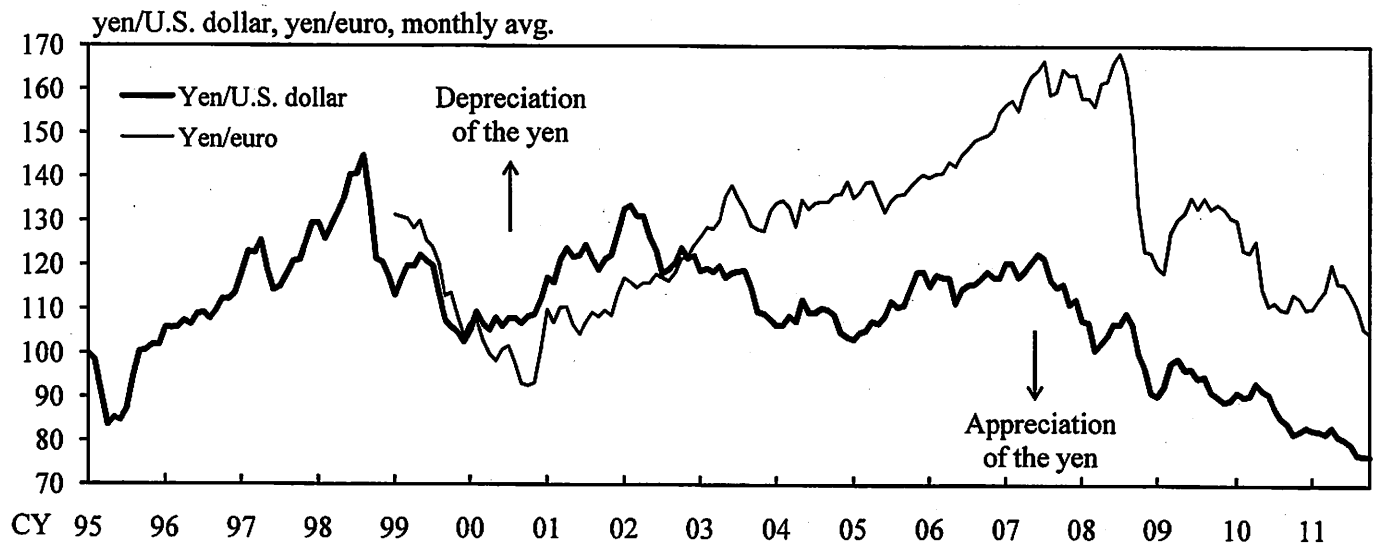
Note: The data are as of month-end.

Sources: Nikkei Inc.; Tokyo Stock Exchange; Bloomberg.

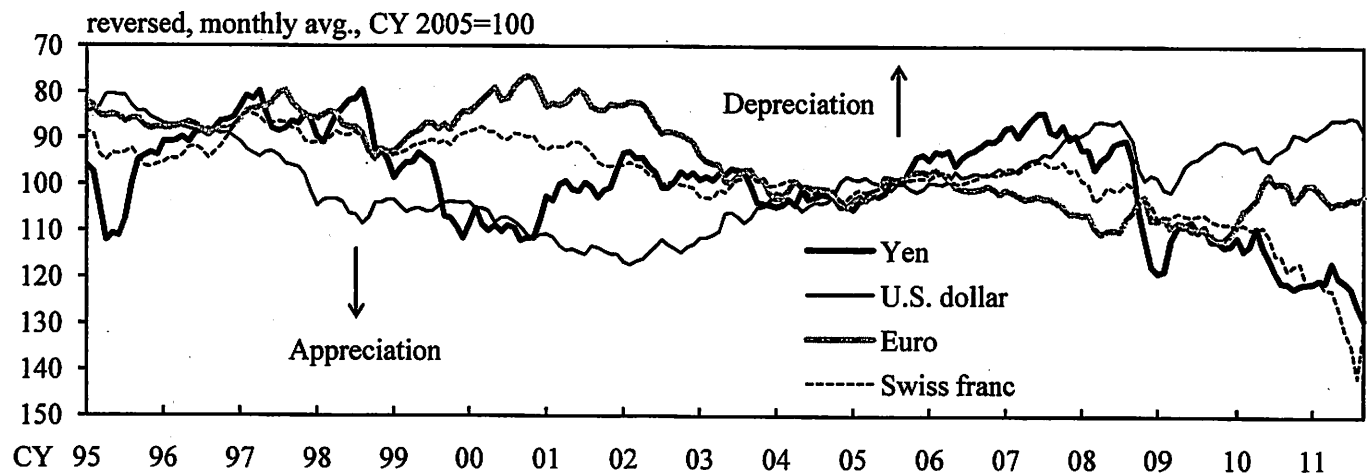


## Exchange Rates

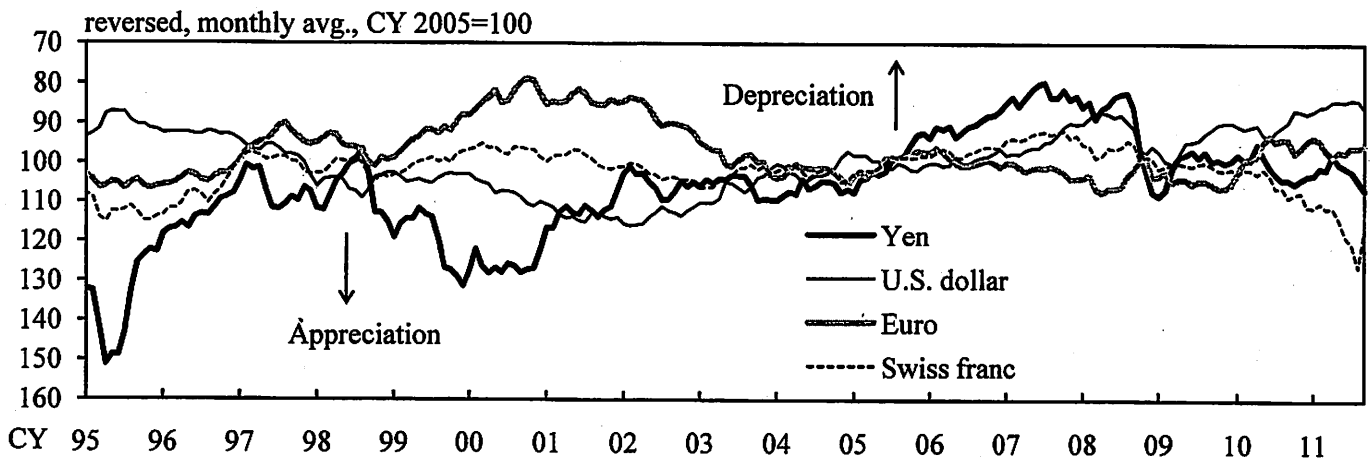
## (1) Yen/U.S. Dollar and Yen/Euro



## (2) Nominal Effective Exchange Rate



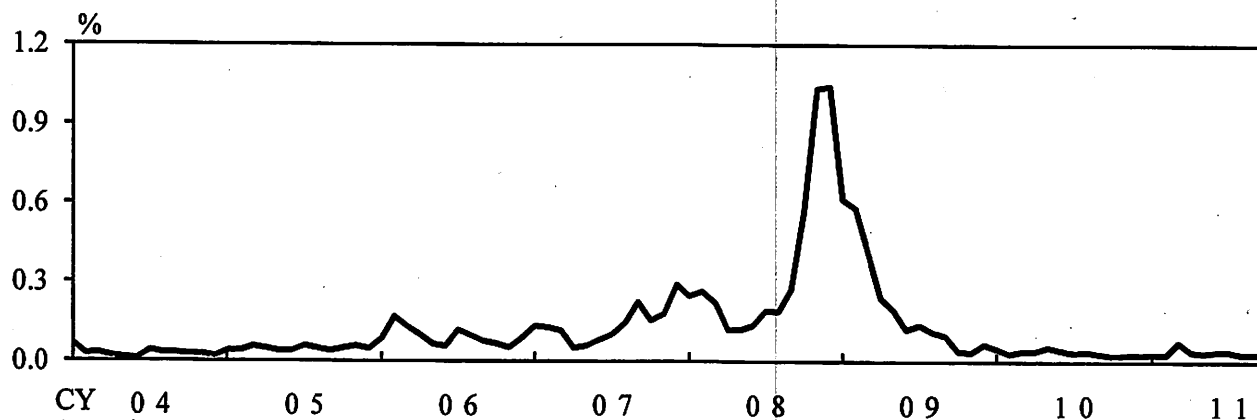
## (3) Real Effective Exchange Rate



Note: The effective exchange rates are based on the broad indices of the BIS effective exchange rate.  
Sources: Bank for International Settlements; Bank of Japan.

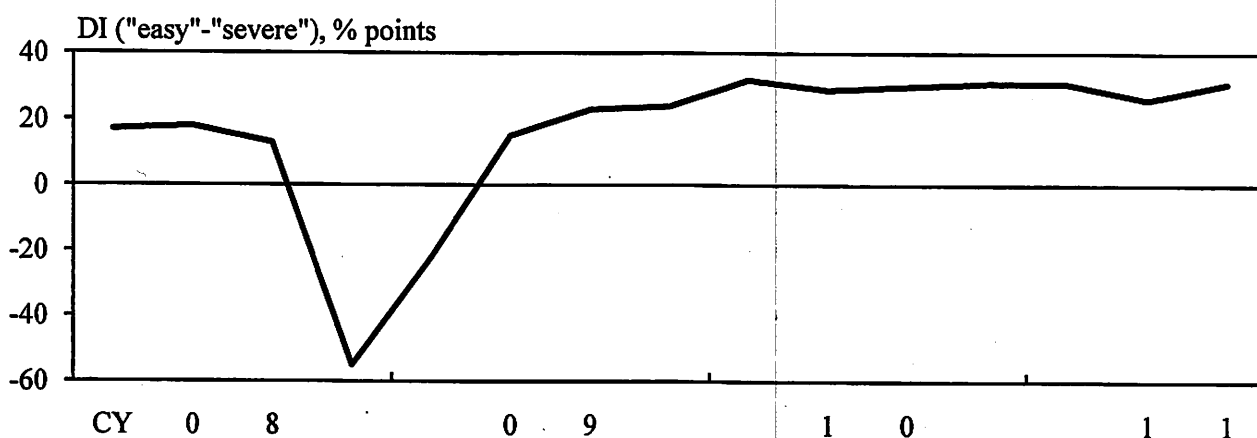
## CP Market

## (1) Credit Spreads for CP



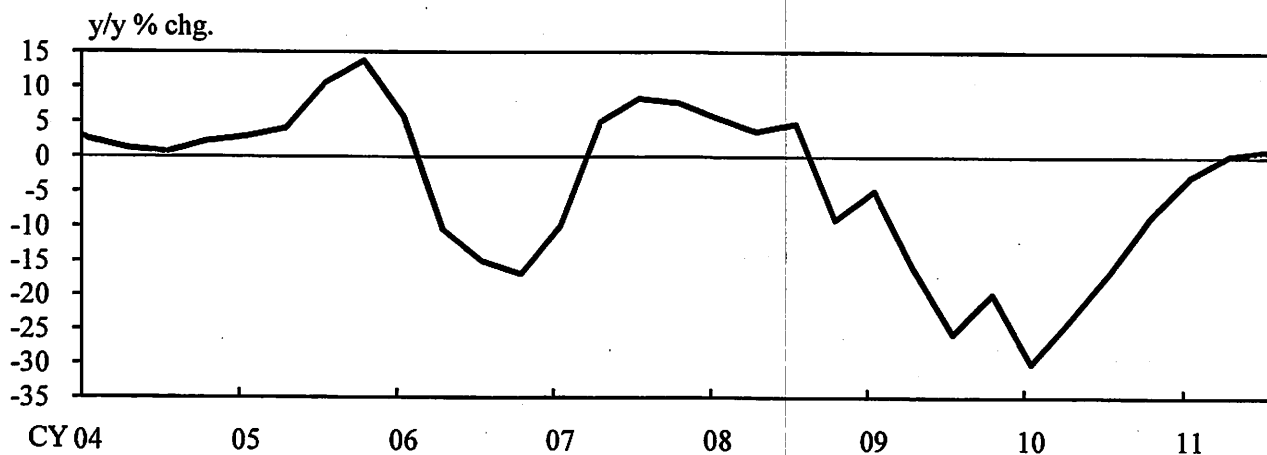
Note: Figures up to September 2009 are the average issuance rate of CP (3-month, rated a-1 or higher) minus the yield on treasury discount bills (3-month). Figures from October 2009 are the average issuance rate of CP (3-month, rated a-1) minus the yield on treasury discount bills (3-month).

## (2) CP Issuance Conditions as Perceived by Firms



Note: Figures of the DI are based on large enterprises of all industries. They are based only on reports by enterprises having issued CP at least once in the past two years.

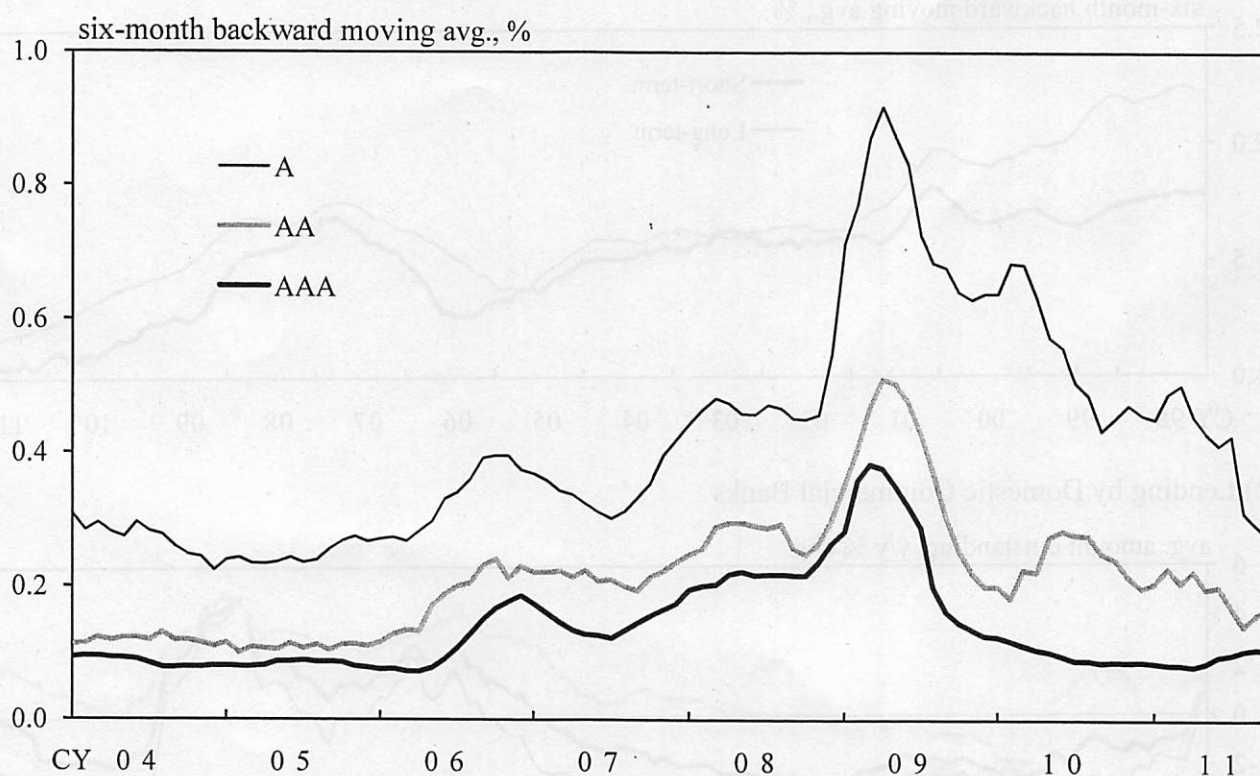
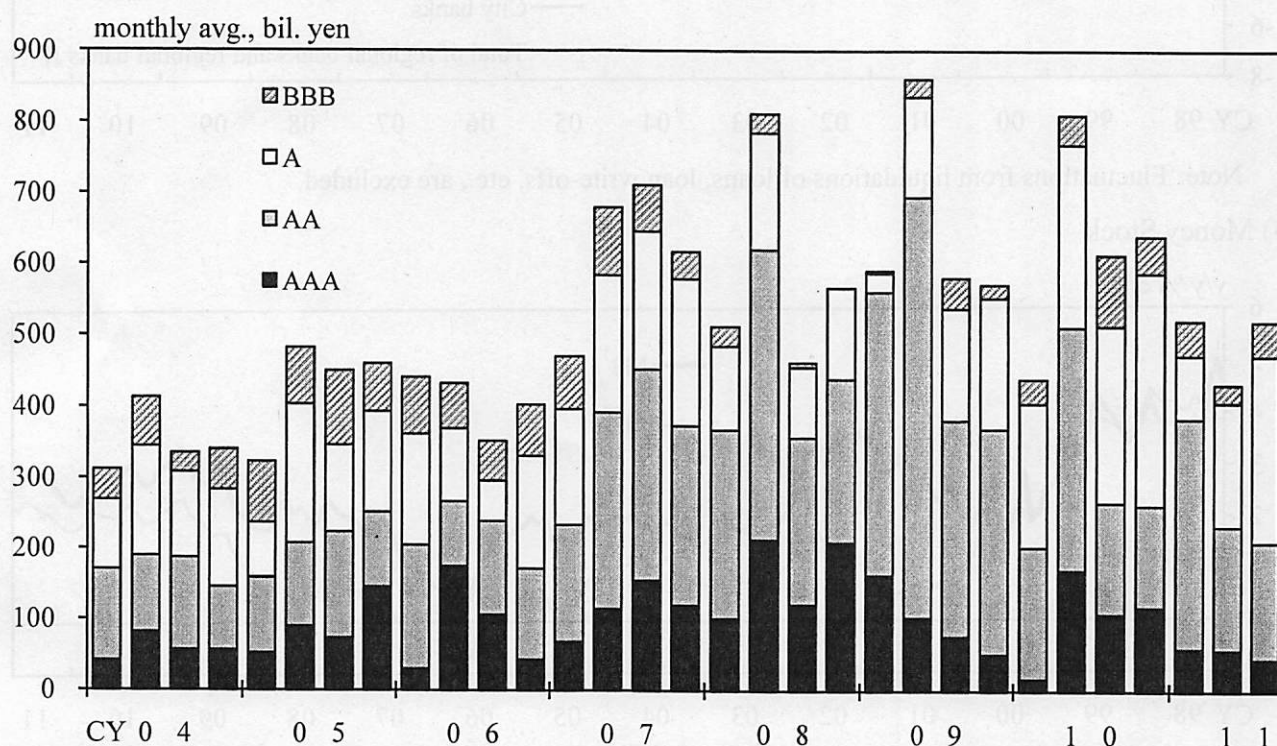
## (3) Amount Outstanding of CP



Note: Figures are those of short-term corporate bonds registered at the book-entry transfer system. Those issued by banks, securities companies and others such as foreign corporations are excluded; ABCPs are included. Figures up to March 2008 are those compiled by the Bank of Japan.

Sources: Bank of Japan, "Average Yields on Newly Issued Domestic Commercial Paper," "Tankan, Short-Term Economic Survey of Enterprises in Japan," "Principal Figures of Financial Institutions"; Japan Securities Depository Center; Bloomberg.

## Corporate Bond Market

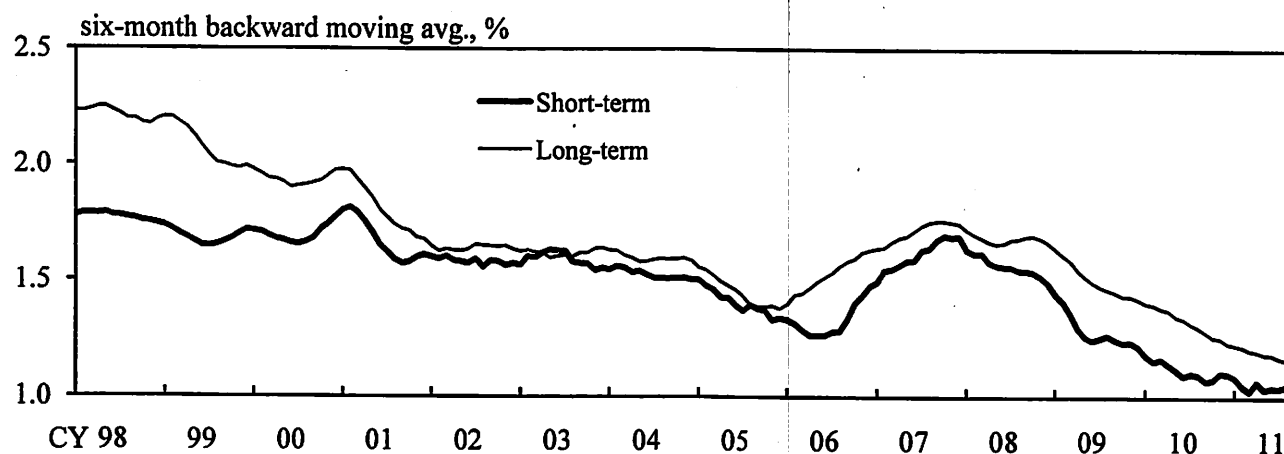
(1) Issuance Spreads for Corporate Bonds<sup>1,2,3,4</sup>(2) Amount of Corporate Bonds<sup>4,5,6</sup>

- Notes: 1. The issuance spreads for corporate bonds are the issuance rate of these bonds minus the government bond yield.  
 2. Figures are the average of all maturities issued in domestic markets, based on the launch date.  
 3. Bonds issued by banks and securities companies, etc., are excluded.  
 4. Bonds are classified by the highest ratings among Moody's, S&P, R&I, and JCR.  
 5. Figures are the sum of straight bonds issued in domestic markets, based on the launch date.  
 6. Bonds issued by banks are excluded.

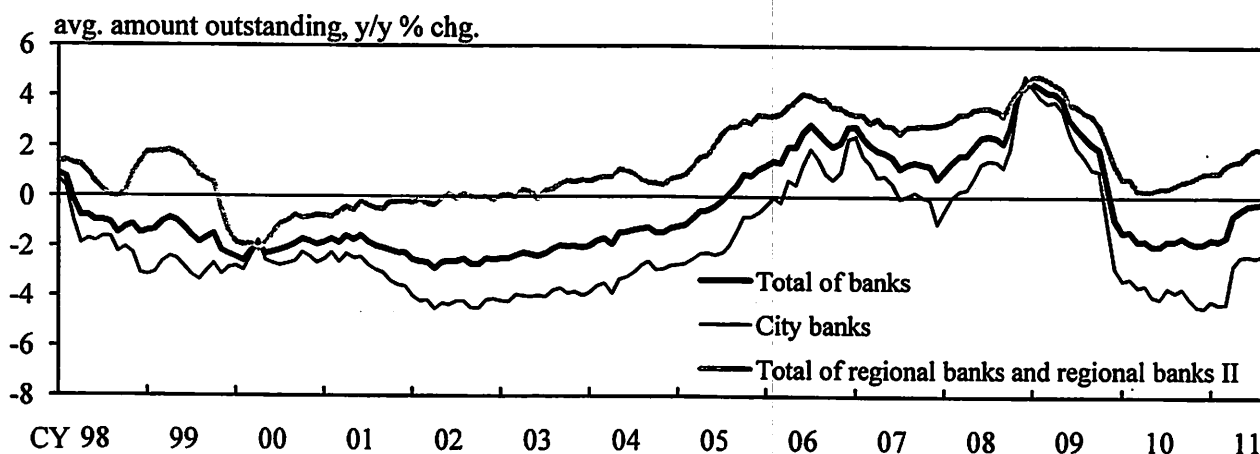
Sources: Capital Eye, Ltd.; I-N Information Systems.

# Bank Lending and Money Stock

## (1) Average Contracted Interest Rates on New Loans and Discounts

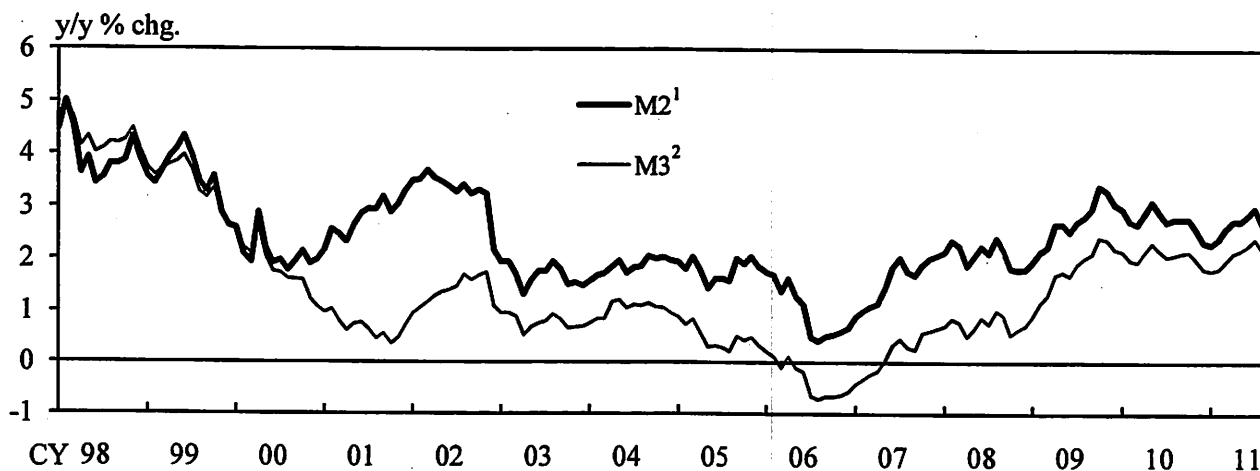


## (2) Lending by Domestic Commercial Banks



Note: Fluctuations from liquidations of loans, loan write-offs, etc., are excluded.

## (3) Money Stock



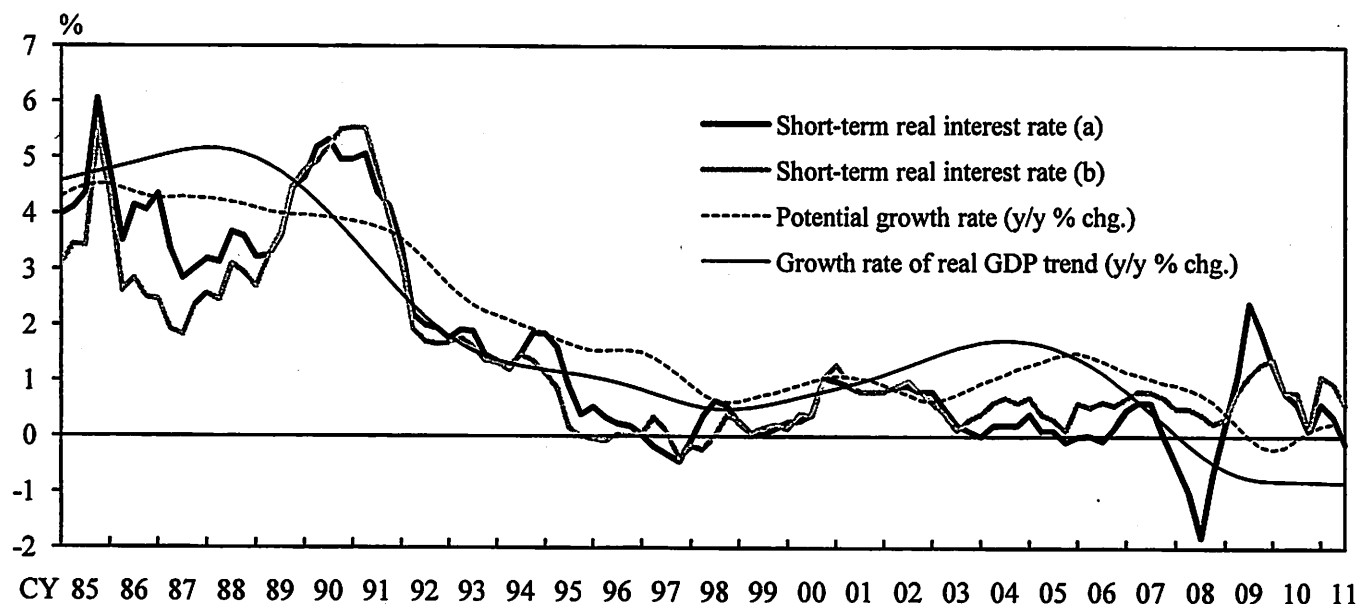
Notes: 1. Figures for M2 up to March 2004 are the former series of the figures for M2+CDs.

2. Figures for M3 up to March 2004 are the former series of the figures for M3+CDs minus the figures for pecuniary trusts.

Source: Bank of Japan, "Principal Figures of Financial Institutions," "Money Stock," "Average Contracted Interest Rates on Loans and Discounts."

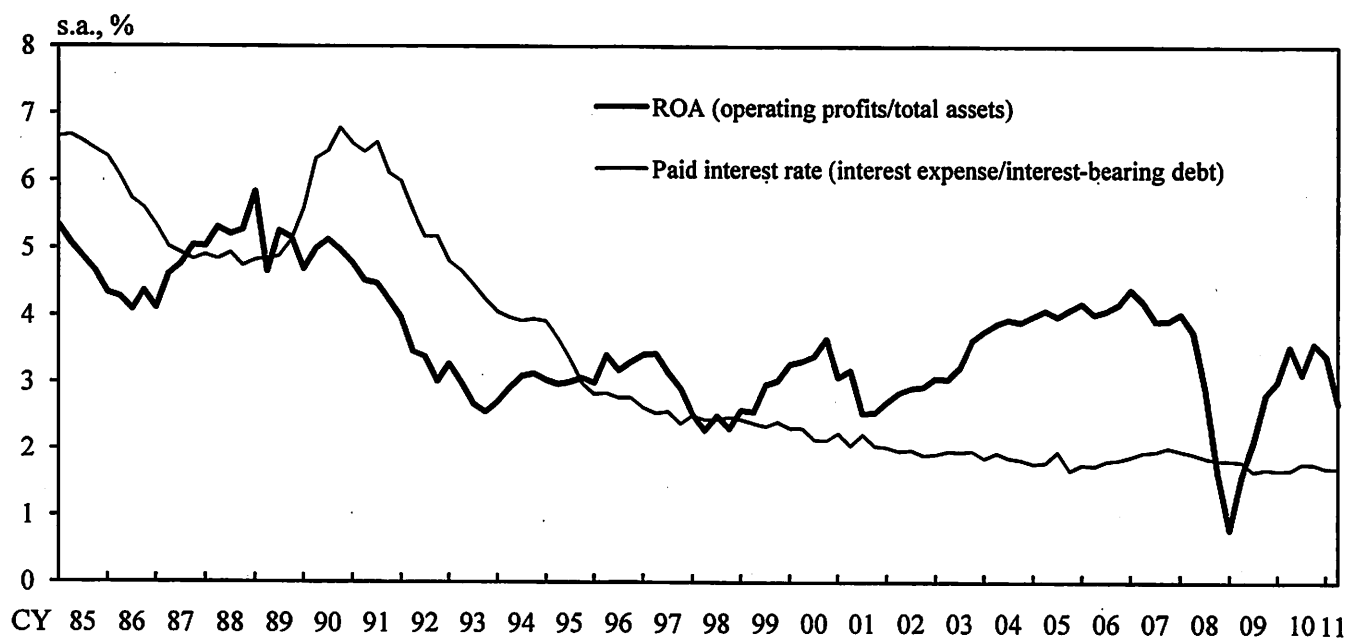
## Interest Rates and Economic Activity

### (1) Short-Term Real Interest Rate and Real GDP Growth Rate



- Notes: 1. Short-term real interest rate (a) = call rate (overnight, uncollateralized) - year-on-year percentage change in the CPI (all items less fresh food)  
 2. Short-term real interest rate (b) = call rate (overnight, uncollateralized) - year-on-year percentage change in the CPI (all items less food [alcoholic beverages are excluded from food] and energy)  
 3. Figures for the CPI are adjusted to exclude the effects of changes in the consumption tax rate. From 2001/Q1, high school fees are excluded.  
 4. The potential growth rate is estimated by the Research and Statistics Department, Bank of Japan.  
 5. Real GDP trend is calculated by applying the HP filter.

### (2) ROA and Paid Interest Rate

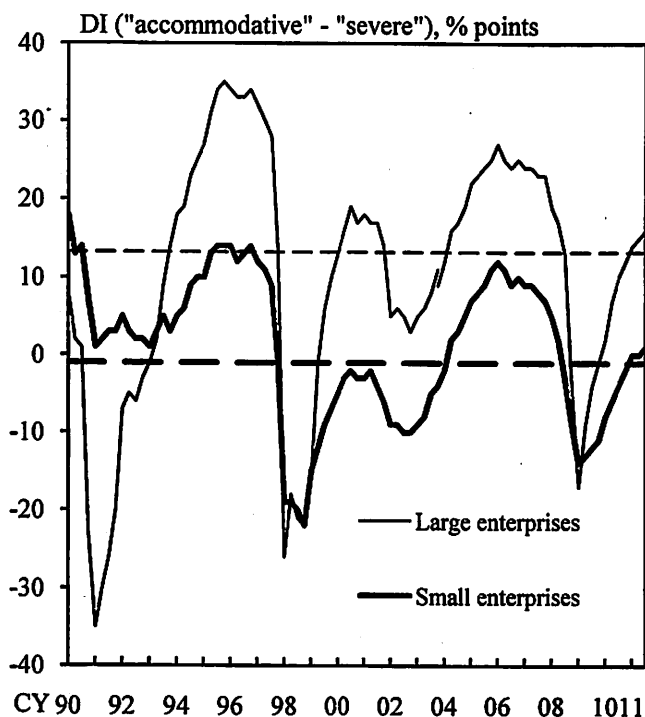


- Notes: 1. Figures are taken from the "Financial Statements Statistics of Corporations by Industry, Quarterly," and are based on all-size enterprises and all industries. Finance and insurance are excluded.  
 2. Interest-bearing debt is the sum of long- and short-term borrowings, corporate bonds, and bills receivable discounted outstanding.

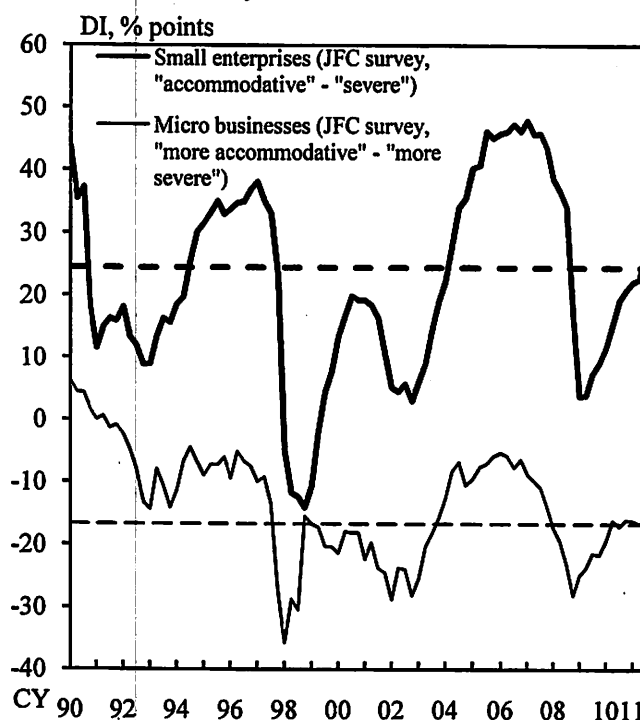
Sources: Cabinet Office, "National Accounts"; Ministry of Internal Affairs and Communications, "Consumer Price Index"; Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Quarterly"; Bank of Japan.

## Corporate Finance-Related Indicators

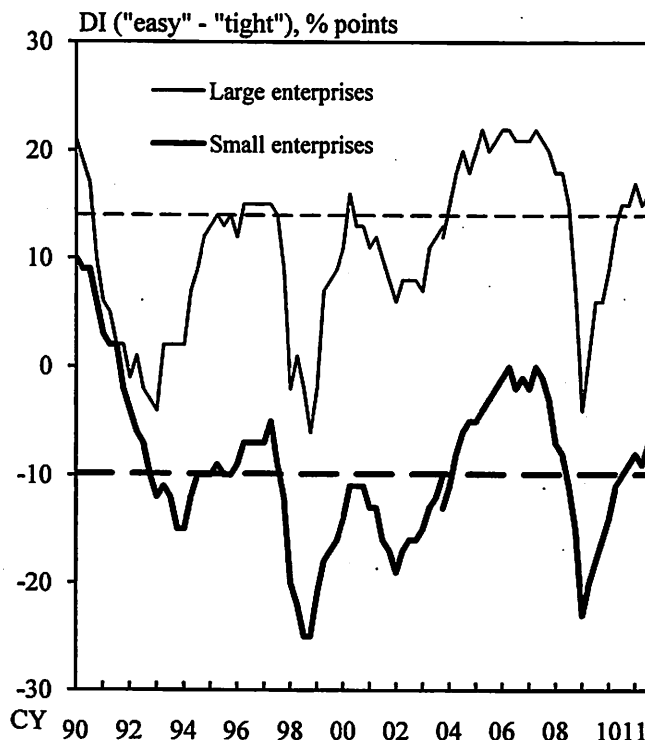
## (1) Lending Attitude of Financial Institutions as Perceived by Firms

(a) *Tankan*

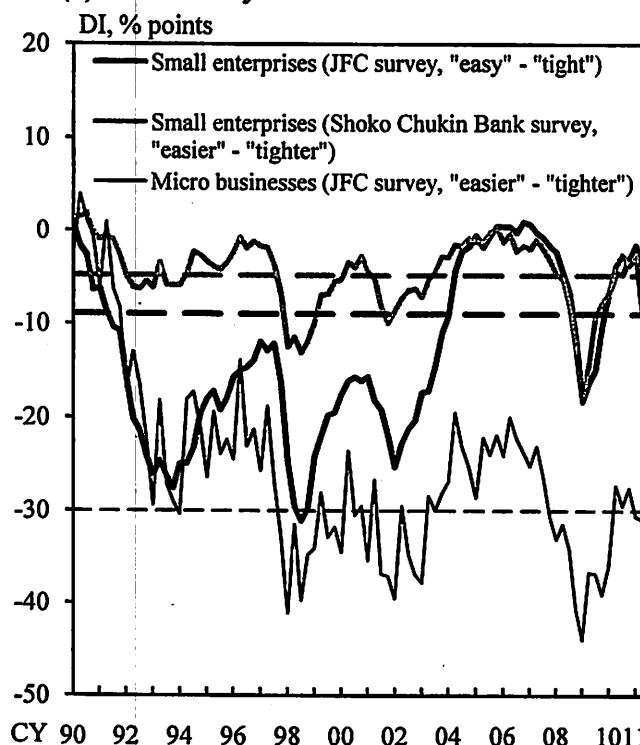
(b) Other Surveys



## (2) Financial Position

(a) *Tankan*

(b) Other Surveys

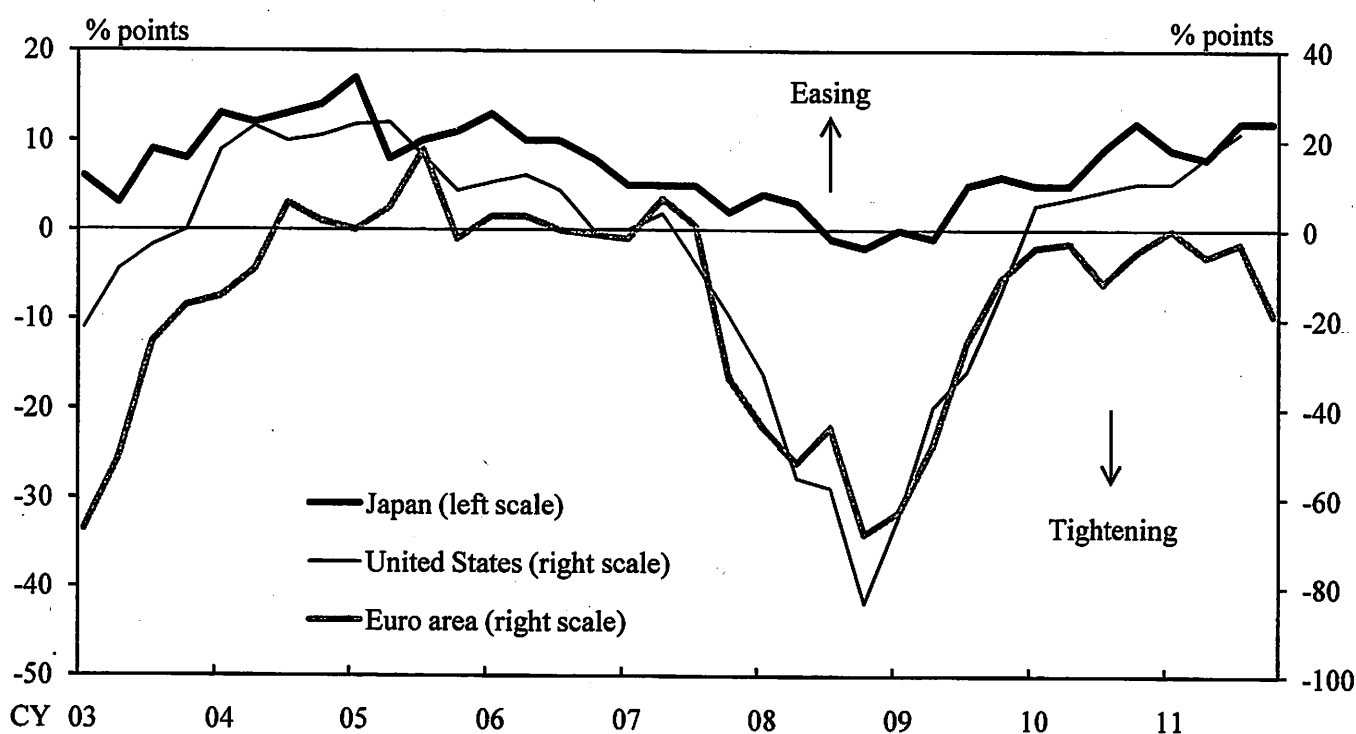


Note: Data of the "Tankan" are based on all industries. The "Tankan" was revised from the March 2004 survey. Figures up to the December 2003 survey are based on the previous data sets. Figures from the December 2003 survey are on the new basis. Broken lines are the averages since 2000.

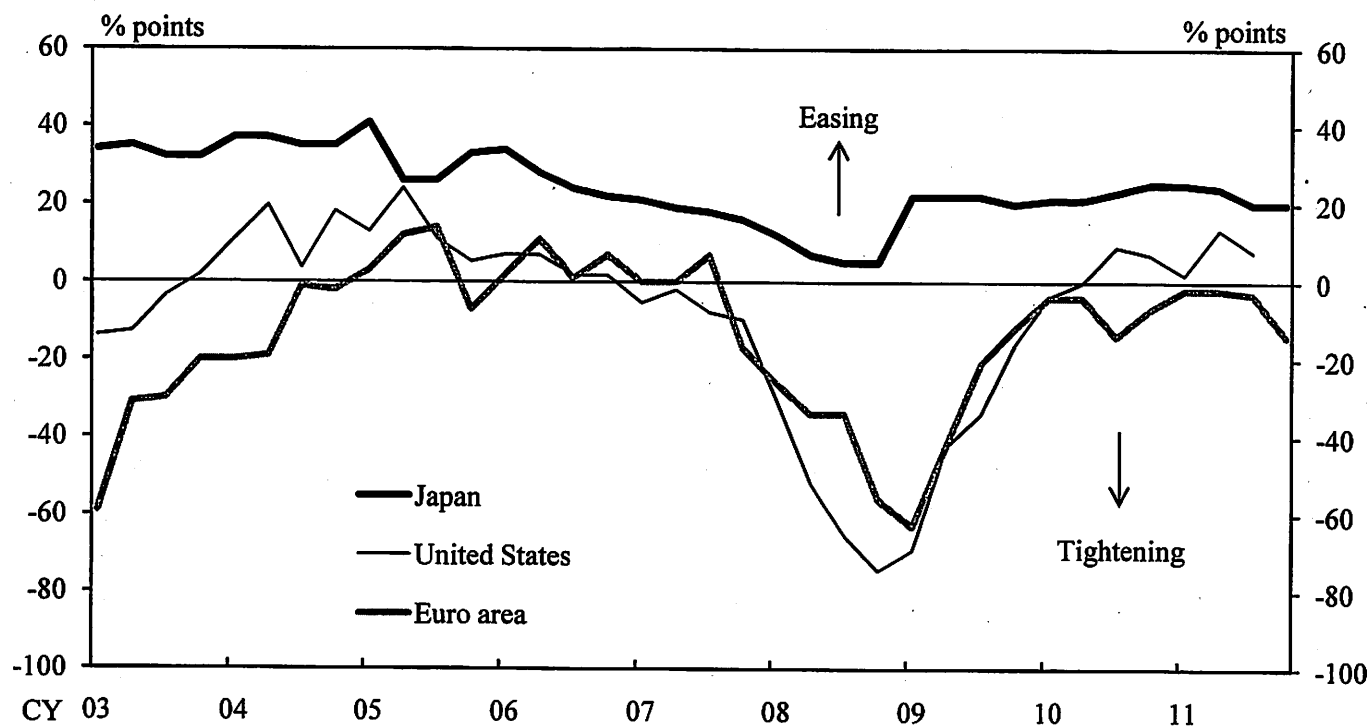
Sources: Bank of Japan, "Tankan, Short-Term Economic Survey of Enterprises in Japan"; Shoko Chukin Bank, Ltd., "Business Survey Index for Small and Medium-Sized Businesses"; Japan Finance Corporation (JFC), "Monthly Survey of Small Businesses in Japan," "Quarterly Survey of Small Businesses in Japan (For Micro Businesses)."

## Bank Lending Practices

### (1) Bank Lending to Large Firms



### (2) Bank Lending to Small and Medium-Sized Firms



Notes: 1. For the United States, (1) is based on large and medium-sized firms and (2) is based on small firms.

2. Japan: "eased considerably" + 0.5×"eased somewhat" - 0.5×"tightened somewhat" - "tightened considerably"

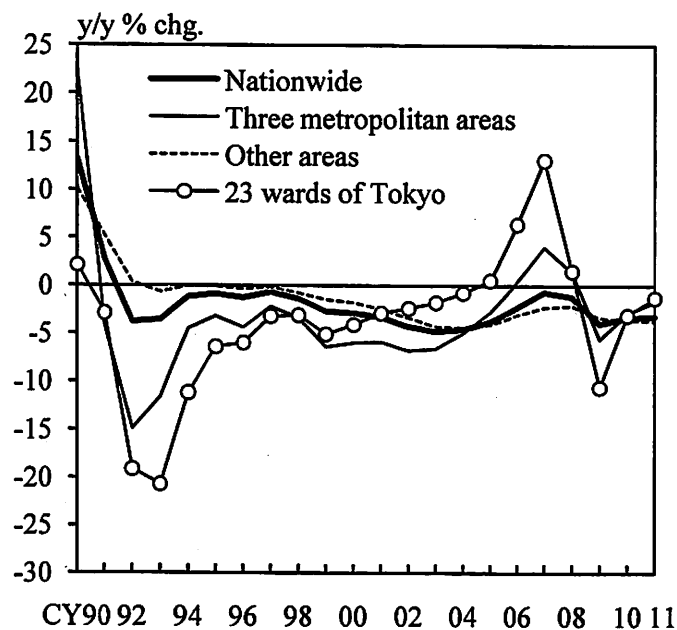
3. United States and euro area: "eased considerably" + "eased somewhat" - "tightened somewhat" - "tightened considerably"

Sources: Bank of Japan, "Senior Loan Officer Opinion Survey on Bank Lending Practices at Large Japanese Banks"; Federal Reserve Board; European Central Bank.

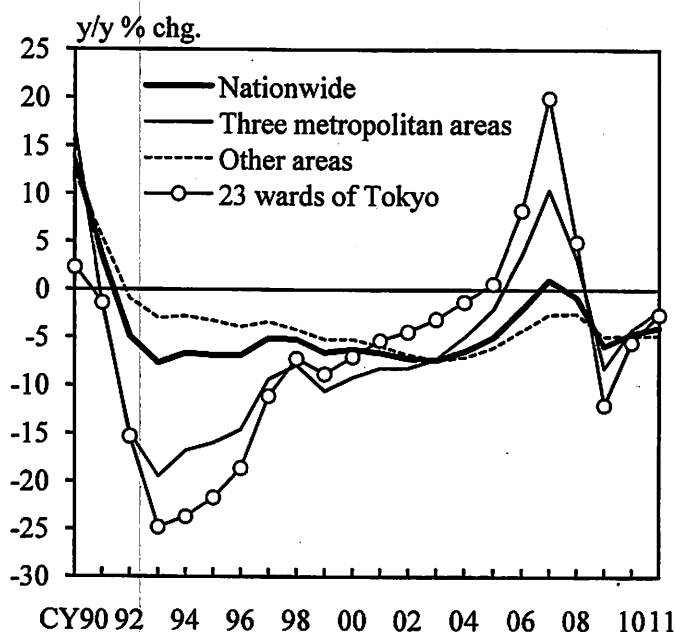
## Land Prices

## (1) Prefectural Land Prices

## (a) Residential Land



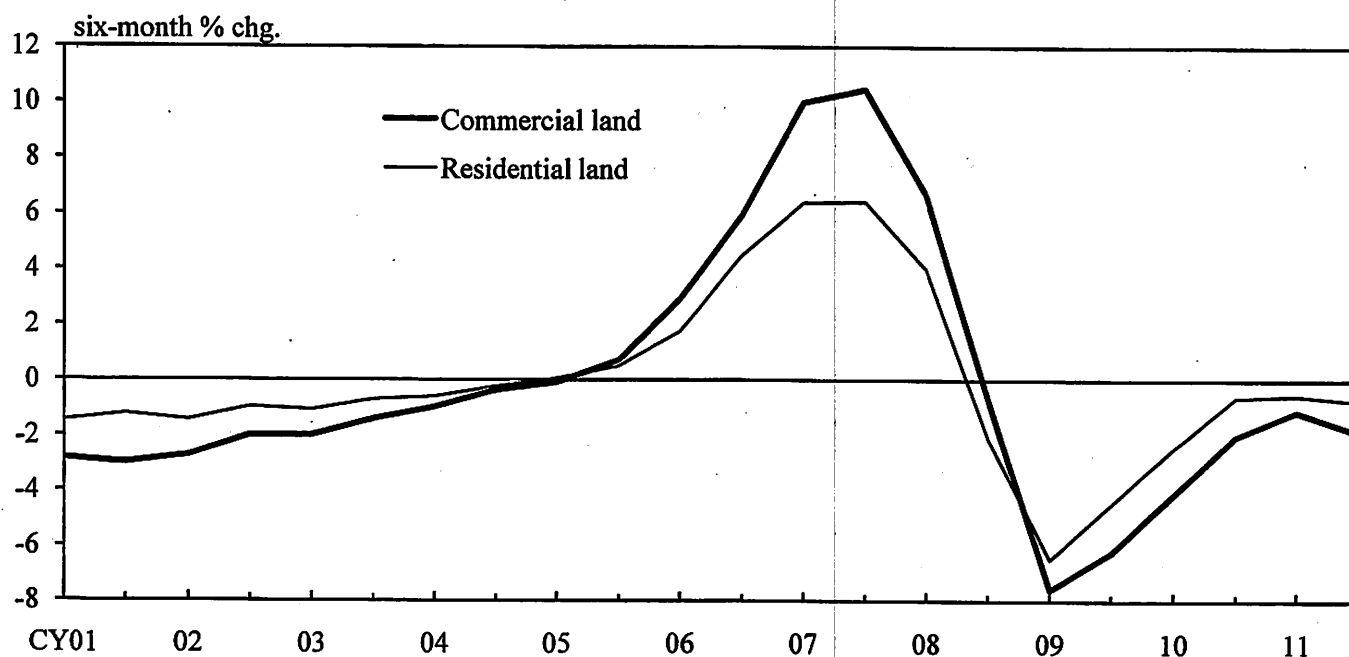
## (b) Commercial Land



Notes: 1. Figures are as of July 1.

2. Three metropolitan areas: the Tokyo area (Tokyo, Kanagawa, Saitama, Chiba, and Ibaraki prefectures), the Osaka area (Osaka, Hyogo, Kyoto, and Nara prefectures), and the Nagoya area (Aichi and Mie prefectures). Other areas: other than the three metropolitan areas.

## (2) Land Prices in the 23 Wards of Tokyo



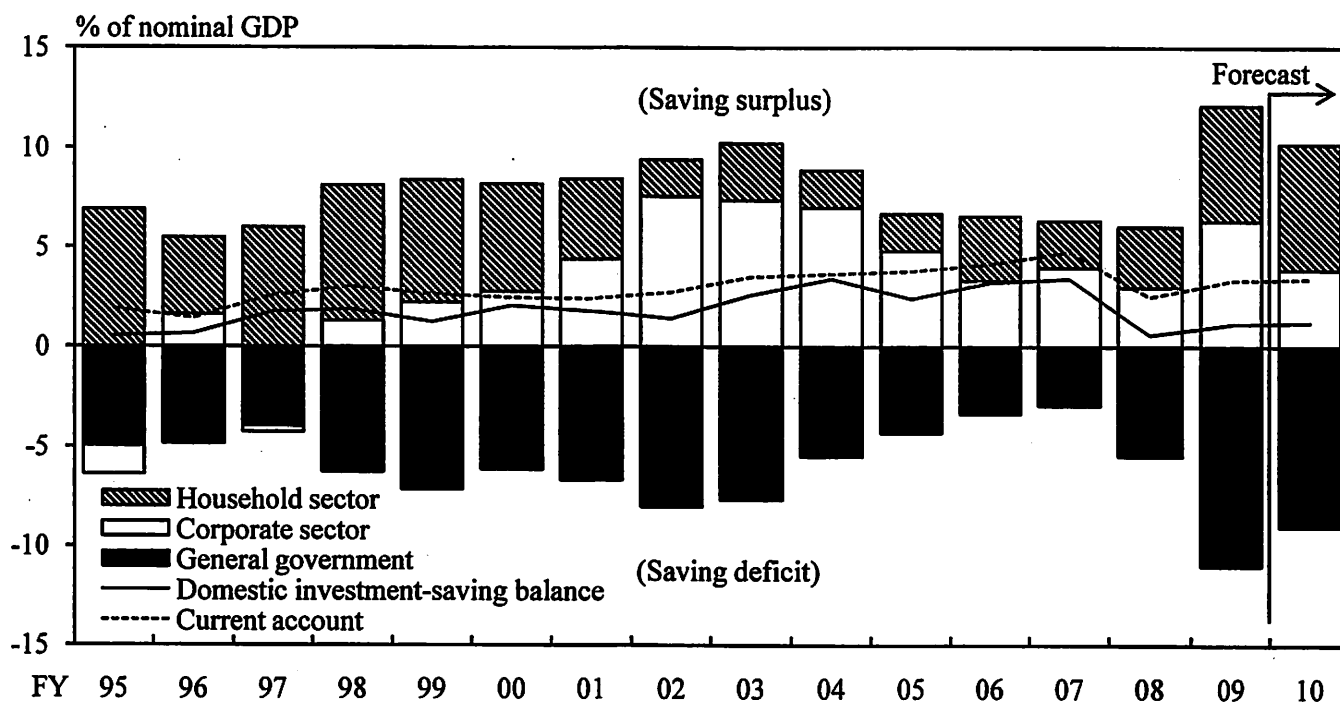
Note: Figures in the chart are six-month percentage changes in land prices available in both "Public Notice of Land Prices" and "Land Price Survey by Prefectural Governments" (residential: 48 points; commercial: 37 points).

Source: Ministry of Land, Infrastructure, Transport and Tourism, "Public Notice of Land Prices," "Land Price Survey by Prefectural Governments."



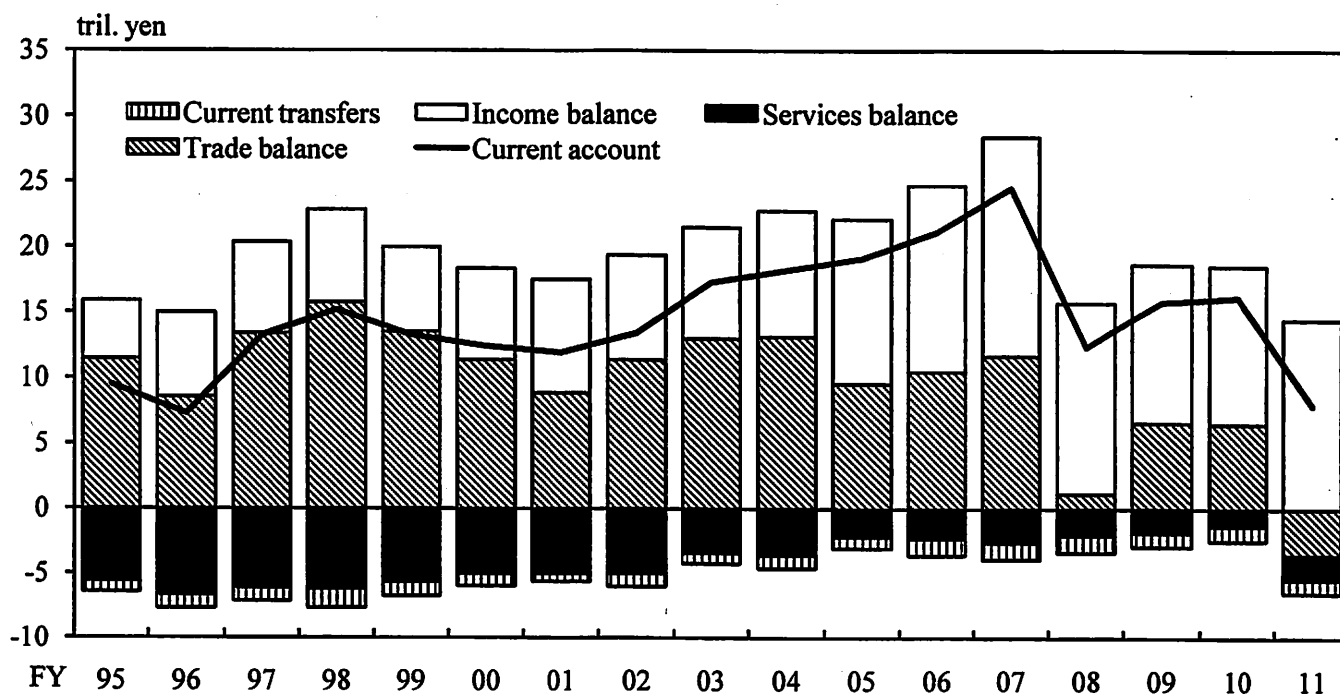
## Investment-Saving Balance

## (1) Investment-Saving Balance



Note: Figures for General government are estimated by the Research and Statistics Department, Bank of Japan. For the estimation procedure, see Chart 25 in "Outlook for Economic Activity and Prices (April 2009)." For the forecast of fiscal 2010, "Economic and Fiscal Projections for Medium to Long Term Analysis (August 2011)" is referred to for the general government, and nominal disposable income estimated in Chart 47 is used for the household sector.

## (2) Current Account

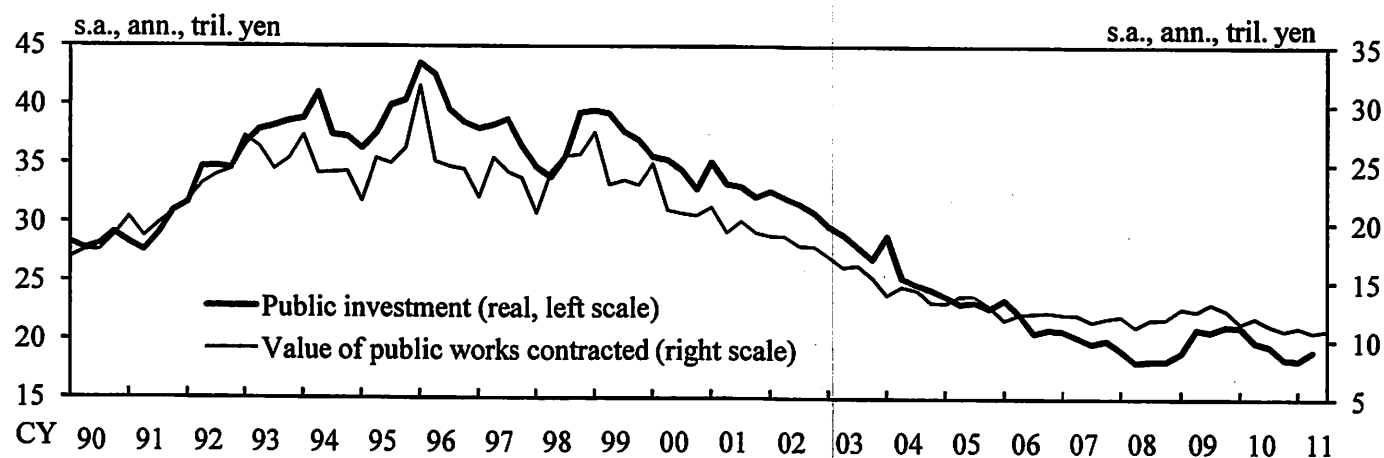


Note: Figures for fiscal 2011 are April-August averages in annual amount.

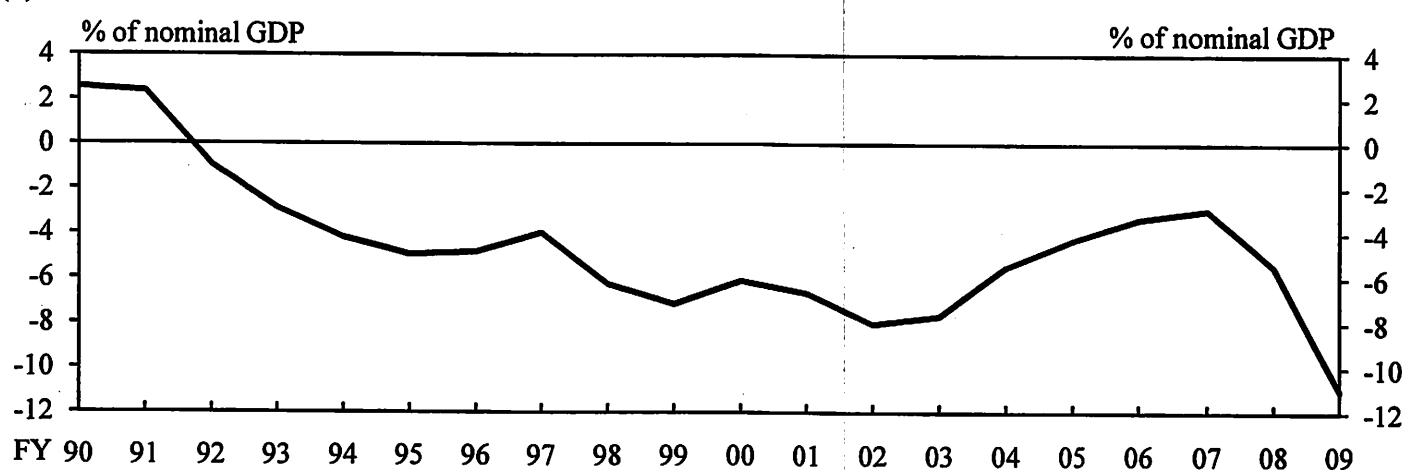
Sources: Cabinet Office, "National Accounts," "Economic and Fiscal Projections for Medium to Long Term Analysis"; Ministry of Finance and Bank of Japan, "Balance of Payments."

## Public Investment and Government Liabilities

## (1) Public Investment

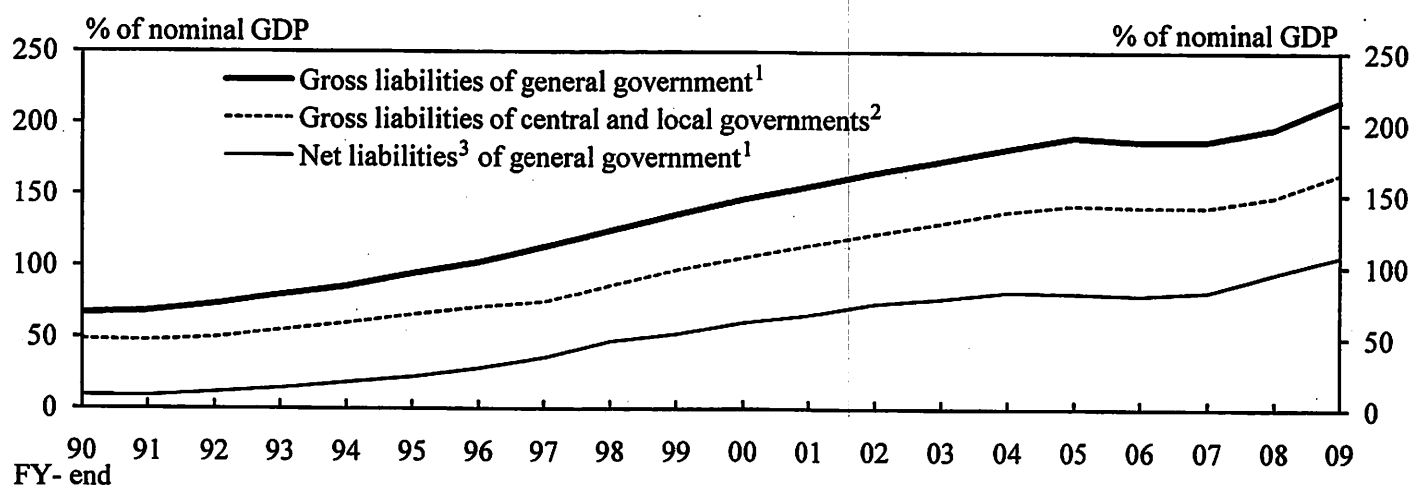


## (2) Fiscal Balance



Note: Figures are estimated by the Research and Statistics Department, Bank of Japan. For the estimation procedure, see Chart 25 in "Outlook for Economic Activity and Prices (April 2009)."

## (3) Government Liabilities



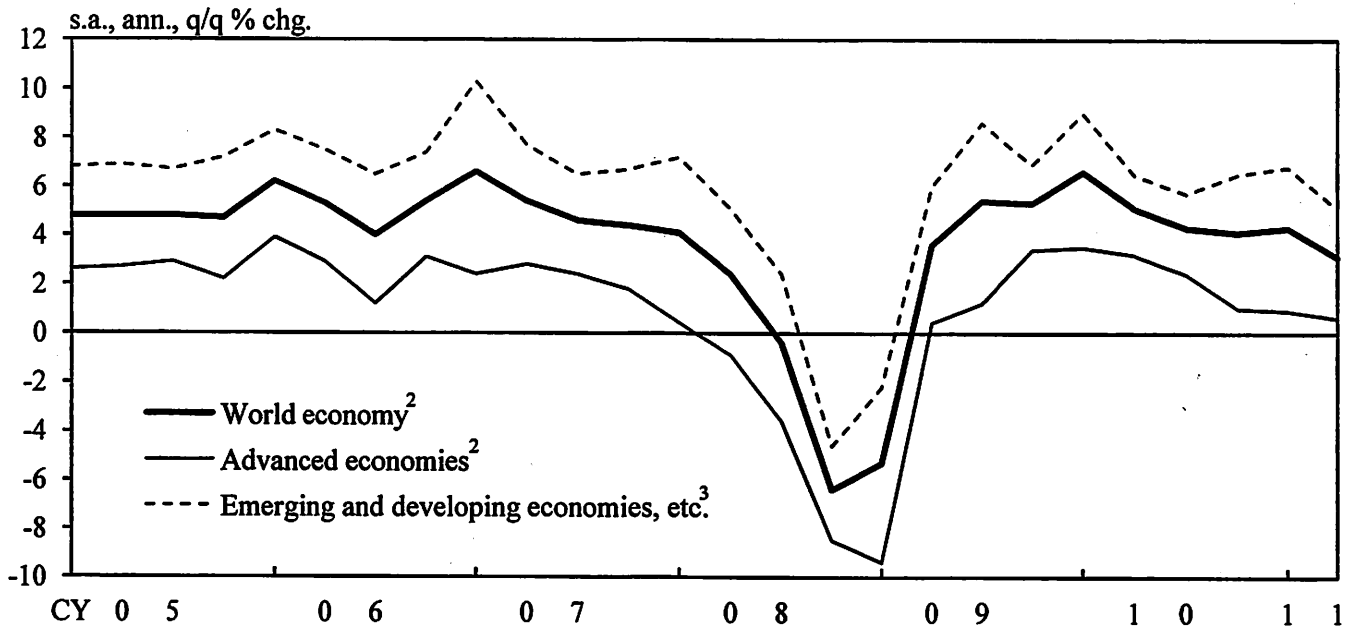
Notes: 1. Consisting of the central government, local governments, and social security funds.

2. Outstanding debt in "Economic and Fiscal Projections for Medium to Long Term Analysis (August 2011)."

3. Gross liabilities minus financial assets.

Sources: Cabinet Office, "National Accounts," "Economic and Fiscal Projections for Medium to Long Term Analysis"; East Japan Construction Surety, etc., "Public Works Prepayment Surety Statistics."

## Overseas Economies

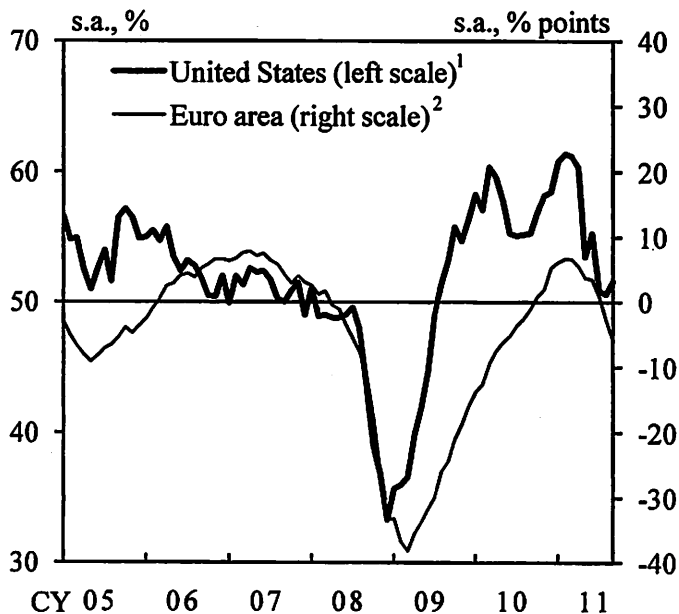
(1) Real GDP Growth Rates of the World Economy<sup>1</sup>

Notes: 1. Figures are calculated using GDP based on purchasing power parity (PPP) shares of the world total from the IMF.

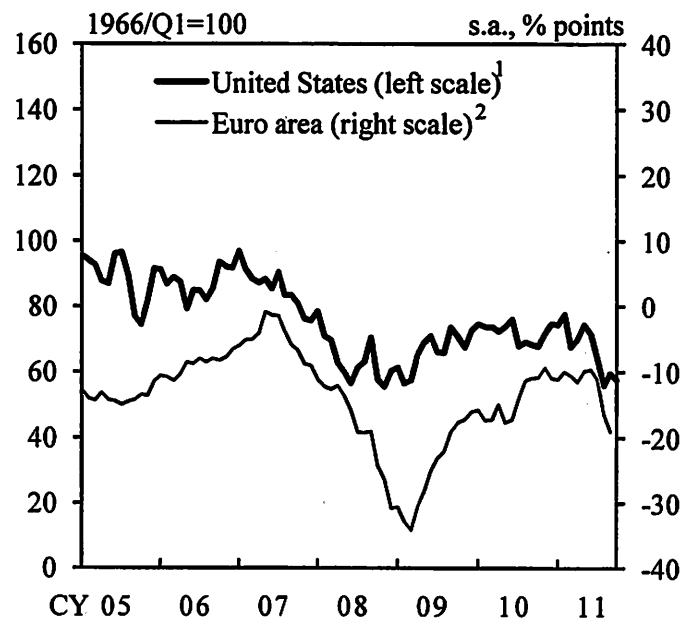
2. World economy covers 184 countries. Advanced economies are the United States, euro area (17 countries), United Kingdom, and Japan.

3. Including estimated quarterly growth rates based on historical annual data of real GDP growth rates.

## (2) Business Confidence



## (3) Consumer Confidence



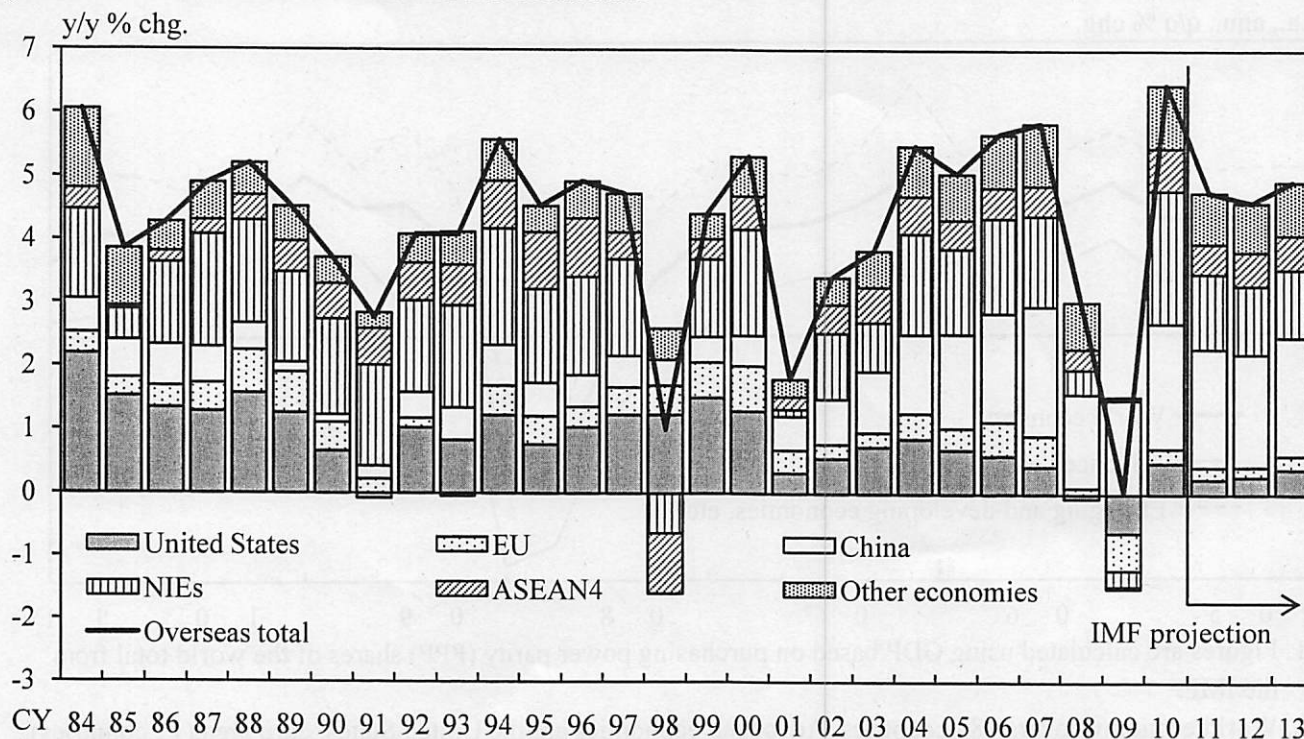
Notes: 1. Figures for business confidence are Manufacturing ISM Report on Business, and those for consumer confidence are the Thomson Reuters/University of Michigan Consumer Sentiment Index. A reading of 50 percent generally indicates a turning point between economic expansion and decline in the manufacturing sector.

2. Taken from the Economic Sentiment Indicator of the European Commission. Figures for business confidence are the Industrial Confidence Indicator and those for consumer confidence are the Consumer Confidence Indicator. A reading of 0 percentage points generally indicates a turning point between economic expansion and decline.

Sources: IMF, "World Economic Outlook"; European Commission; Thomson Reuters; HAVAR, etc.

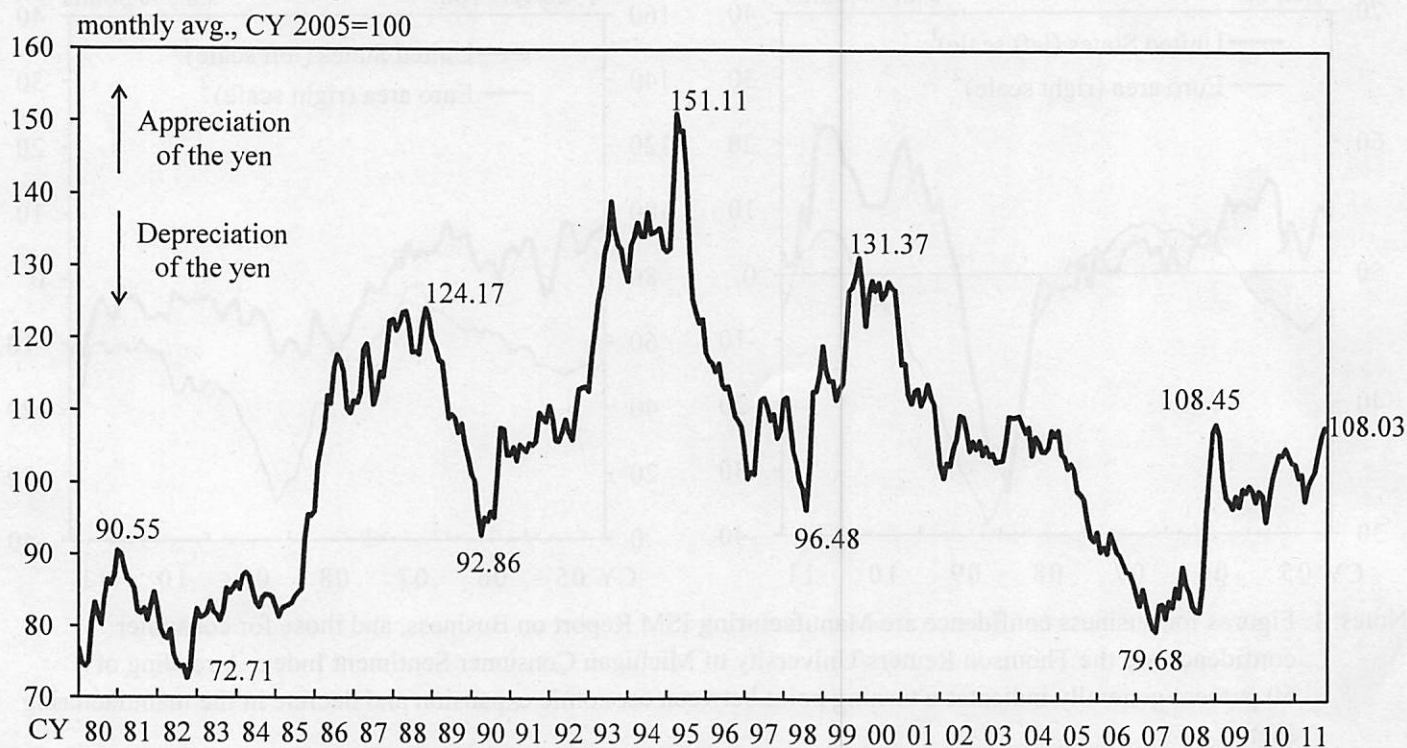
## Overseas Economies and Real Effective Exchange Rate

### (1) Real GDP Growth Rates of Overseas Economies



Note: Real GDP growth rate of the overseas total is the weighted average of real GDP growth rates by value of exports from Japan to each economy.

### (2) Real Effective Exchange Rate of the Yen

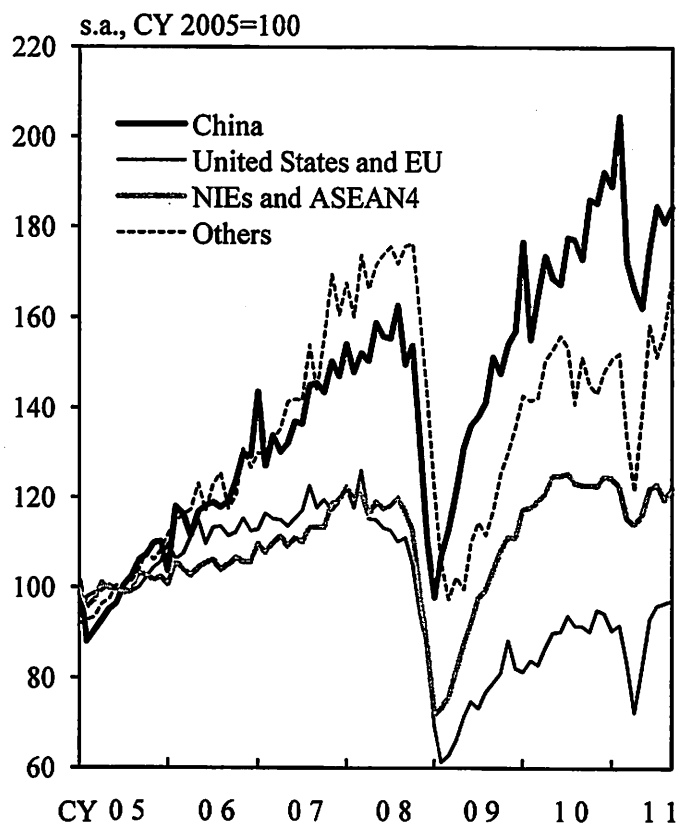


Note: The real effective exchange rate is based on the broad index of the BIS real effective exchange rate, and that prior to 1994 is calculated using the narrow index. The figure for October 2011 is calculated using the Bank of Japan's nominal effective exchange rate of the yen.

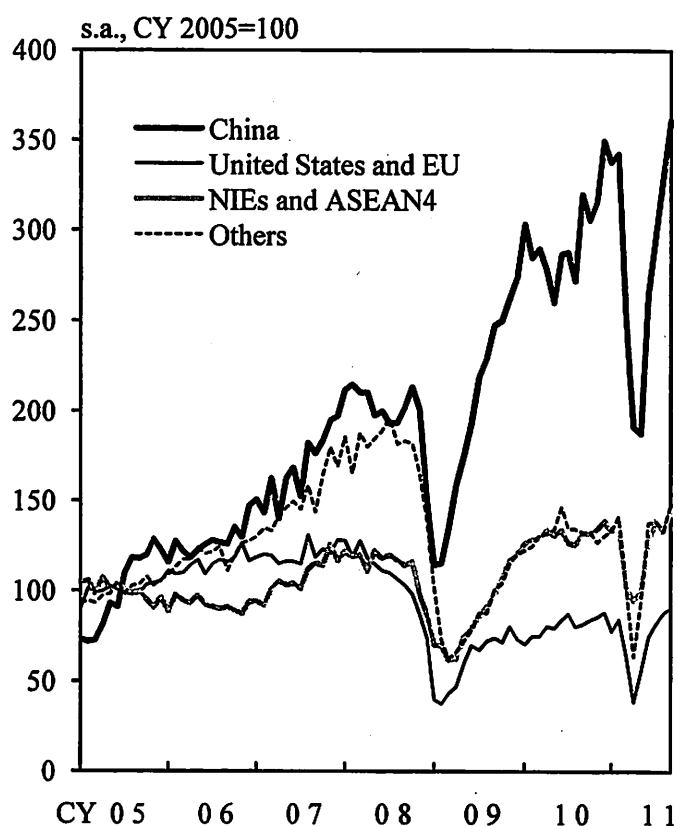
Sources: IMF, "World Economic Outlook"; Ministry of Finance, "Trade Statistics"; Bank for International Settlements; Bank of Japan.

## Real Exports by Goods

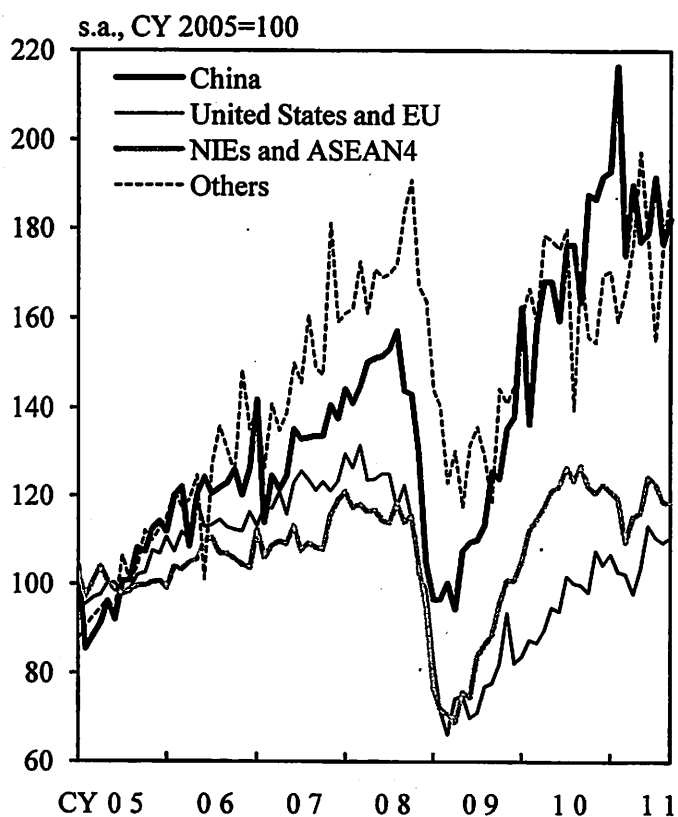
(1) All Goods



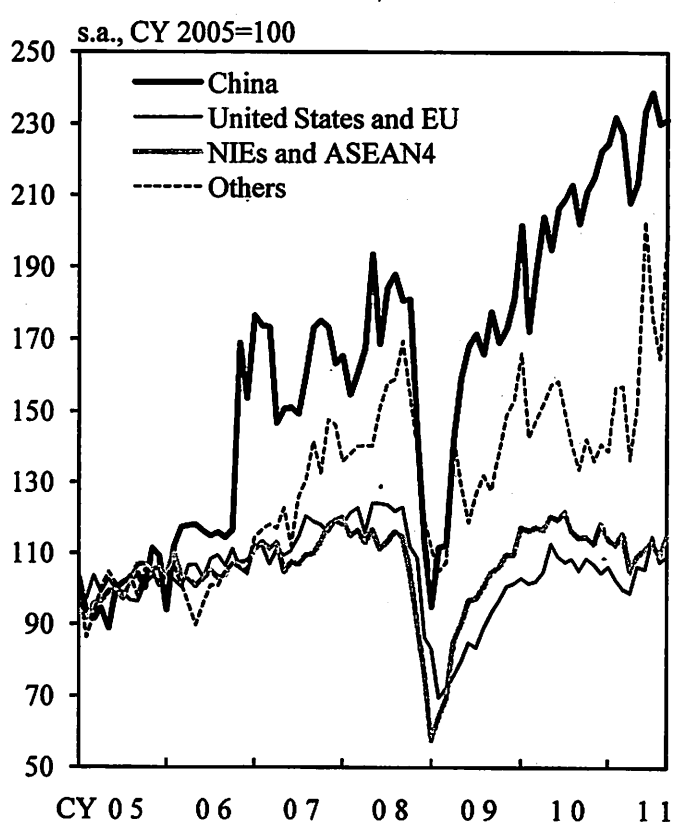
(2) Motor Vehicles and Related Goods



(3) Capital Goods and Parts

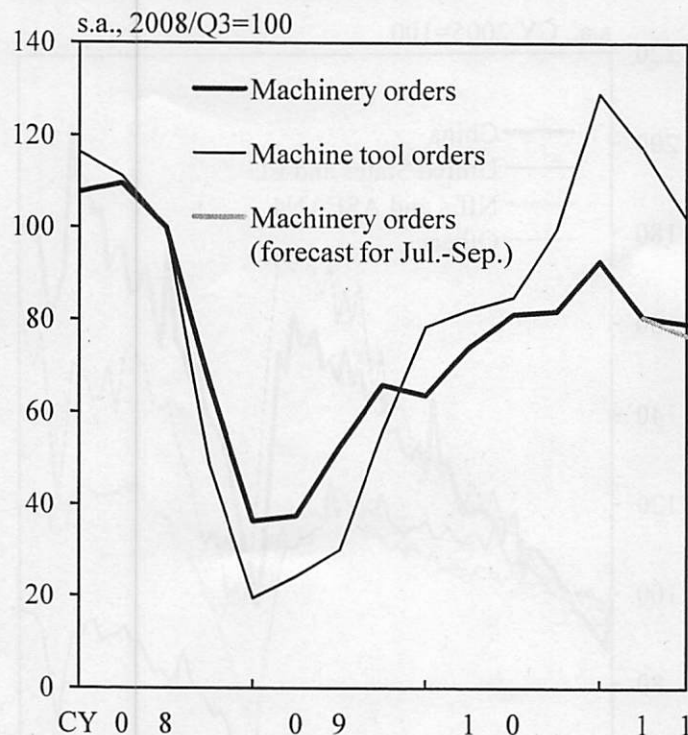
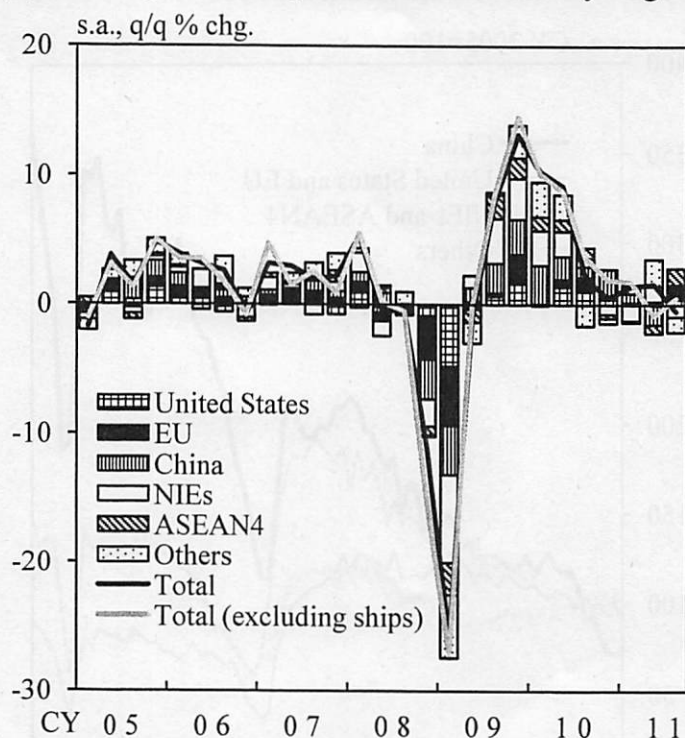


(4) IT-Related Goods



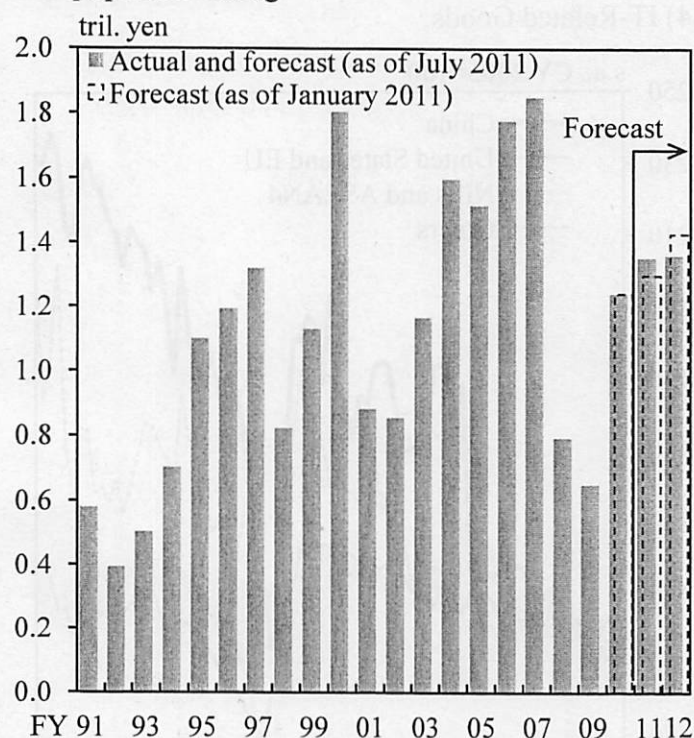
# Environment Surrounding Exports of Capital Goods

(1) Real Exports of Capital Goods and Parts by Region (2) Machinery Orders from Overseas

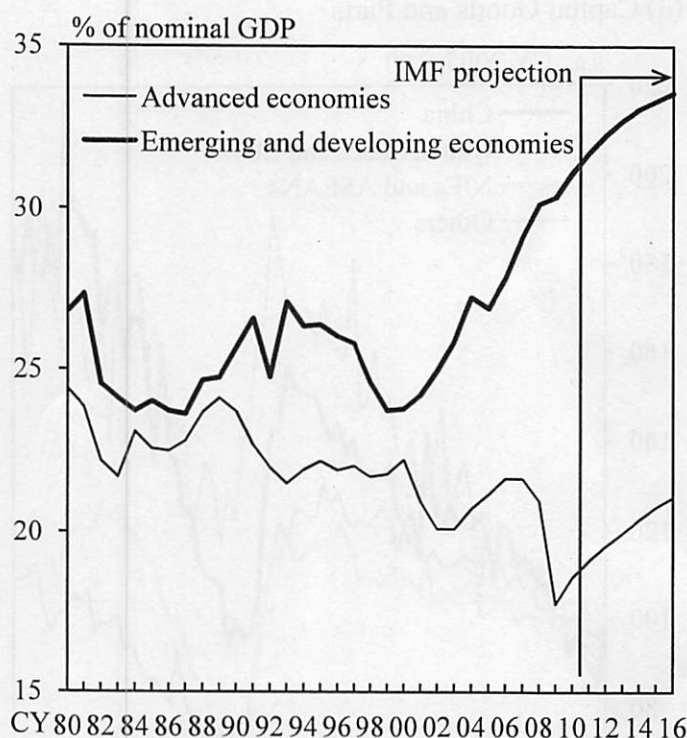


Note: Figures for machinery orders for 2011/Q3 are July-August averages converted into quarterly amount.

(3) Japanese Semiconductor Manufacturing Equipment Billing



(4) Total Investment Share



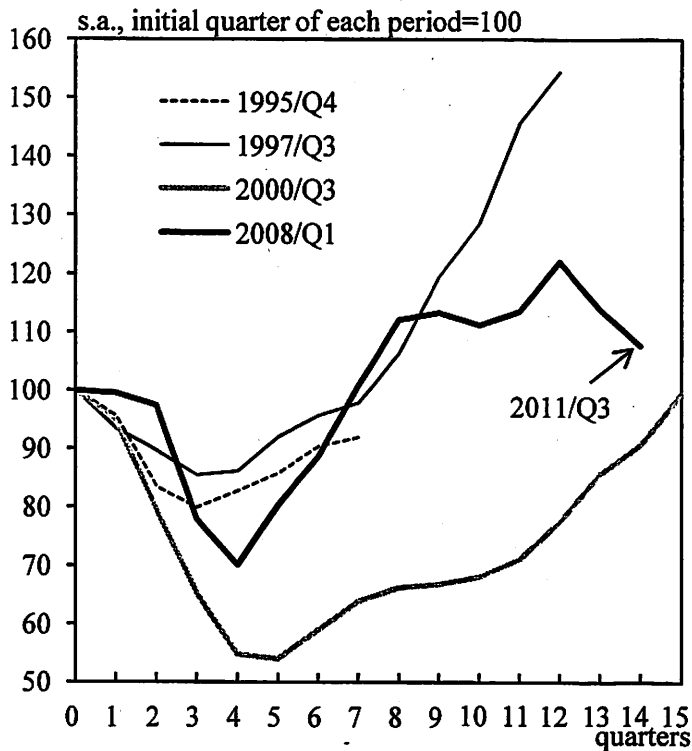
Note: Total investment share is calculated as nominal total investment divided by nominal GDP.

Sources: Ministry of Finance, "Trade Statistics"; Bank of Japan, "Corporate Goods Price Index"; Cabinet Office, "Orders Received for Machinery"; Japan Machine Tool Builders' Association, "Machine Tool Statistics"; SEAJ, "Market Forecast Report - Semiconductor and FPD Manufacturing Equipment -"; IMF, "World Economic Outlook."

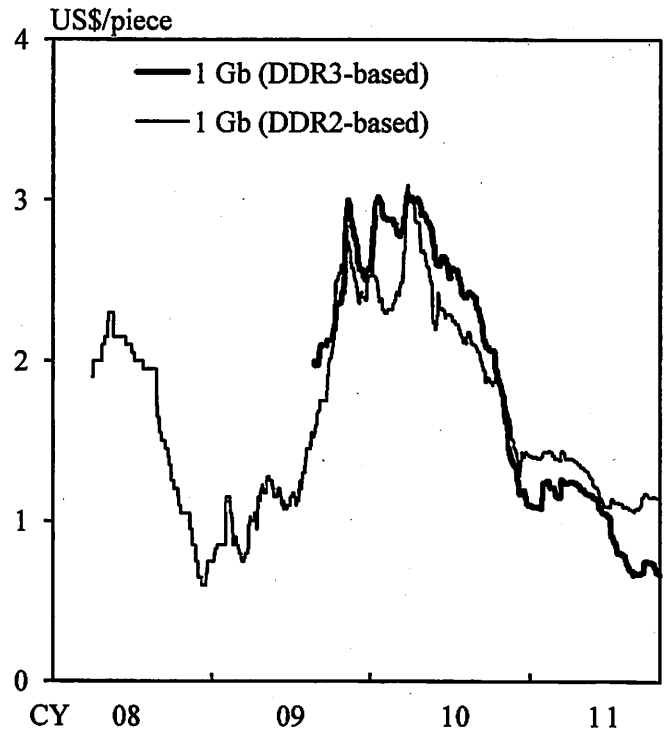


## Cycle of Global Demand for IT-Related Goods

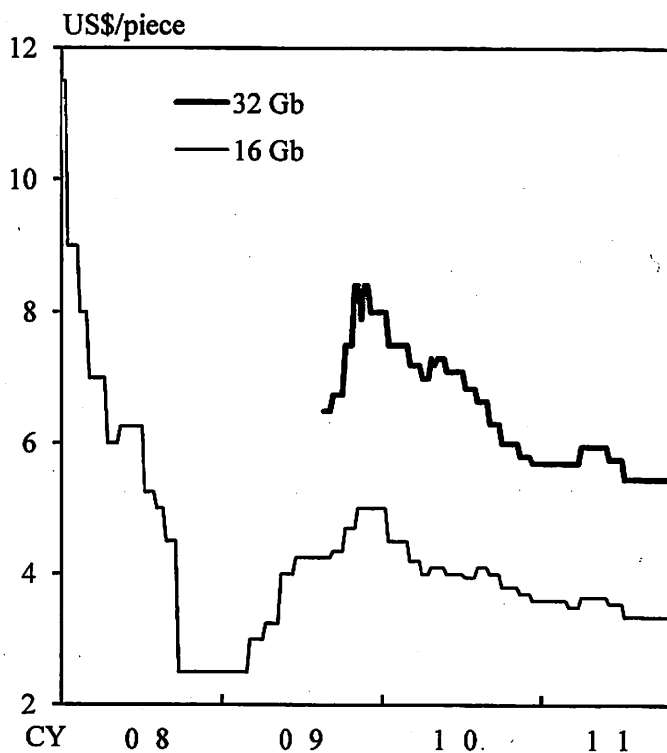
- (1) Comparisons of World Semiconductor Shipments in Business Cycles  
(2) DRAM Spot Prices



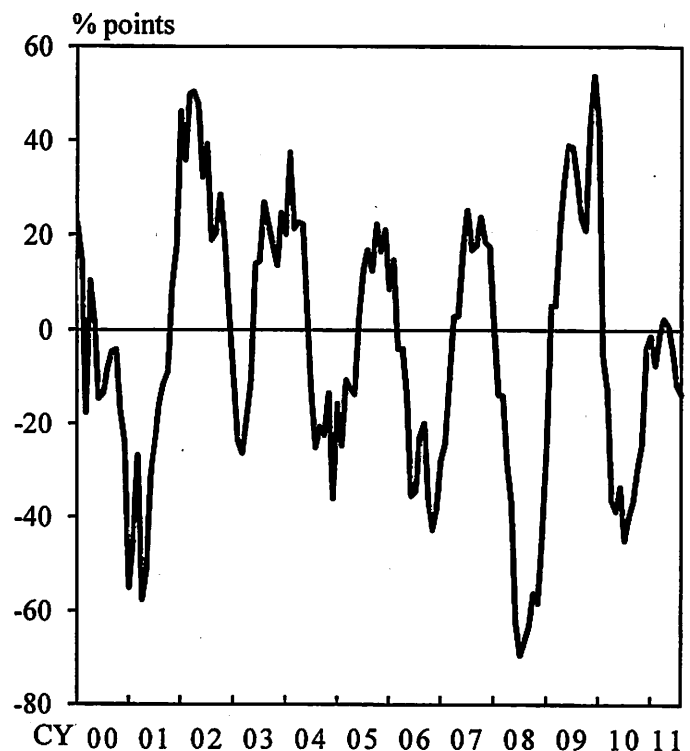
Note: Figures for 2011/Q3 are July-August averages converted into a quarterly amount.



- (3) NAND Flash Prices



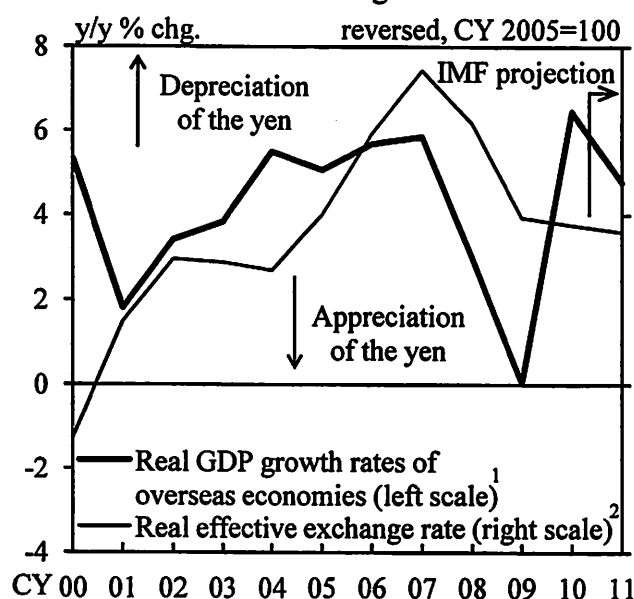
- (4) Shipment-Inventory Balance of IT-Related Goods in Korea



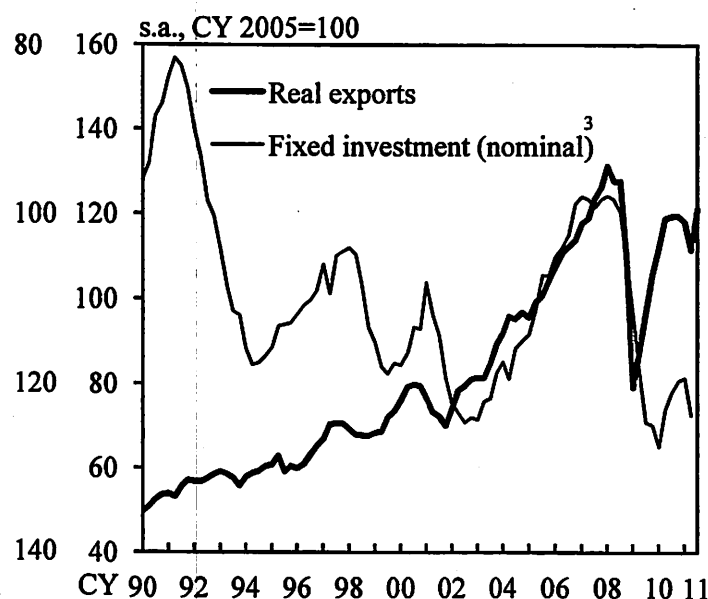
Note: Year-on-year changes in shipments minus those in inventories.

## Environment Surrounding Exports

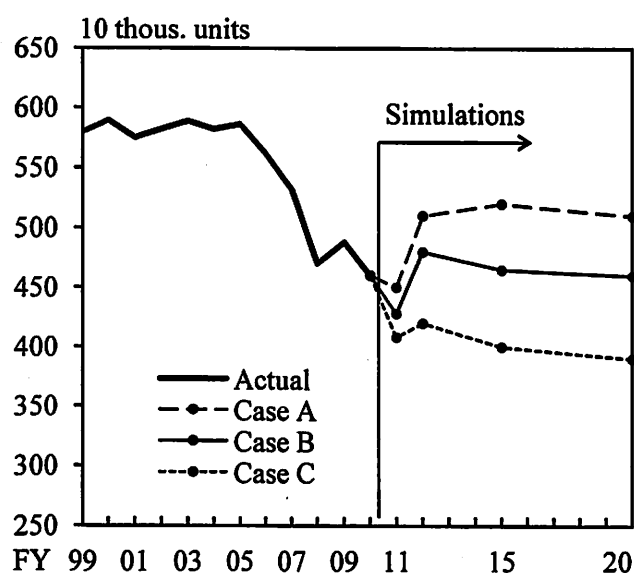
(1) Real GDP Growth Rates of Overseas Economies and Real Effective Exchange Rate of the Yen



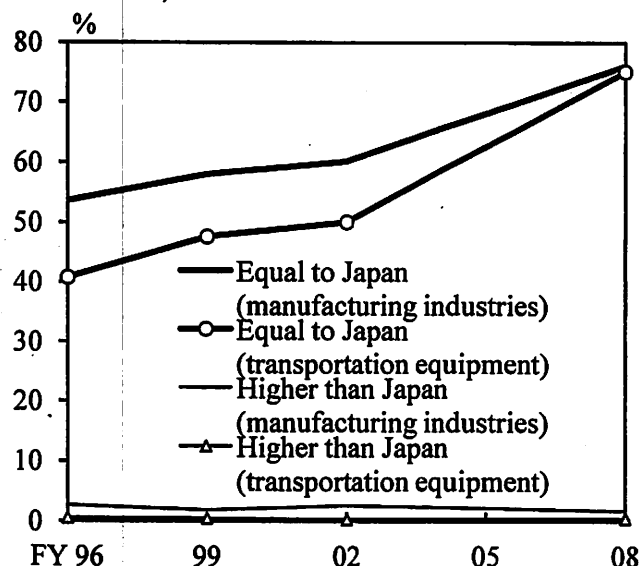
(2) Real Exports and Fixed Investment



(3) Domestic Demand for Automobiles<sup>4</sup>



(4) Technological Catch-Up of Overseas Affiliates<sup>5</sup>  
(Survey of Technological Levels of Overseas Affiliates)



Notes: 1. Figures are the weighted averages of real GDP growth rates by values of exports from Japan to each economy.

2. Based on the broad index of the BIS real effective exchange rate.

Figures for 2011 are January-September averages.

3. Based on all-size enterprises and manufacturing.

4. Case A: The sales fall in the first half of 2011 is supposed to be overcompensated. Case B: The moderate scenario. Case C: The sales fall in the first half of 2011 is too deep to be compensated in the rest of the year.

For more details, see "Automobile Dealers Vision (2011)" by the Japan Automobile Dealers Association.

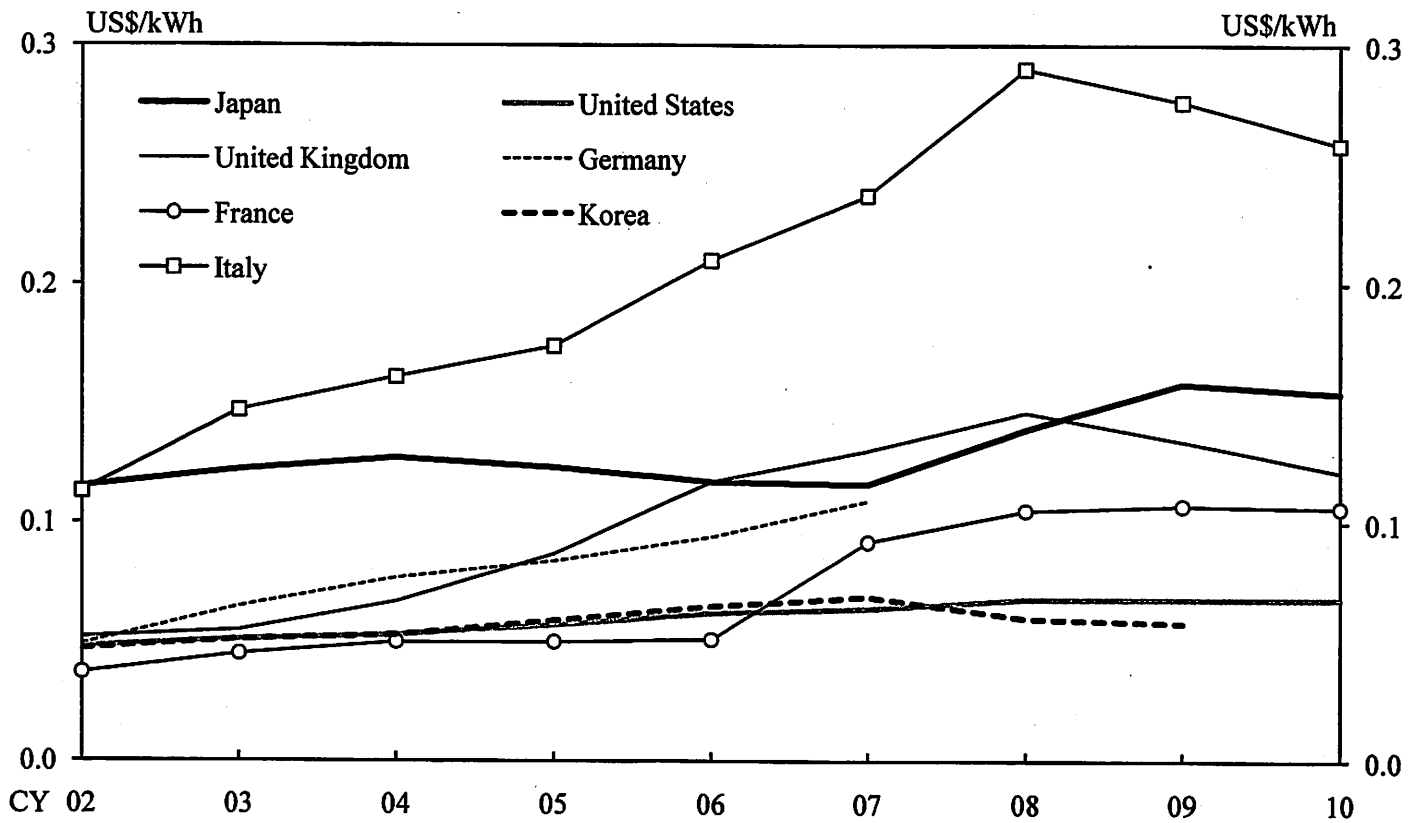
5. Figures for fiscal 2005 are calculated based on a linear interpolation between fiscal 2002 and fiscal 2008.

Sources: IMF, "World Economic Outlook"; Bank for International Settlements; Ministry of Finance, "Trade Statistics," "Financial Statements Statistics of Corporations by Industry, Quarterly"; Bank of Japan, "Corporate Goods Price Index"; Japan Automobile Dealers Association, "Domestic Sales of Automobiles," "Automobile Dealers Vision (2011)"; Japan Mini Vehicles Association, "Sales of Mini Vehicles"; Ministry of Economy, Trade and Industry, "Survey of Overseas Business Activities."

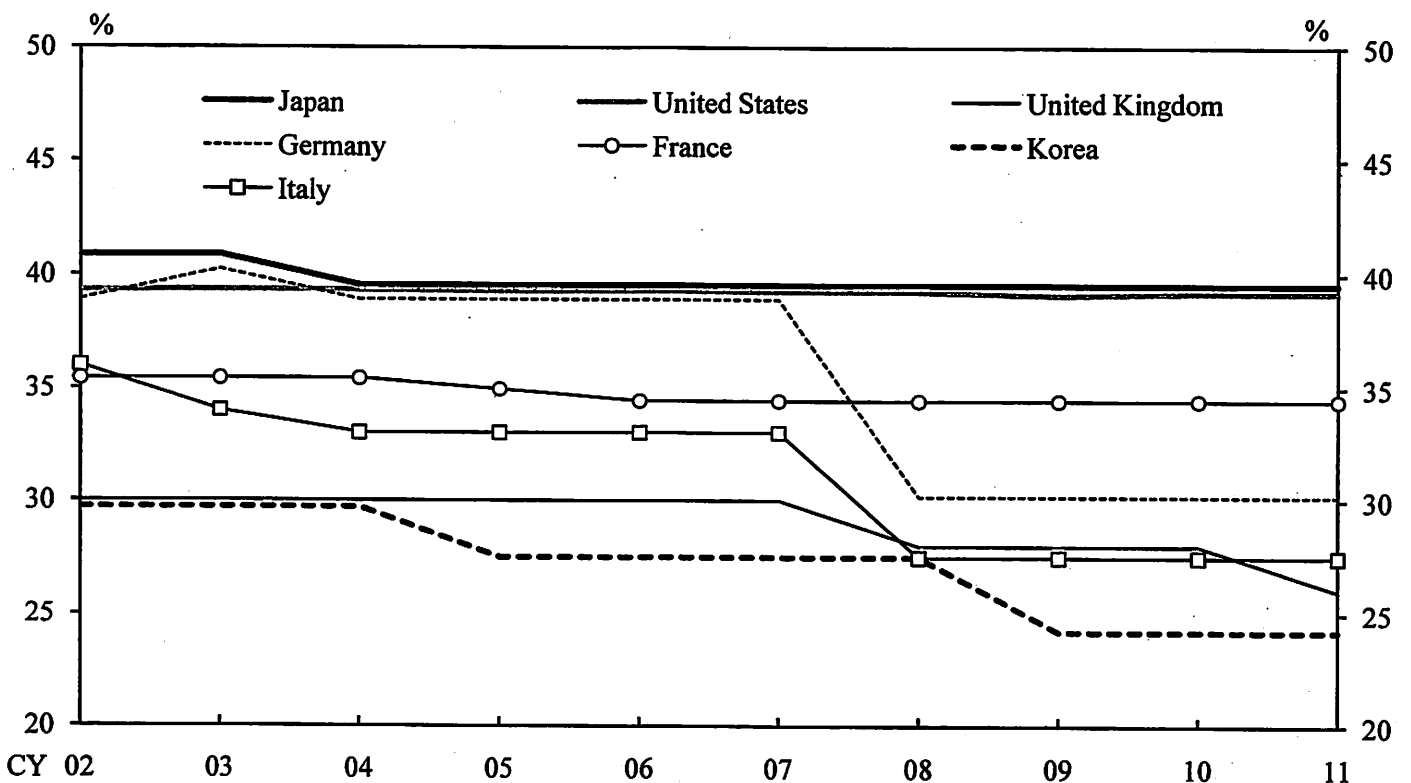


## Environment Surrounding Production in Japan

### (1) Comparisons of Electricity Prices for Industry

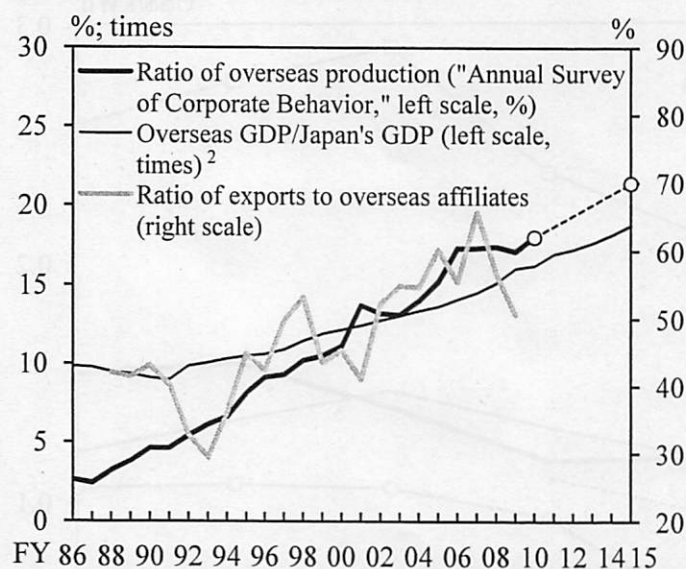
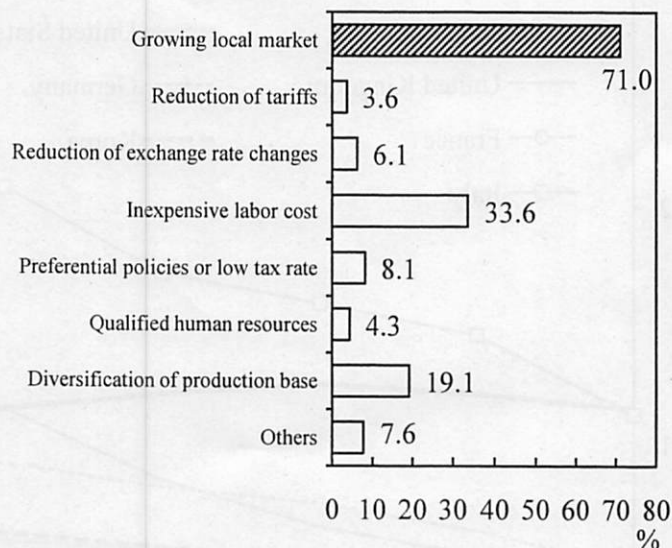
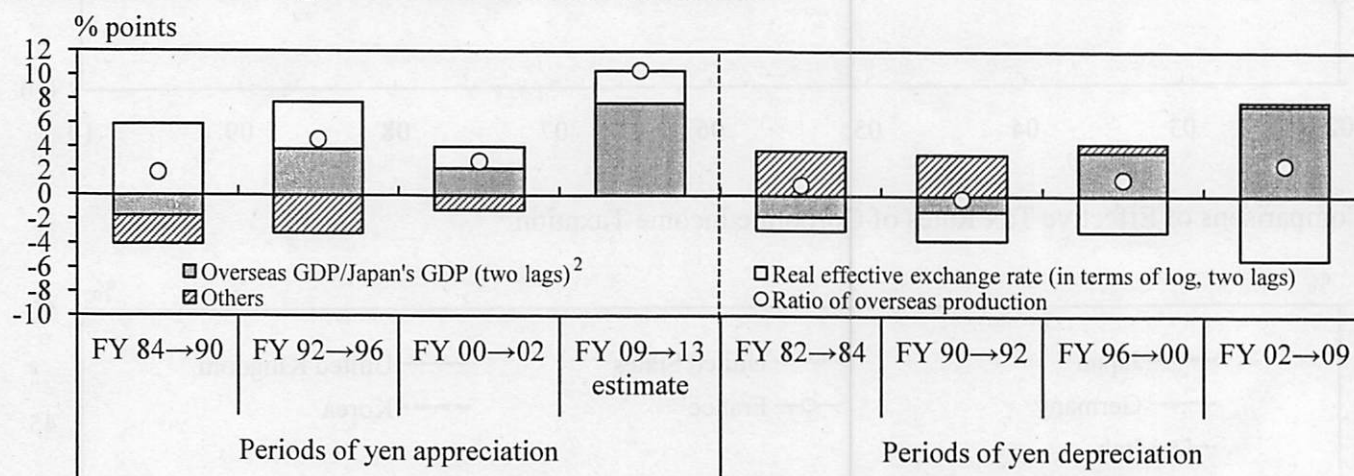


### (2) Comparisons of Effective Tax Rates of Corporate Income Taxation



Sources: IEA, "Energy Prices & Taxes, 2nd Quarter 2011"; OECD.

## Overseas Production (1)

(1) Expansion of Overseas Market  
and Ratio of Overseas Production<sup>1</sup>(2) Reasons for Overseas Business Fixed Investment<sup>3</sup>  
(Up to Two Answers Allowed)(3) Breakdown of Changes in Ratio of Overseas Production<sup>4,5</sup>

$$\begin{aligned} \text{Ratio of overseas production} &= -86.7 + 3.2 \times \text{overseas GDP/Japan's GDP (two lags)} \\ &\quad (-9.2) (16.9) \\ &\quad + 13.3 \times \log \text{ of real effective exchange rate (two lags)} \\ &\quad (6.9) \end{aligned}$$

$R^2=0.92$ , standard error of regression: 1.56

Notes: 1. For the ratio of overseas production ("Annual Survey of Corporate Behavior"), the figure for fiscal 2010 is the forecast and figures from fiscal 2011 are linearly interpolated by using the fiscal 2015 outlook.

2. Taken from the "World Economic Outlook (calendar year basis)." Figures from 2010 are estimated by the IMF.

3. Taken from the "Opinion Poll on Corporate Behavior" in the July 2011 survey.

4. Figures are estimated by the Research and Statistics Department, Bank of Japan.

The estimation periods are fiscal 1982-2009. Figures in parentheses are  $t$ -values.

5. Ratio of overseas production = overseas sales / (overseas sales + domestic sales)  $\times$  100

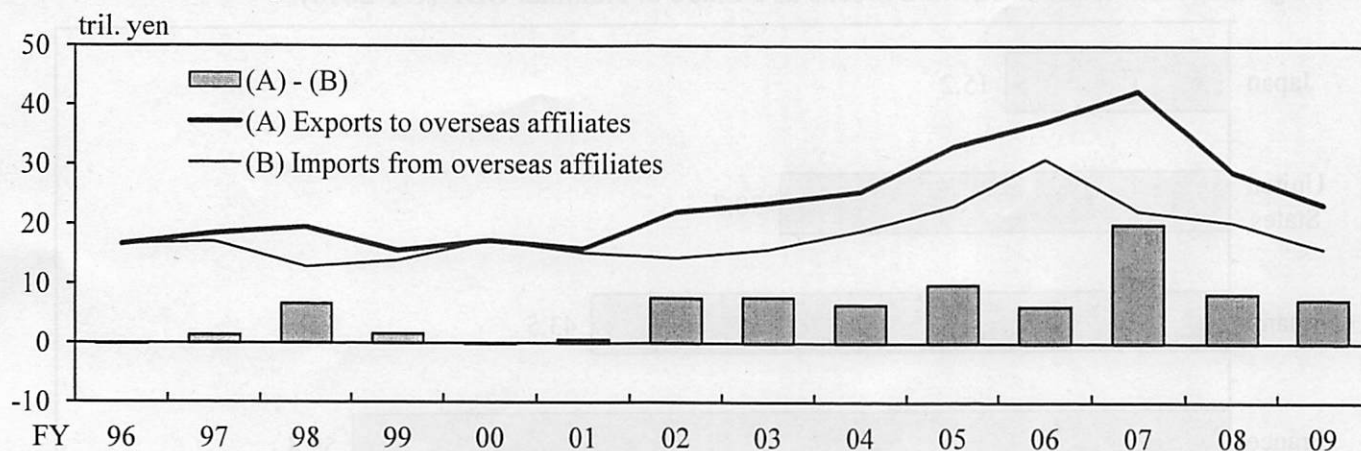
The figure of the real effective exchange rate for fiscal 2011 is the April-September average.

6. All figures are for manufacturing industry.

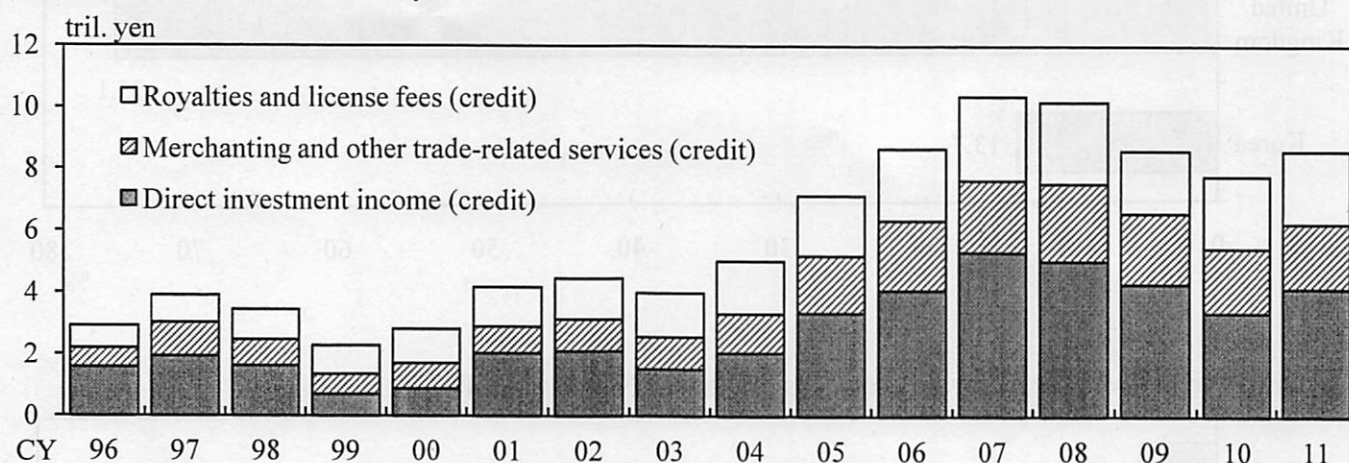
Sources: Ministry of Economy, Trade and Industry, "Survey of Overseas Business Activities"; IMF, "World Economic Outlook"; Cabinet Office, "Annual Survey of Corporate Behavior"; Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Annually"; Development Bank of Japan, "Opinion Poll on Corporate Behavior"; Bank for International Settlements.

## Overseas Production (2)

## (1) Exports to and Imports from Overseas Affiliates

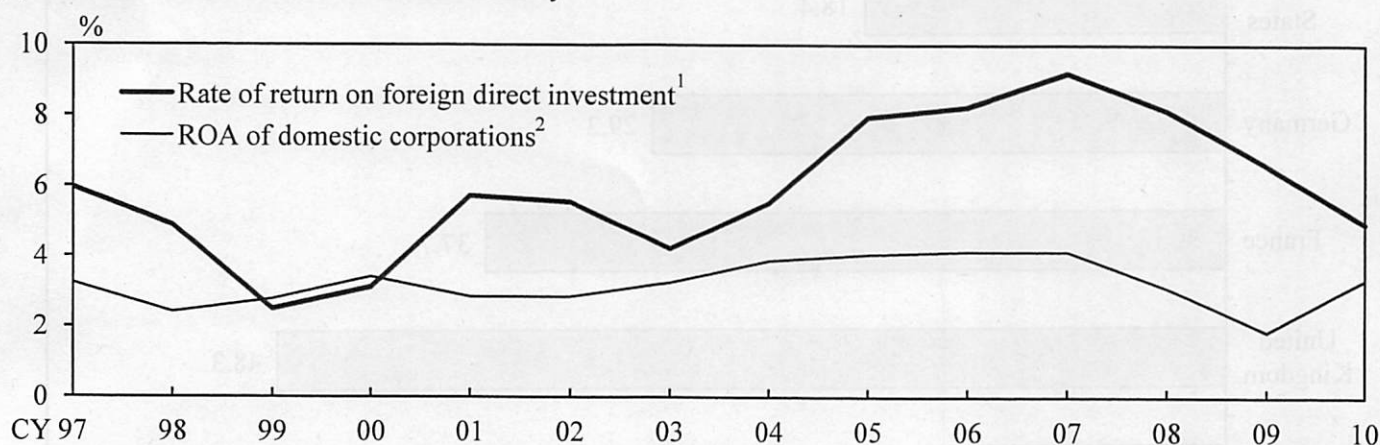


## (2) Income from Overseas Activity



Note: Figures for 2011 are January-August averages in annual amount.

## (3) Rates of Return in and out of the Country



Notes: 1. Figures are calculated as direct investment income (credit) divided by direct investment assets.

2. Figures are calculated as operating profits divided by total assets and four quarterly averages.

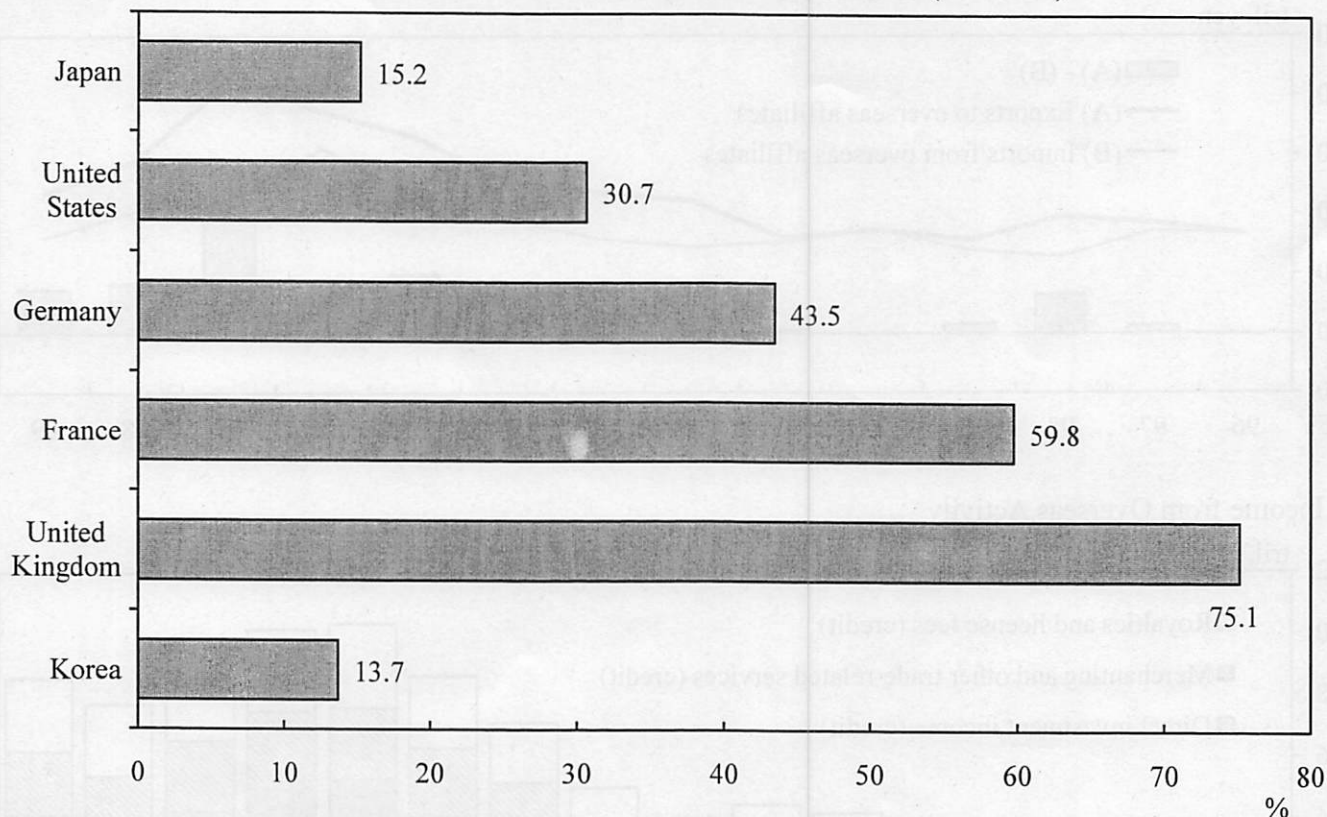
Based on all-size enterprises and all industries. Figures exclude finance and insurance.

Sources: Ministry of Economy, Trade and Industry, "Survey of Overseas Business Activities";  
Ministry of Finance and Bank of Japan, "Balance of Payments";  
Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Quarterly."

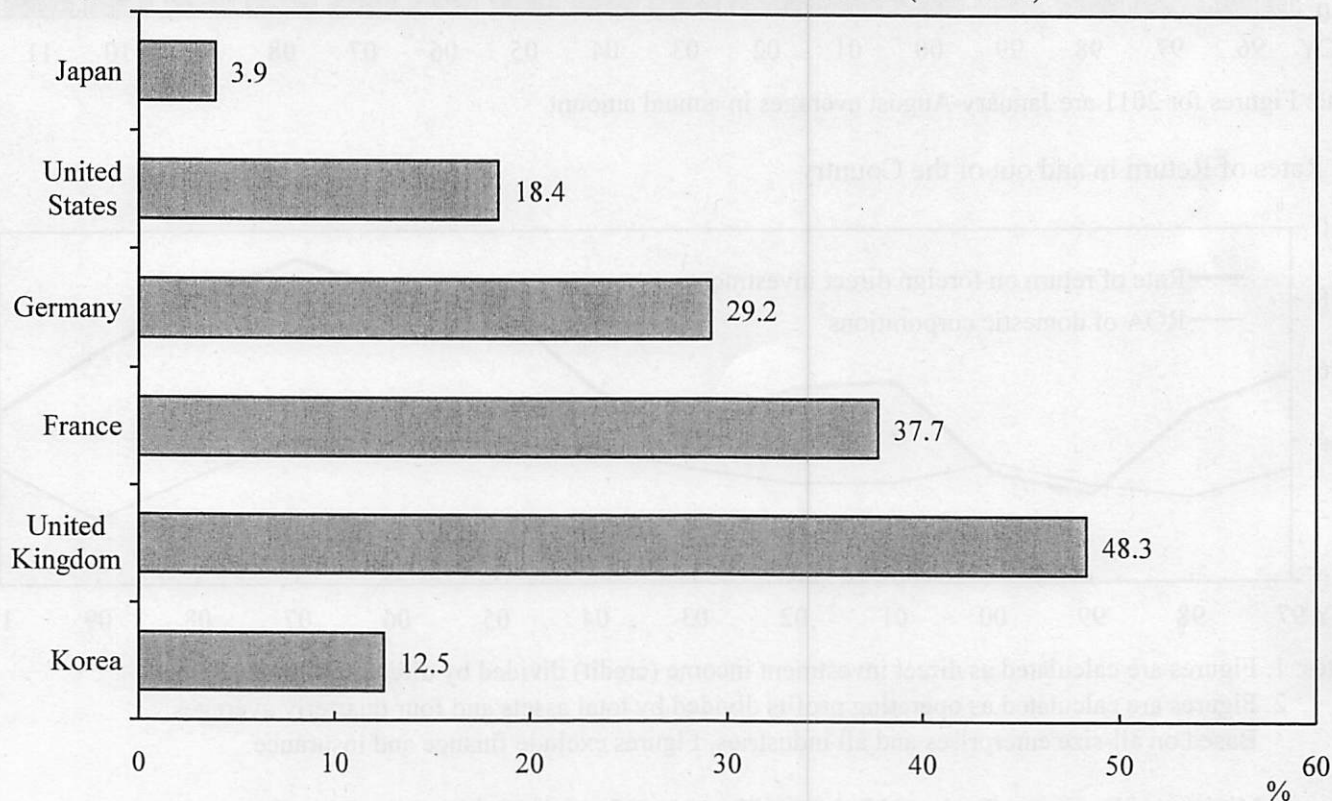


## Foreign Direct Investment Outward and Inward Stocks

(1) Foreign Direct Investment Outward Stocks as a Share of Nominal GDP (CY 2010)

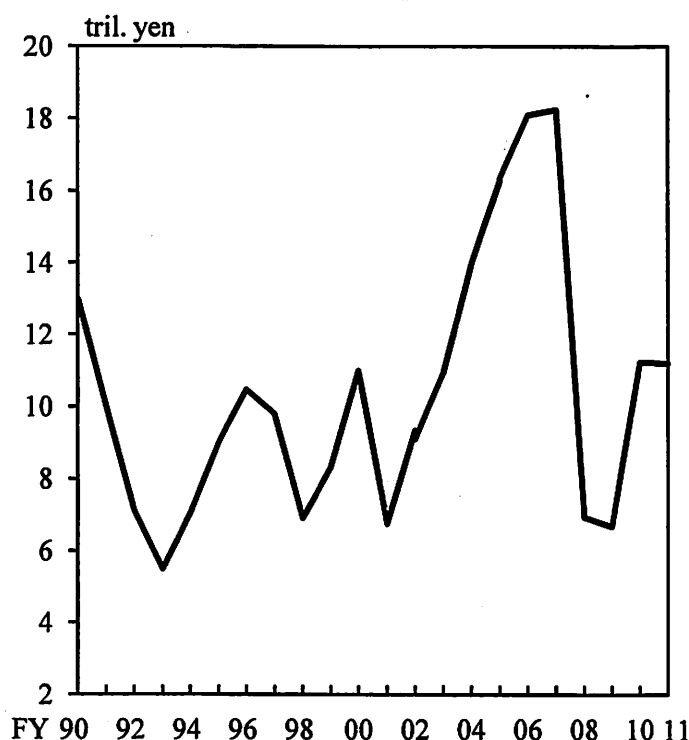


(2) Foreign Direct Investment Inward Stocks as a Share of Nominal GDP (CY 2010)

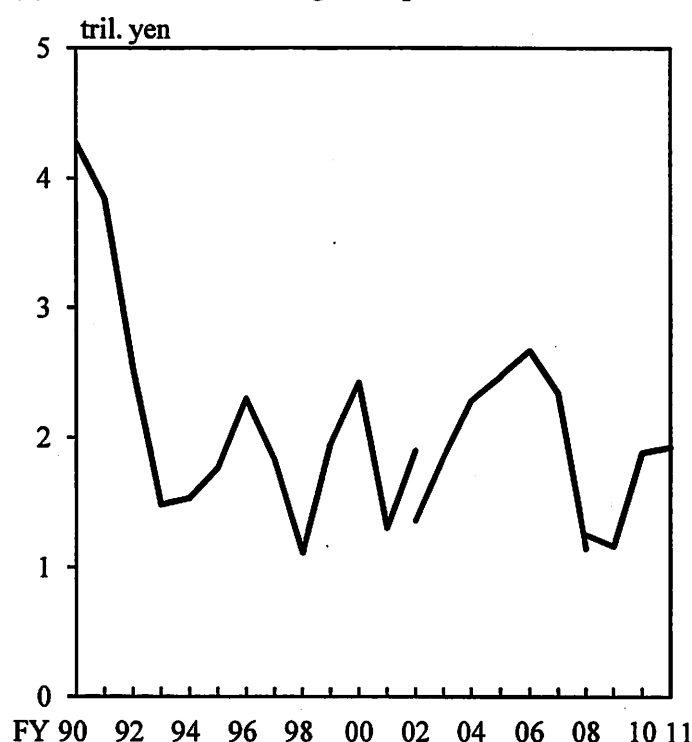


## Corporate Profits

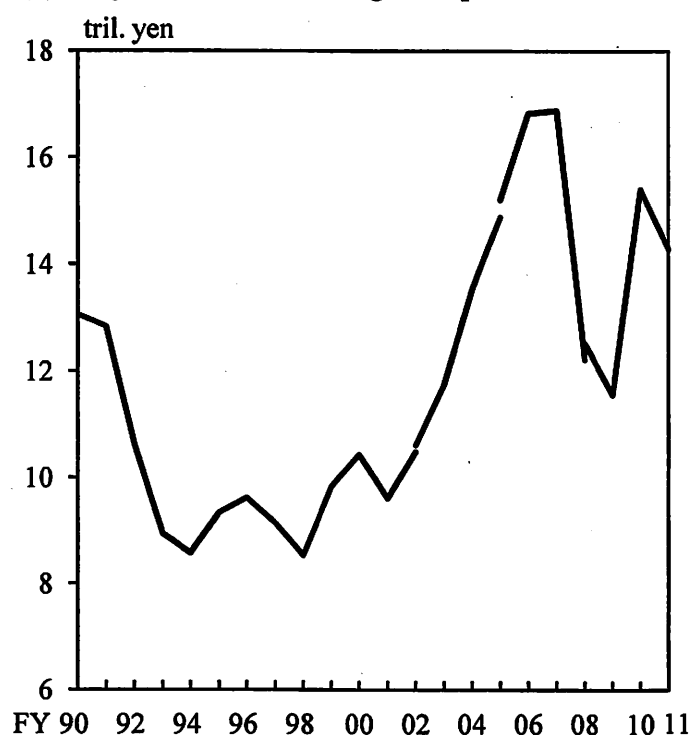
(1) Large Manufacturing Enterprises



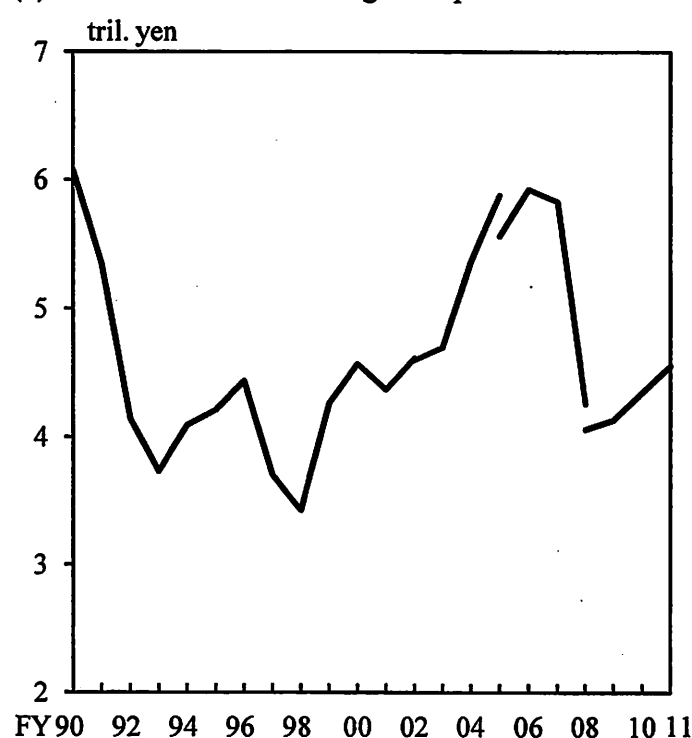
(2) Small Manufacturing Enterprises



(3) Large Nonmanufacturing Enterprises



(4) Small Nonmanufacturing Enterprises



Notes: 1. Based on current profits.

2. Figures for fiscal 2011 are the forecasts in the September 2011 survey.

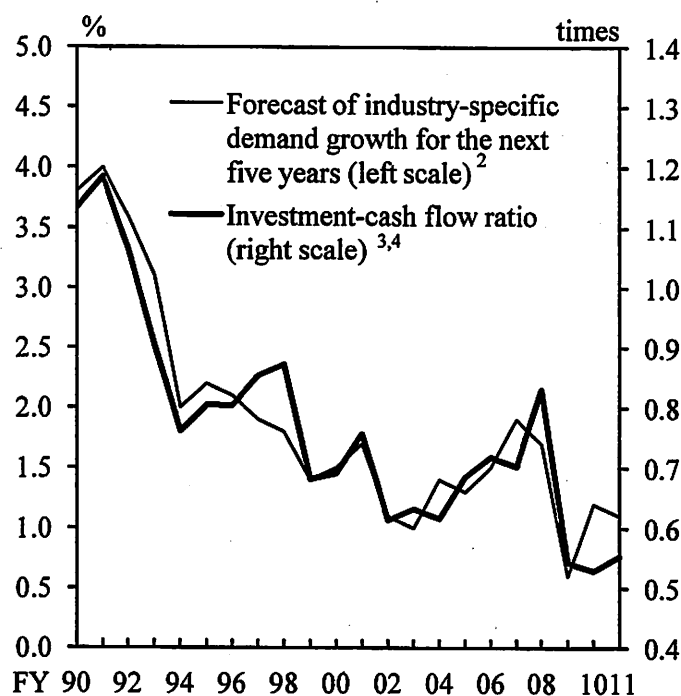
3. In the March 2004 survey, the "Tankan" underwent major revisions, including the addition of new sample enterprises to the survey. In the March 2007 and March 2010 surveys, regular revisions were made to the sample enterprises. The data show some discontinuities that coincided with these timings.

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

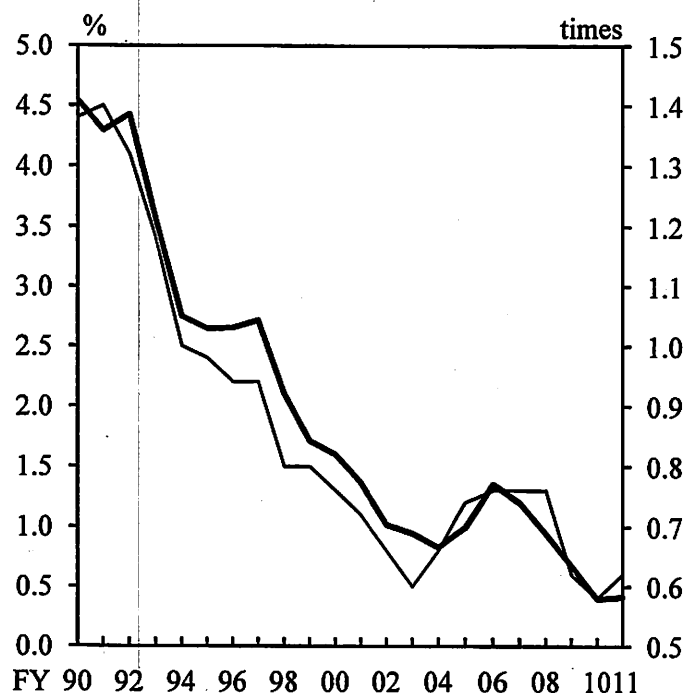
# Cash Flow and Business Fixed Investment

## (1) Investment-Cash Flow Ratio and Expected Growth Rate<sup>1</sup>

### (a) Manufacturing

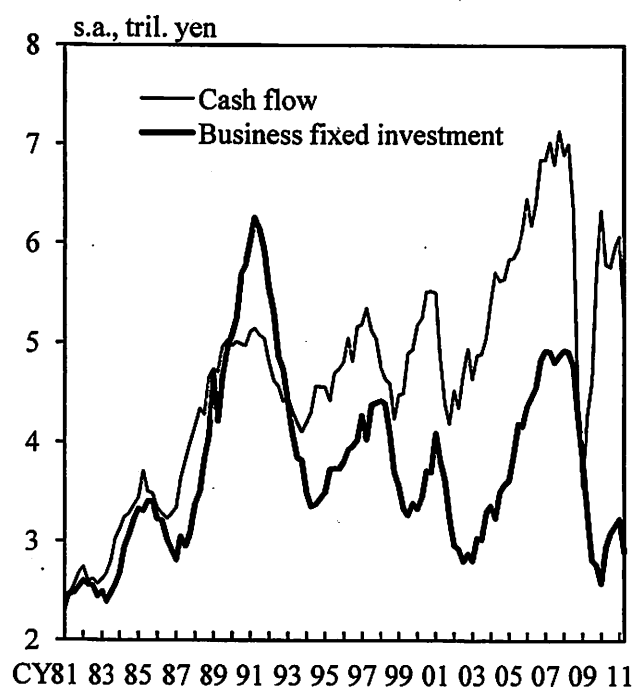


### (b) Nonmanufacturing

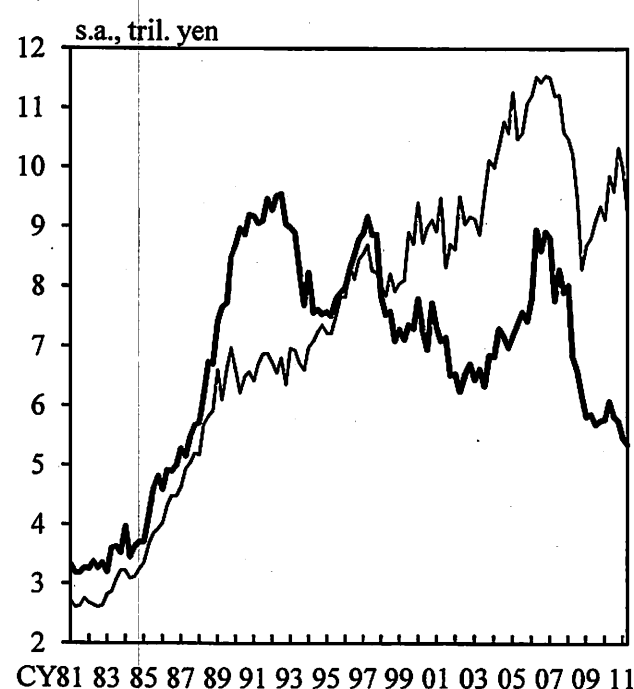


## (2) Cash Flow and Business Fixed Investment<sup>1,3</sup>

### (a) Manufacturing



### (b) Nonmanufacturing



Notes: 1. Cash flow = depreciation expenses + current profits/2

2. Real annual growth rates surveyed in January or February in the previous fiscal year.

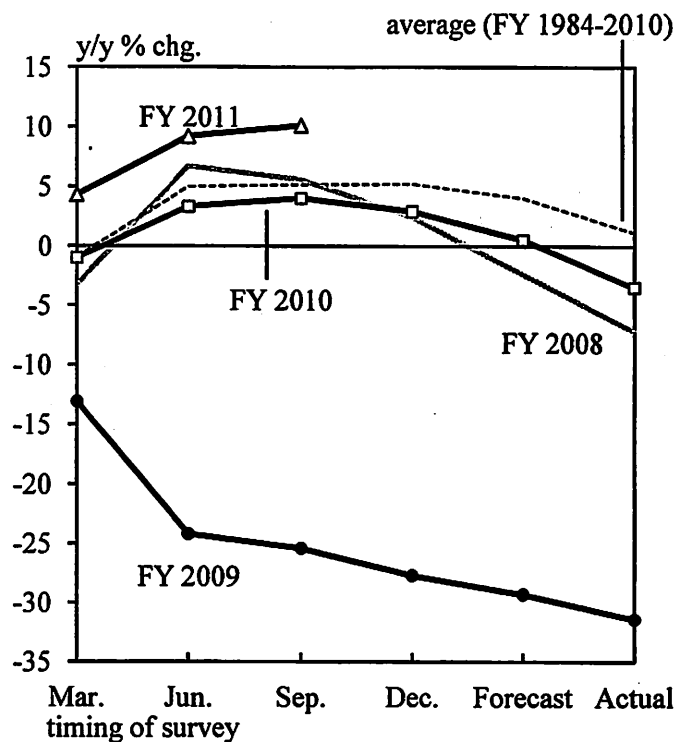
3. Based on all-size enterprises.

4. Figures for fiscal 2011 are those of 2011/Q2.

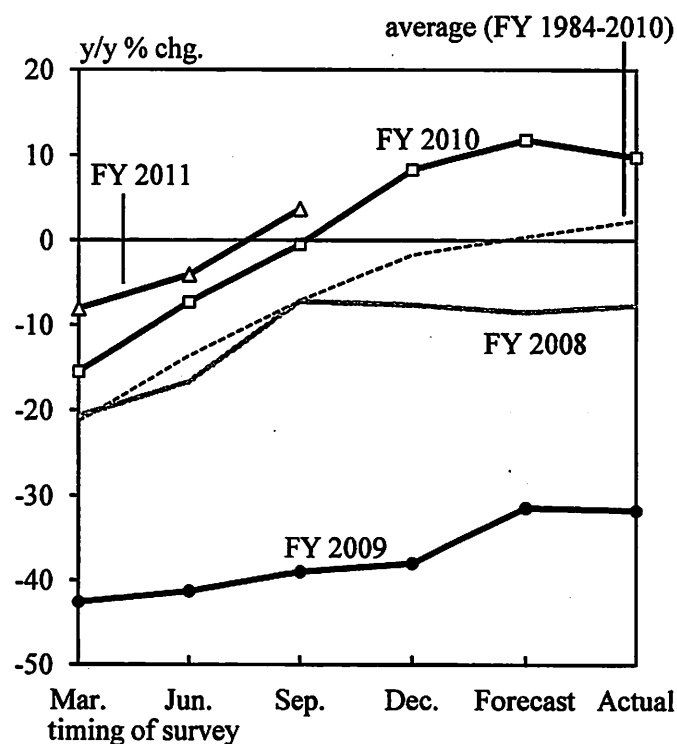
Sources: Ministry of Finance, "Financial Statements Statistics of Corporations by Industry, Quarterly"; Cabinet Office, "Annual Survey of Corporate Behavior."

## Business Fixed Investment Plans as Surveyed

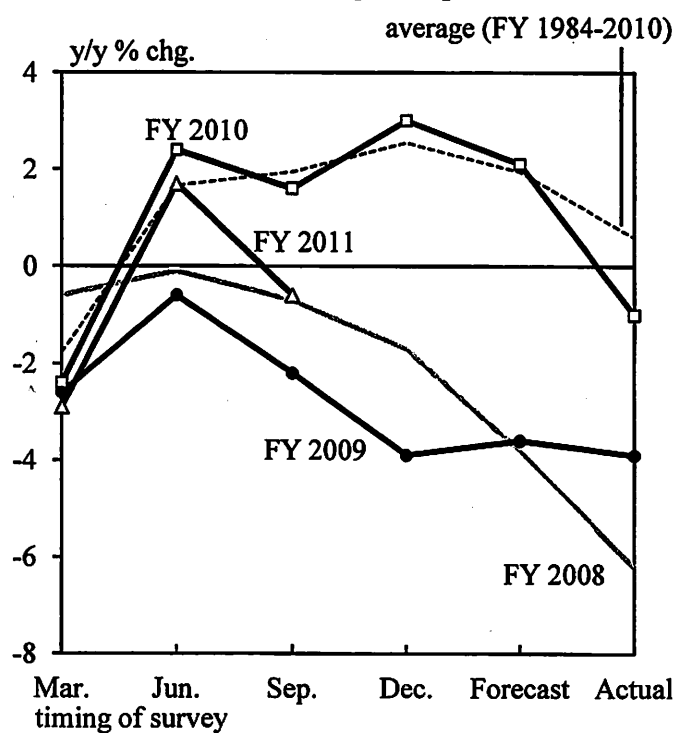
(1) Large Manufacturing Enterprises



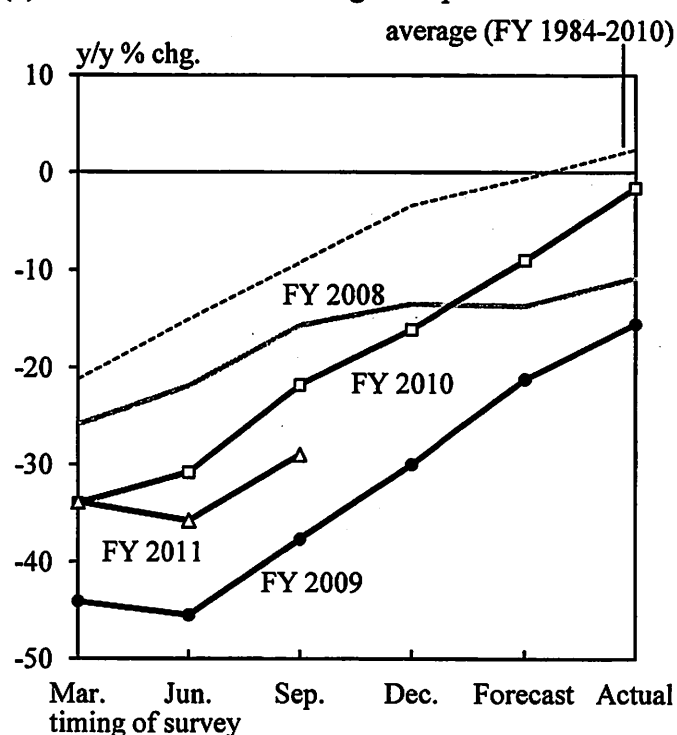
(2) Small Manufacturing Enterprises



(3) Large Nonmanufacturing Enterprises



(4) Small Nonmanufacturing Enterprises



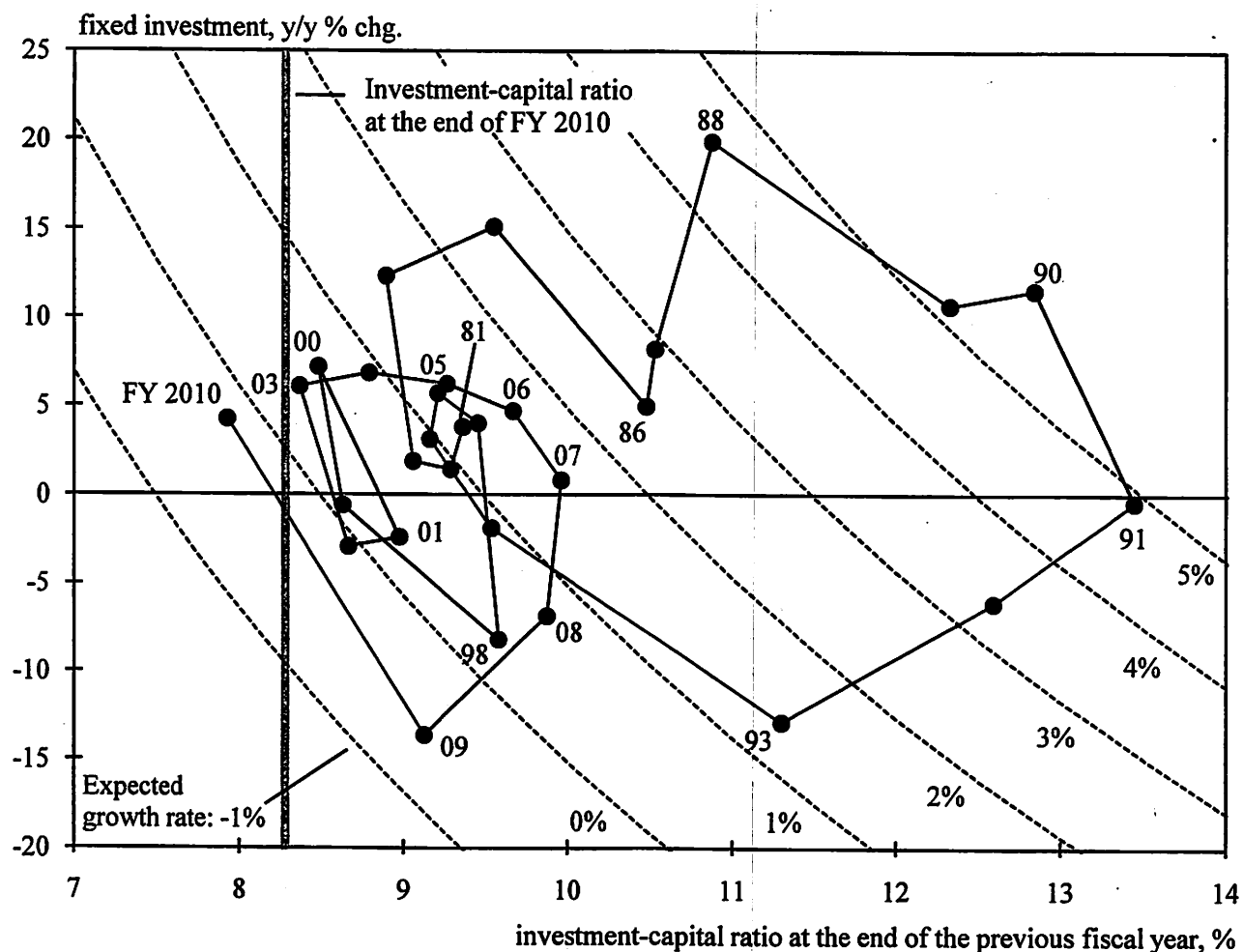
Notes: 1. Includes land purchasing expenses and excludes software investment.

2. Sample enterprises were revised in the March 2010 surveys. Therefore, for fiscal 2009, figures up to the December survey are based on the previous data sets, and the figures for "forecast" and "actual result" are based on the new basis.

3. Since the introduction of the new accounting standard for lease transactions beginning on April 1, 2008, figures up to fiscal 2008 are based on the previous standard and figures from fiscal 2009 onward are based on the new standard. Past averages (fiscal 1984-2010) are calculated using these figures.

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

## Capital Stock Cycle



1. Capital stock cycle in the chart shows the relationship between the investment-capital ratio and the year-on-year rate of change in fixed investment.
2. As these variables have the following relation, a hyperbolic curve can be drawn for a given expected growth rate.  

$$\text{Year-on-year rate of change in fixed investment (y-axis)} \times \text{investment-capital ratio at the end of the previous fiscal year (x-axis)} = \text{expected growth rate} + \text{trend growth rate of capital coefficient} + \text{depreciation rate}$$
3. The phase of fixed investment at a certain time can be evaluated in relation to the hyperbolic curve corresponding to the expected growth rate at that time.

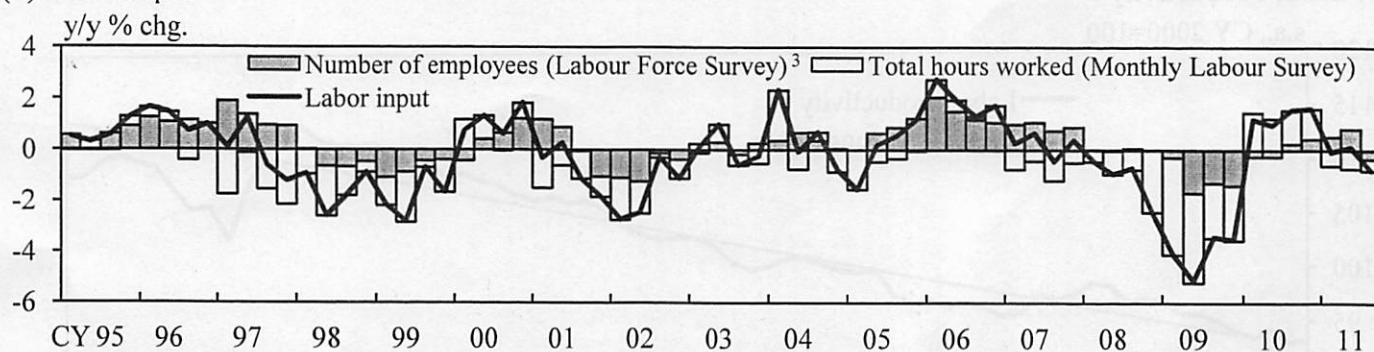
Sources: Cabinet Office, "National Accounts";

Research Institute of Economy, Trade and Industry, "Japan Industrial Productivity Database 2010."

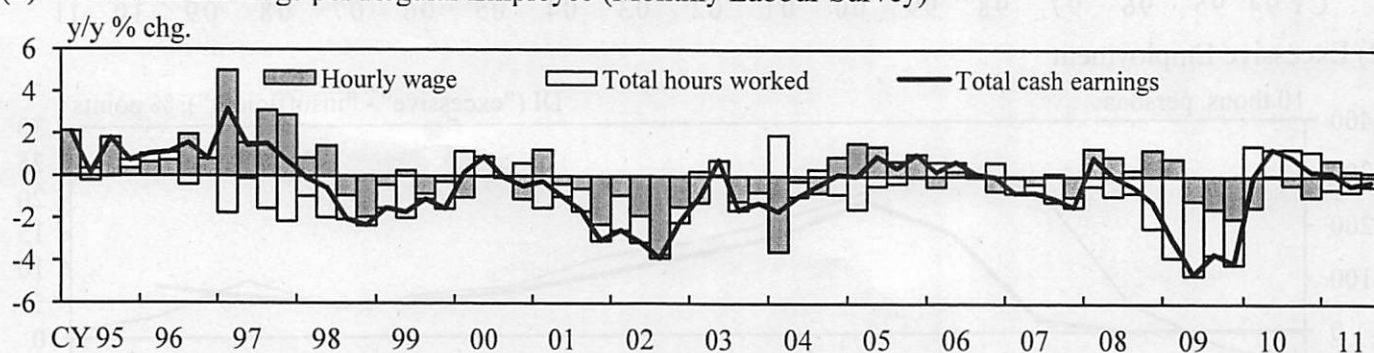


# Employment and Wages

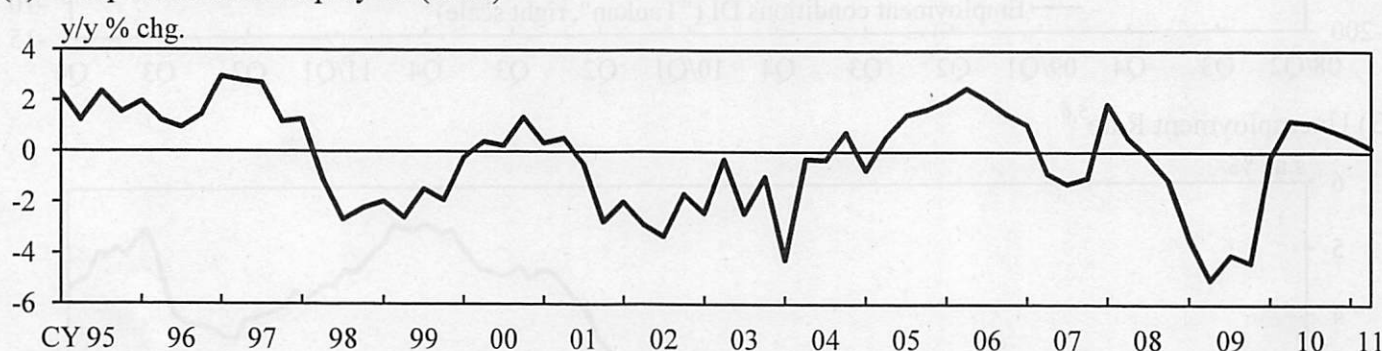
## (1) Labor Input<sup>1,2</sup>



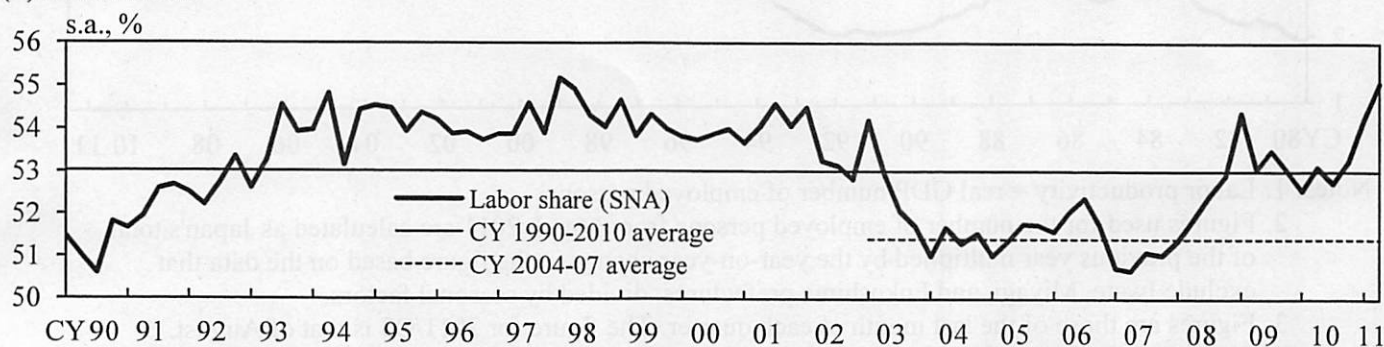
## (2) Total Cash Earnings per Regular Employee (Monthly Labour Survey)<sup>1,2</sup>



## (3) Compensation of Employees (SNA)



## (4) Labor Share<sup>4</sup>



Notes: 1. Data from "Monthly Labour Survey" are for establishments with at least five employees.

2. Figures for 2011/Q3 are July-August averages.

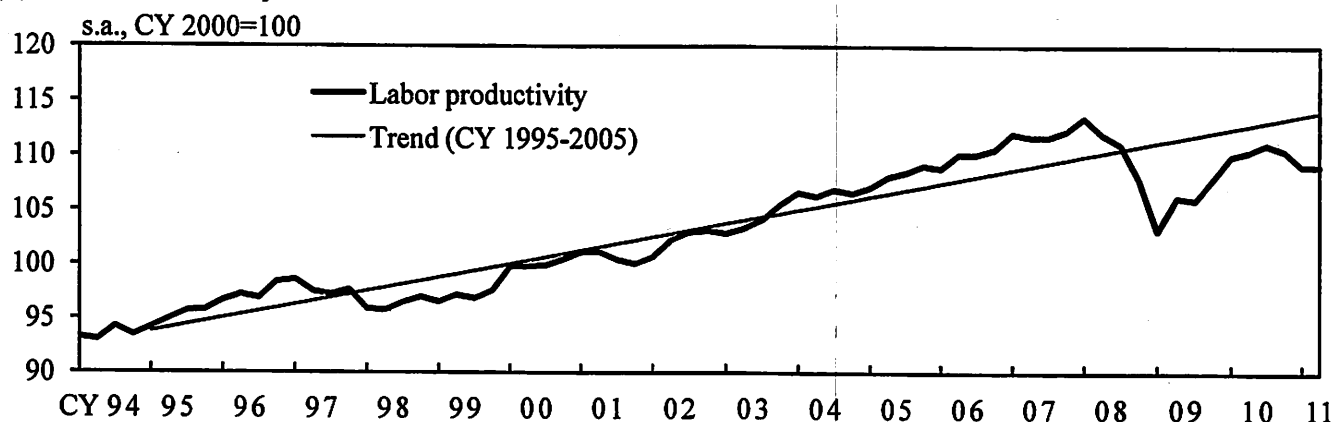
3. Figures from 2011/Q1 are based on data that exclude Iwate, Miyagi, and Fukushima prefectures.

4. Labor share = compensation of employees/nominal GDP  $\times$  100

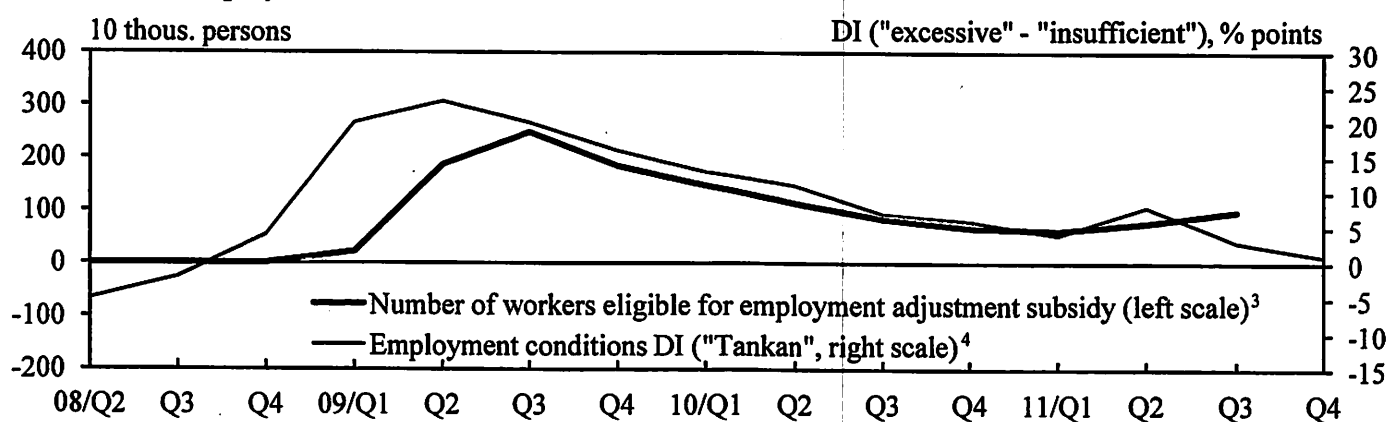
Sources: Ministry of Internal Affairs and Communications, "Labour Force Survey";  
Ministry of Health, Labour and Welfare, "Monthly Labour Survey";  
Cabinet Office, "National Accounts."

## Supply and Demand Conditions in the Labor Market

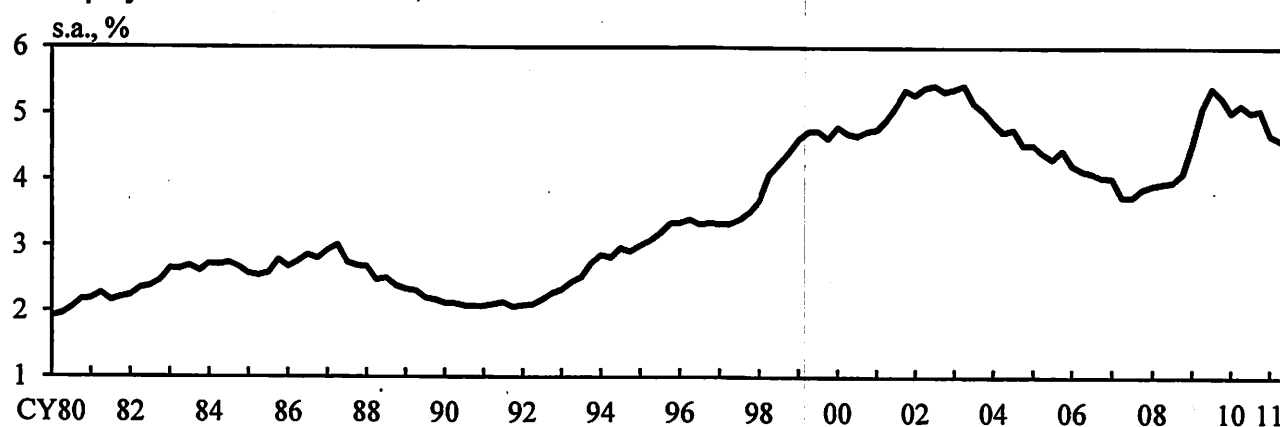
### (1) Labor Productivity<sup>1,2</sup>



### (2) Excessive Employment



### (3) Unemployment Rate<sup>5,6</sup>



Notes: 1. Labor productivity = real GDP/number of employed persons

2. Figures used for the number of employed persons from March 2011 are calculated as Japan's total of the previous year multiplied by the year-on-year change in the figure based on the data that exclude Iwate, Miyagi, and Fukushima prefectures, divided by seasonal factors.

3. Figures are those of the last month of each quarter. The figure for 2011/Q3 is that of August.

4. Figures are based on all-size enterprises and all industries.

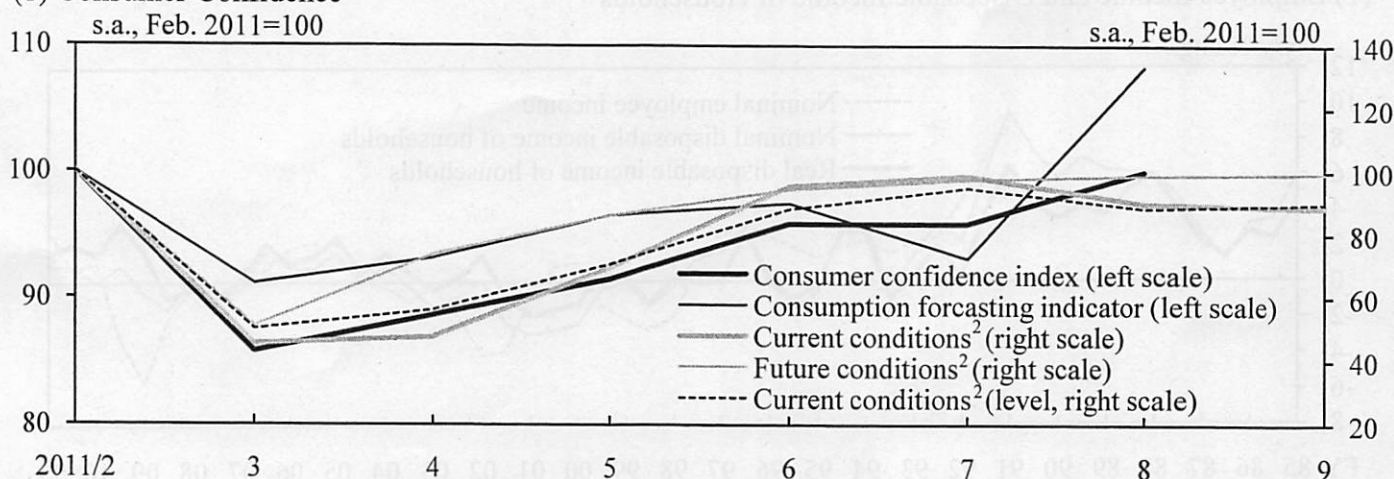
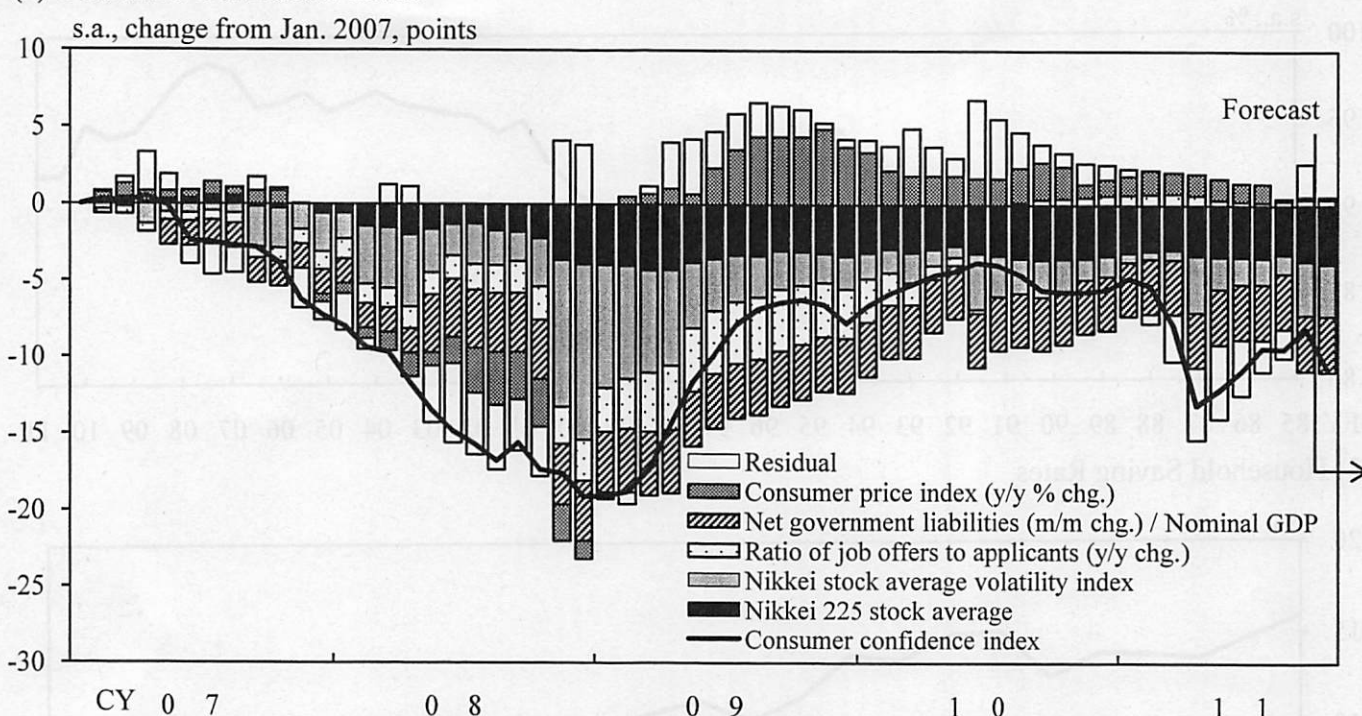
The figure for 2011/Q4 is the forecast in the September 2011 survey.

5. Figures from 2011/Q1 are based on data that exclude Iwate, Miyagi, and Fukushima prefectures.

6. The figure for 2011/Q3 is the July-August average.

Sources: Cabinet Office, "National Accounts";  
Ministry of Internal Affairs and Communications, "Labour Force Survey";  
Bank of Japan, "Tankan, Short-Term Economic Survey of Enterprises in Japan";  
Ministry of Health, Labour and Welfare.

## Consumer Confidence

(1) Consumer Confidence<sup>1</sup>(2) Consumer Confidence Index<sup>3,4,5</sup>

$$CM_t = 41.0 + 0.0005 \times SP_{t-1} - 0.18 \times SV_{t-1} + 8.1 \times JO_{t-1} - 522.2 \times (GD_{t-1} - GD_{t-2}) / PY_{t-1} - 1.74 \times CPI_{t-1}$$

(2.38) (0.00) (0.03) (1.85) (130.65) (0.33)

CM: Consumer confidence index, SP: Nikkei 225 stock average,

SV: Nikkei stock average volatility index, JO: Ratio of job offers to applicants (y/y chg.),

GD: Net government liabilities, PY: Nominal GDP, CPI: Consumer price index (y/y % chg.)

Adj.R<sup>2</sup> = 0.75

Notes: 1. The consumer confidence index and consumer forecasting indicator in (1) are lagged by one period.

2. Economy watchers survey of household activity.

3. The estimation periods are Jan. 2001-Sep. 2011. Figures in parentheses are standard errors.

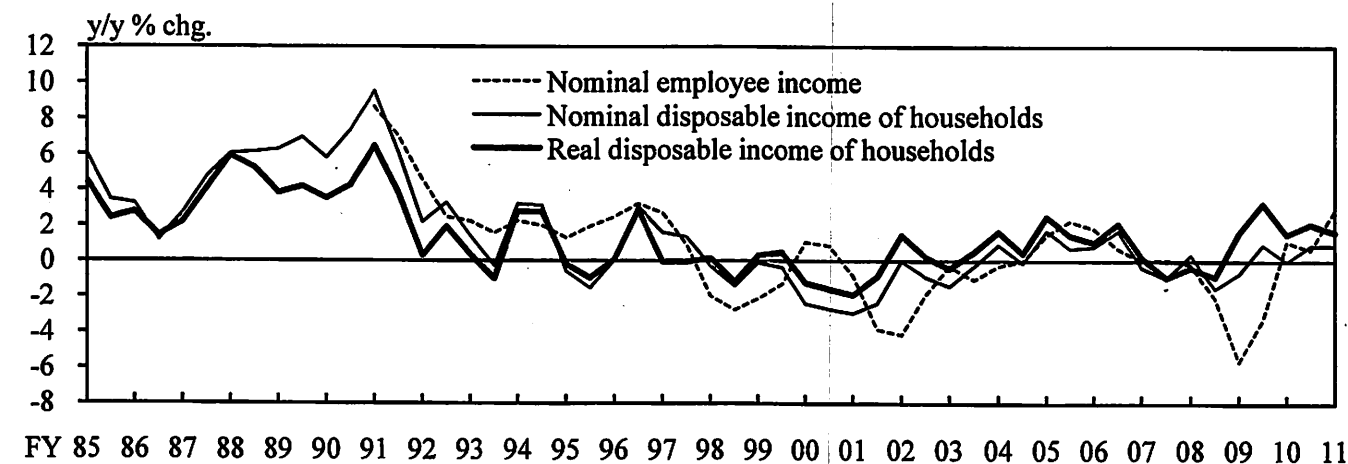
4. The consumer confidence index in (2) is adjusted to exclude the effect of changes in the survey method and seasonally adjusted by the Research and Statistics Department, Bank of Japan.

5. The figure for October 2011 is the forecast using the value of Nikkei 225 stock average and Nikkei stock average volatility index by assuming that the value of the other explanatory variables are the same as those in September 2011.

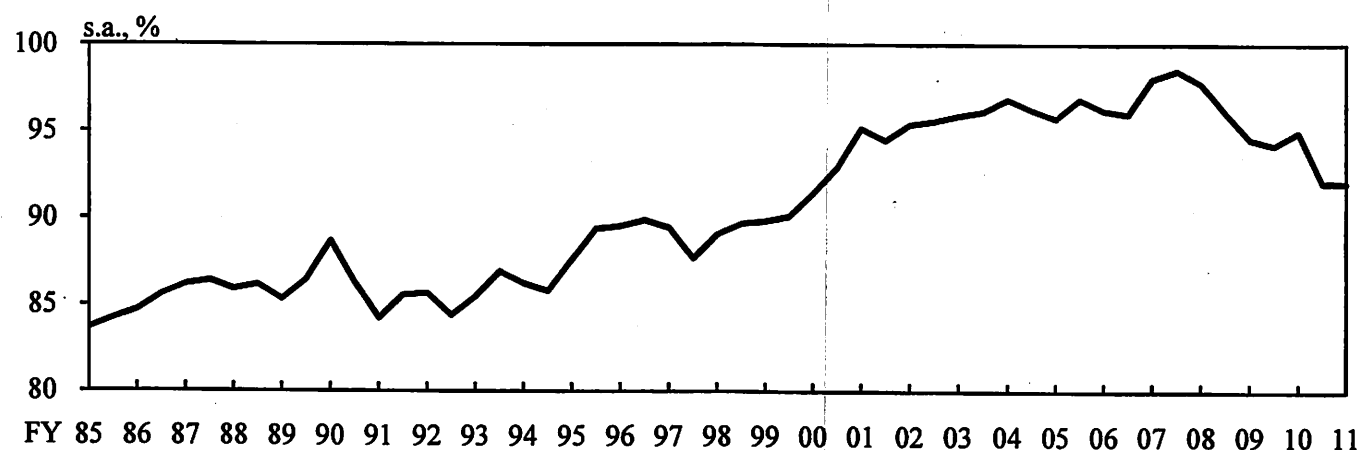
Sources: Cabinet Office, "Consumer Confidence Survey," "National Accounts," "Economy Watchers Survey"; Ministry of Health, Labour and Welfare, "Report on Employment Service"; Nikkei Inc., "Consumption Forecasting Indicator," etc.

# Disposable Income of Households, Propensity to Consume, and Saving Rates

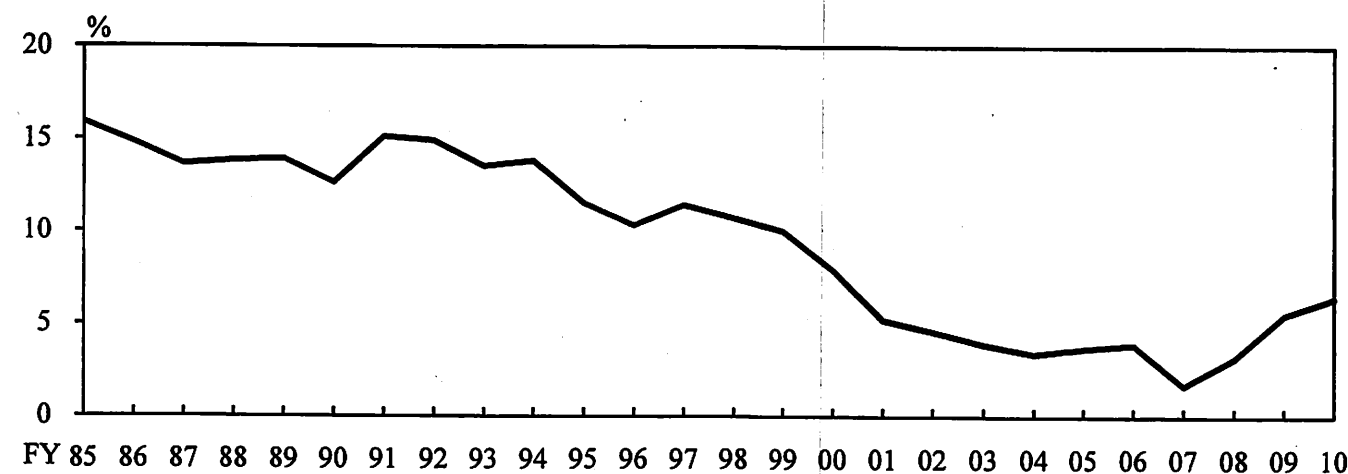
## (1) Employee Income and Disposable Income of Households<sup>1,2</sup>



## (2) Propensity to Consume



## (3) Household Saving Rates



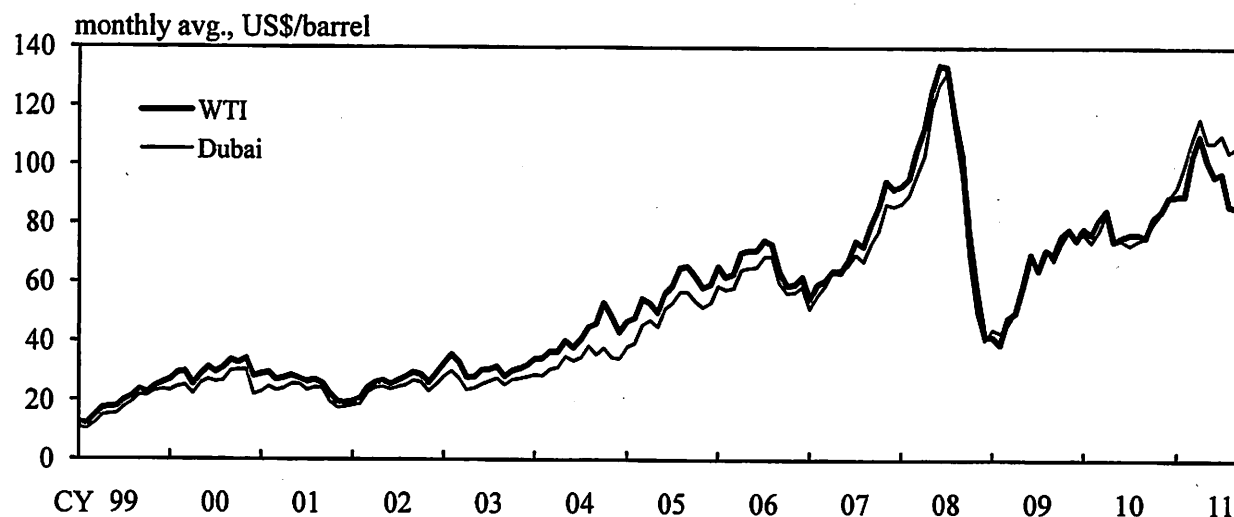
Notes: 1. Nominal employee income is calculated as the number of employees (Labour Force Survey) multiplied by total cash earnings for establishments with at least five employees (Monthly Labour Survey). Figures for the first half of fiscal 2011 are April-August averages.

2. Figures of disposable income of households, propensity to consume, and household saving rates for fiscal 2010 and the first half of fiscal 2011 are estimated by the Research and Statistics Department, Bank of Japan. They include estimated transfers of income from the government to households through the economic policy packages. Propensity to consume is calculated as consumption of households divided by disposable income.

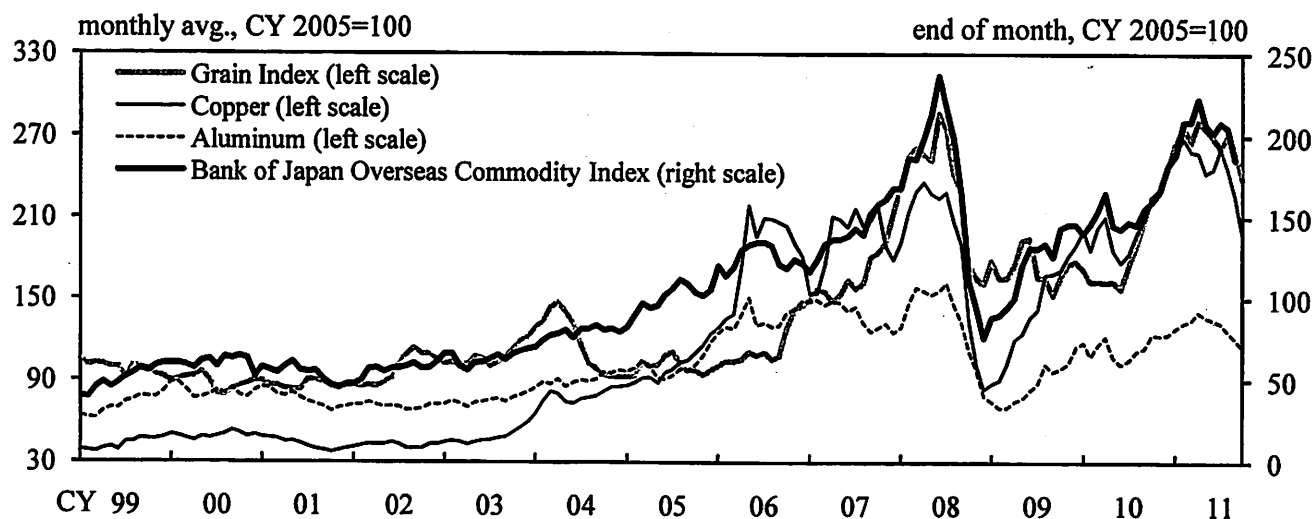
Sources: Cabinet Office, "National Accounts"; Ministry of Internal Affairs and Communications, "Labour Force Survey," "Consumer Price Index"; The budgets for fiscal 2009-fiscal 2011; Ministry of Health, Labour and Welfare, "Monthly Labour Survey," etc.

## International Commodity Prices and Overseas Economies

### (1) Oil Prices

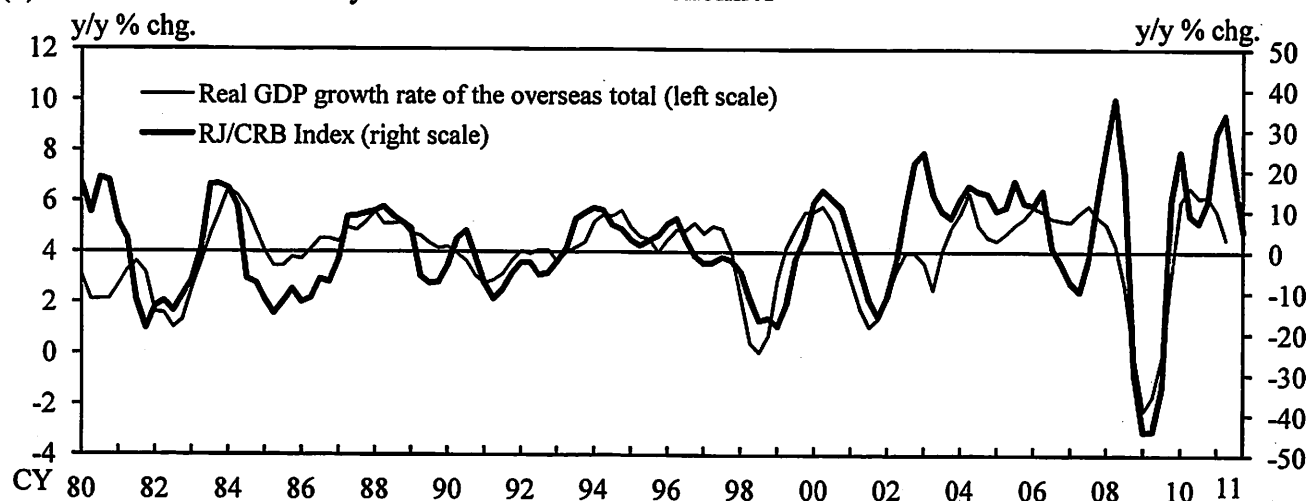


### (2) International Commodity Prices



Note: The Grain Index is the weighted average of prices of three selected items (wheat, soybeans, and corn) in overseas commodity markets. The weights are based on the value of imports in the Trade Statistics of Japan.

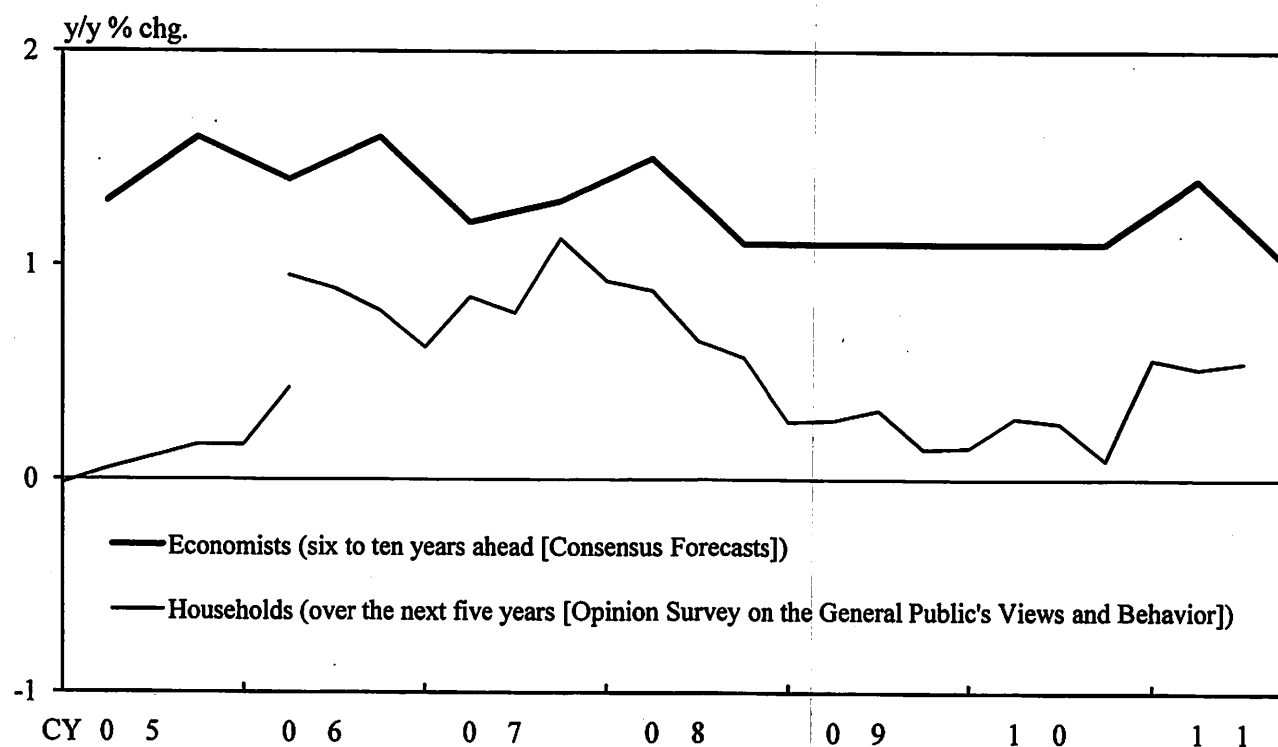
### (3) International Commodity Prices and Overseas Economies



Sources: Bank of Japan, "Bank of Japan Overseas Commodity Index"; IMF, "World Economic Outlook," etc.

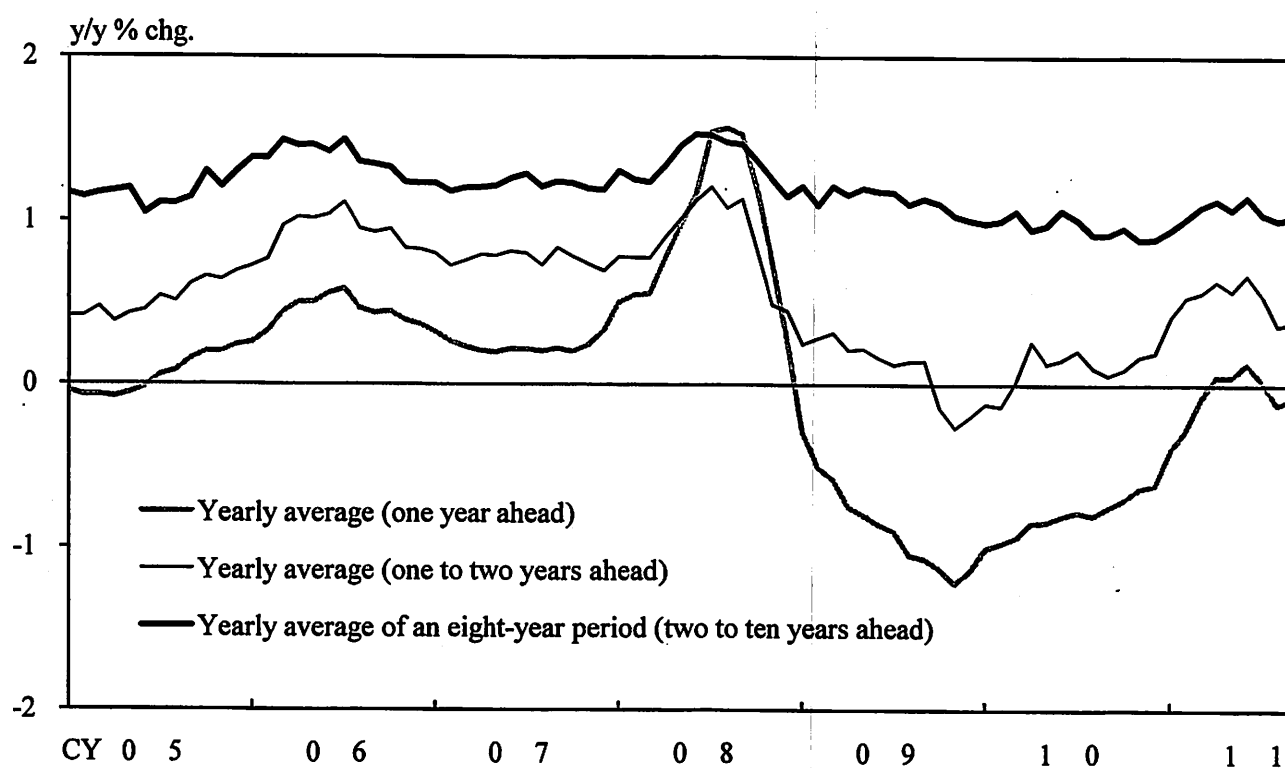
# Inflation Expectations

## (1) Expected Rates of Inflation over the Medium to Long Term (Economists, Households)



Note: Figures for households are estimated using a modified Carlson-Parkin method. For details, see "On Inflation Expectations," Bank of Japan Review Series, 2008-J-15 (available in Japanese only).

## (2) Expected Rates of Inflation (Market Participants)

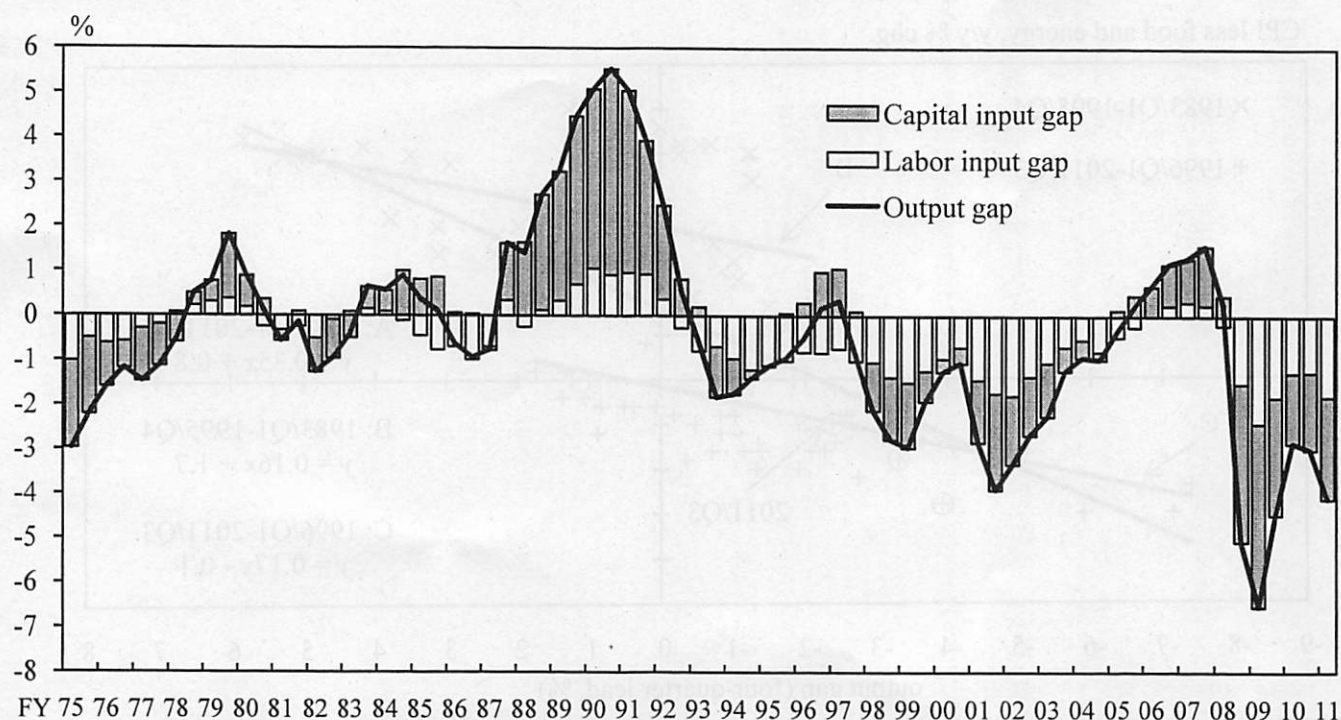


Sources: Bank of Japan, "Opinion Survey on the General Public's Views and Behavior"; Consensus Economics Inc., "Consensus Forecasts"; QUICK, "Quick Bond Monthly Survey."

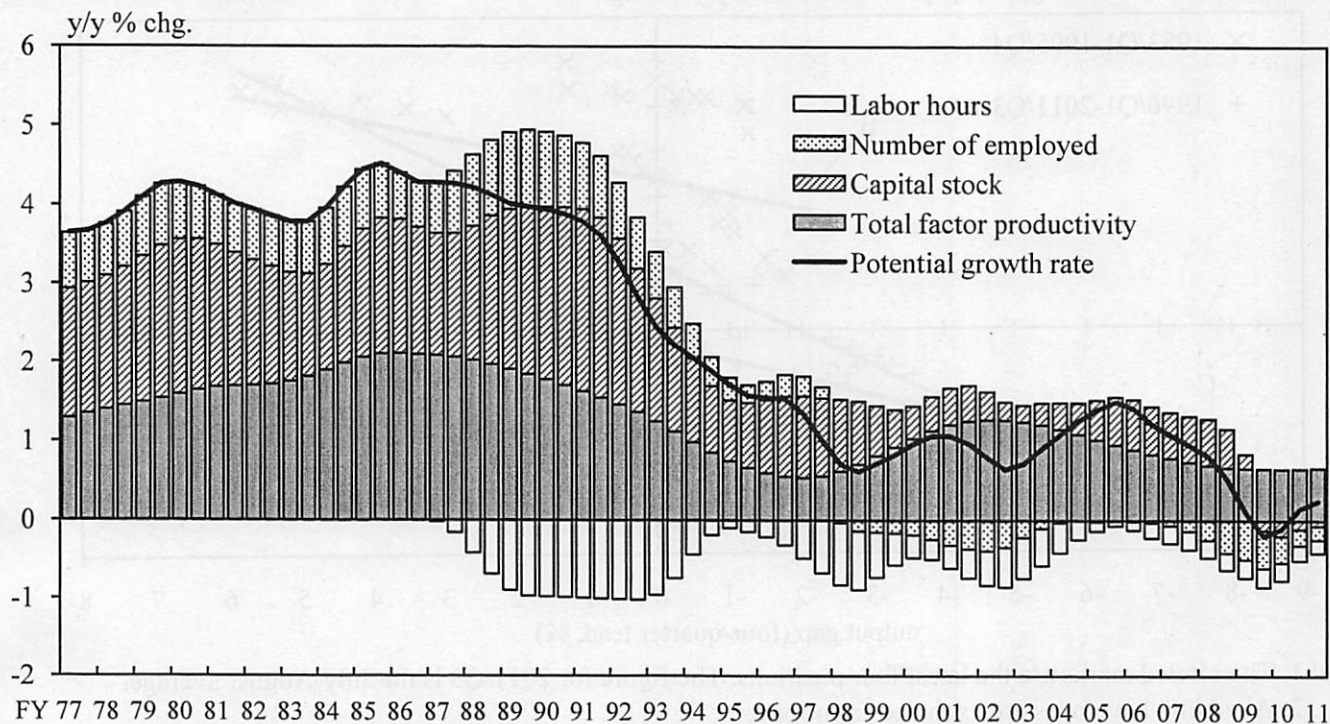


## Output Gap and Potential Growth Rate

## (1) Output Gap



## (2) Potential Growth Rate

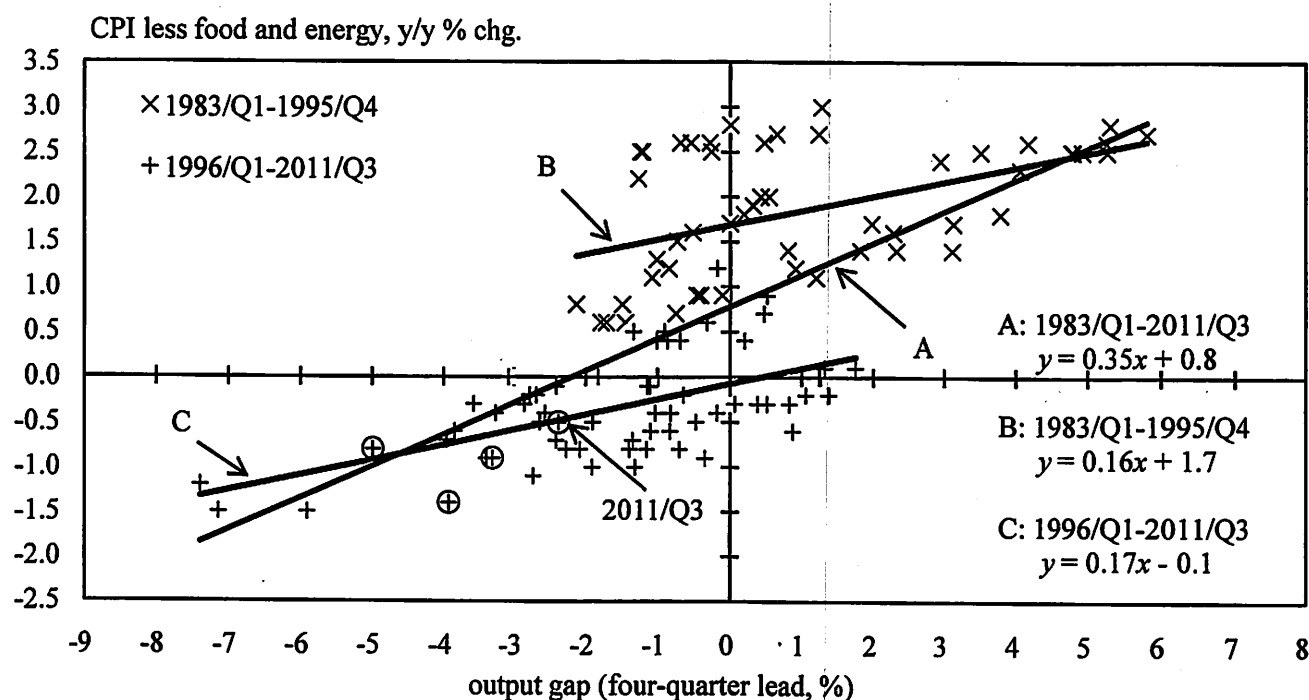
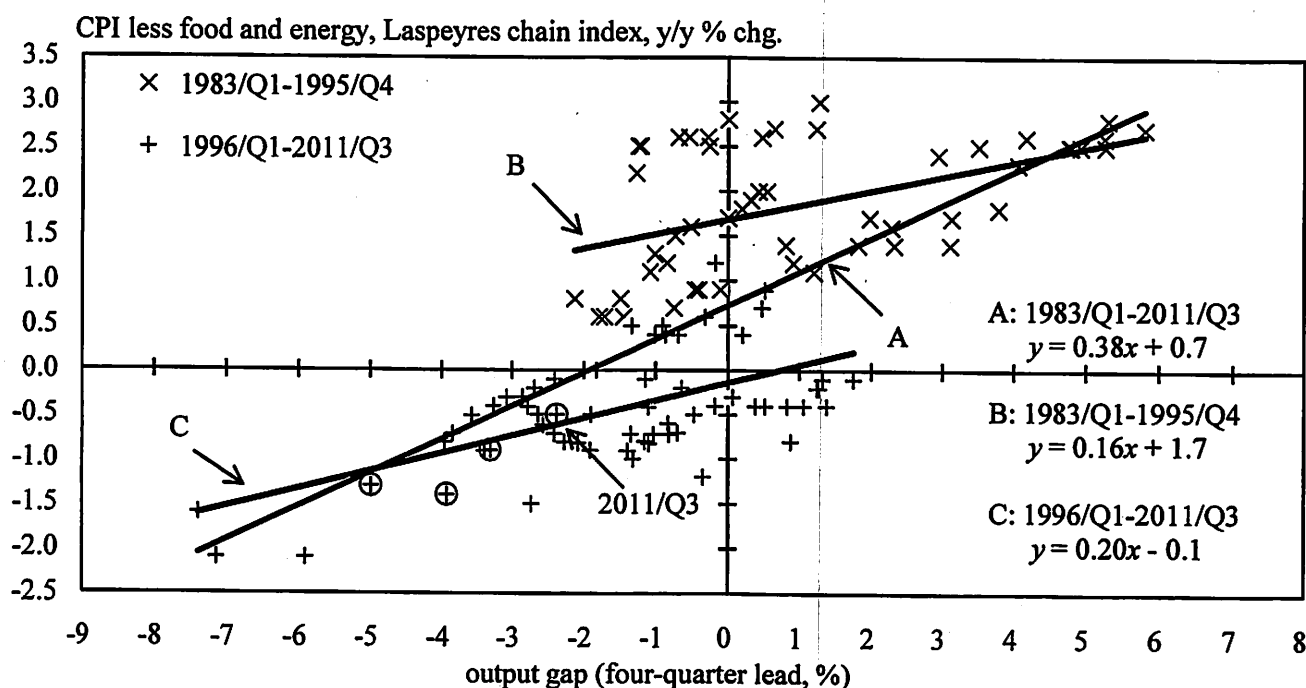


Notes: 1. The output gap and the potential growth rate are estimated by the Research and Statistics Department, Bank of Japan. For the estimation procedures, see "The New Estimates of Output Gap and Potential Growth Rate," Bank of Japan Review Series, 2006-E-3. For the nonmanufacturing industry, the "Tankan" has been used to estimate utilization ratios (previously the "Business Outlook Survey" was used).

2. Figures for the first half of fiscal 2011 are those of 2011/Q2.

Sources: Cabinet Office, "National Accounts"; Ministry of Internal Affairs and Communications, "Labour Force Survey"; Ministry of Health, Labour and Welfare, "Monthly Labour Survey," "Report on Employment Service"; Ministry of Economy, Trade and Industry, "Indices of Industrial Production"; Bank of Japan, "Tankan, Short-Term Economic Survey of Enterprises in Japan," etc.

## Output Gap and Inflation Rate

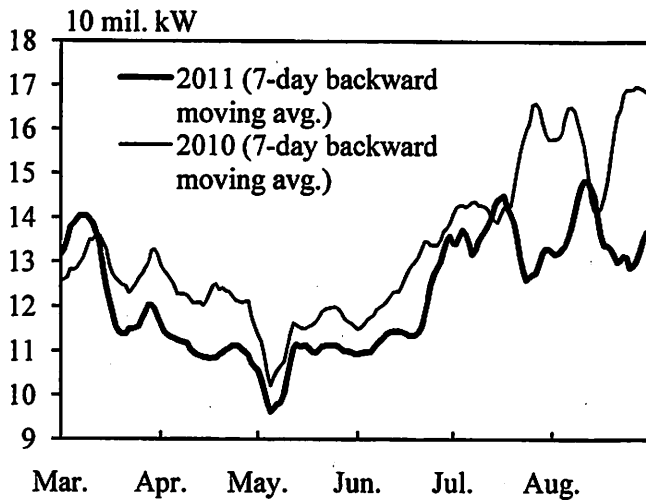
(1) Phillips Curve (CPI Less Food and Energy)<sup>1,2,3,4</sup>(2) Phillips Curve (CPI Less Food and Energy, Laspeyres Chain Index)<sup>1,2,3,4,5</sup>

- Notes: 1. The circled marks are the latest four positions. The figure for 2011/Q3 is the July-August average.  
 2. Alcoholic beverages are excluded from food.  
 3. Figures for the CPI are adjusted to exclude the effect of changes in the consumption tax rate.  
 4. The output gap is estimated by the Research and Statistics Department, Bank of Japan. For the estimation procedures, see "The New Estimates of Output Gap and Potential Growth Rate," Bank of Japan Review Series, 2006-E-3. For the nonmanufacturing industry, the "Tankan" has been used to estimate utilization ratios (previously the "Business Outlook Survey" was used).  
 5. Figures for the CPI (Laspeyres chain index) up to 2000/Q4 are based on the fixed-base index, and figures from 2001/Q1 are based on the Laspeyres chain index. However, figures for the Laspeyres chain index of the 2000 base are estimated by the Research and Statistics Department, Bank of Japan.
- Sources: Ministry of Internal Affairs and Communications, "Consumer Price Index," etc.

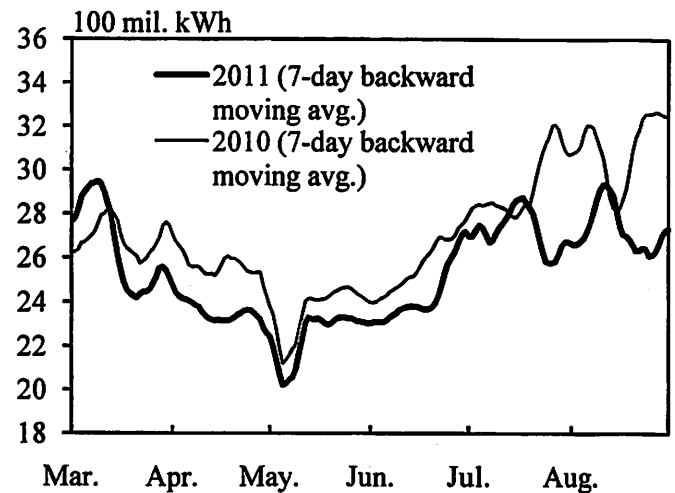


## Electricity Conservation through the Summer

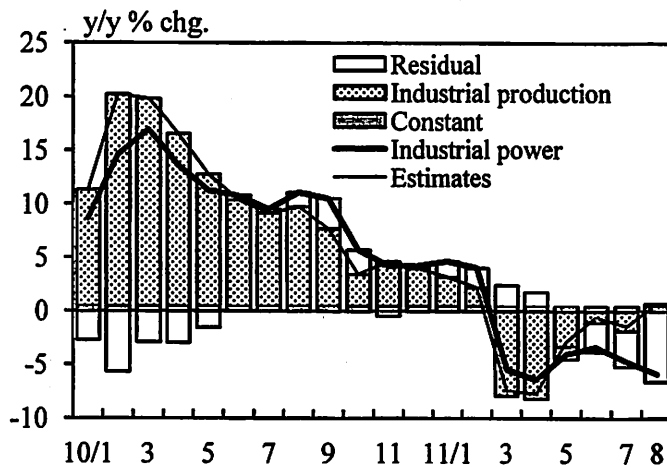
(1) Peak Demand (Japan's Total, Daily)



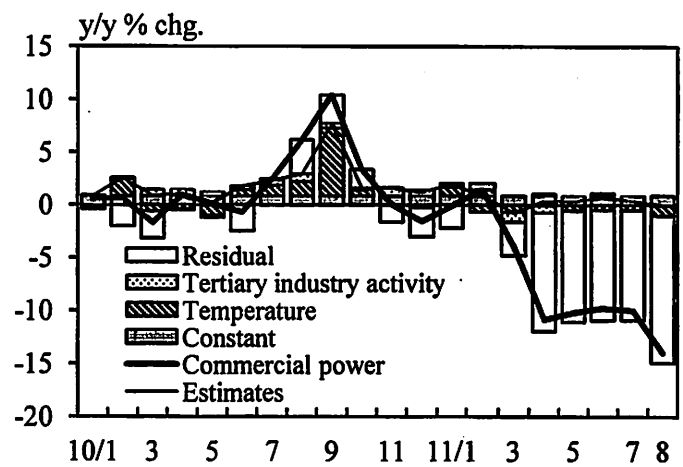
(2) Electric Power Consumption (Japan's Total, Daily)



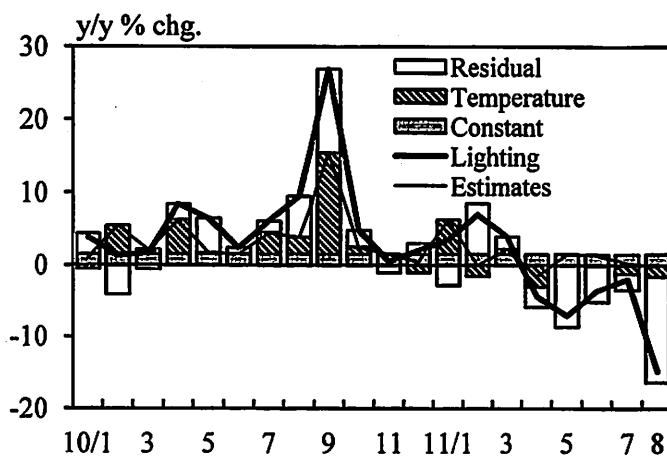
(3) Electric Power Consumption (Industrial Power)



(4) Electric Power Consumption (Commercial Power)



(5) Electric Power Consumption (Lighting)



(Reference) Regressions of (3)-(5)

Electric power consumption (industrial power) (y/y % chg.)  
=  $0.45 + 0.60 \times \text{industrial production (y/y \% chg.)}$

(1.56) (31.0)

Adj.  $R^2 = 0.94$ , standard error of regression: 2.21

Electric power consumption (commercial power) (y/y % chg.)  
=  $0.88 + 0.31 \times \text{tertiary industry activity (y/y \% chg.)}$

(2.81) (2.67)

+  $\alpha_j \times \text{temperature (difference from the previous year)}$

Adj.  $R^2 = 0.38$ , standard error of regression: 2.31

Electric power consumption (lighting) (y/y % chg.)  
=  $1.52 + \alpha_j \times \text{temperature (difference from the previous year)}$

(2.22)

Adj.  $R^2 = 0.29$ , standard error of regression: 5.12

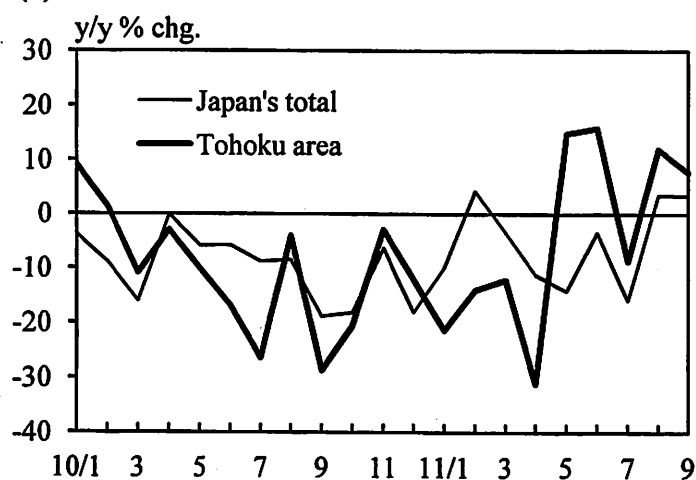
$\alpha_j$ : coefficients of each regression ( $j$  represents each month)

Note: The estimation periods are April 2006 to February 2011. Data for industrial production and tertiary industry activity are based on Japan's total, and data for temperature are based on Tokyo. Figures in parentheses are  $t$ -values.

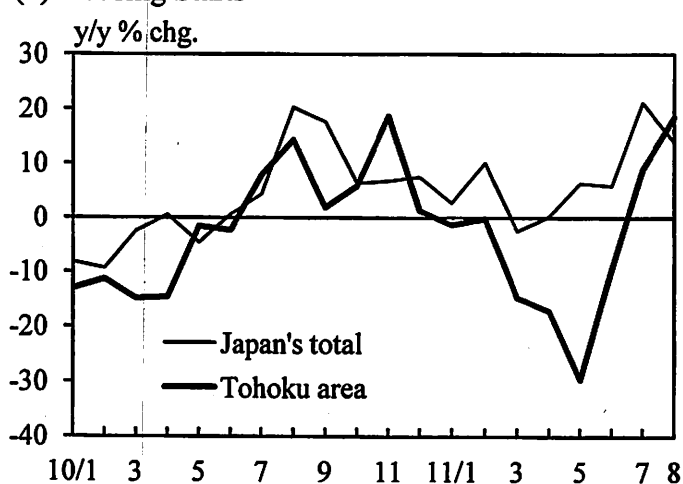
Sources: The Federation of Electric Power Companies of Japan, "Electricity Demand"; Electric Power System Council of Japan, "Power Demand"; Japan Meteorological Agency; Ministry of Economy, Trade and Industry, "Indices of Industrial Production," "Indices of Tertiary Industry Activity."

## Economic Activity in the Disaster Areas

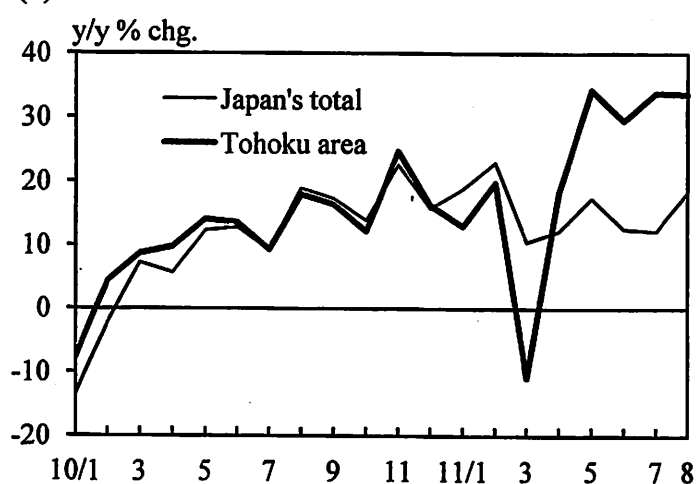
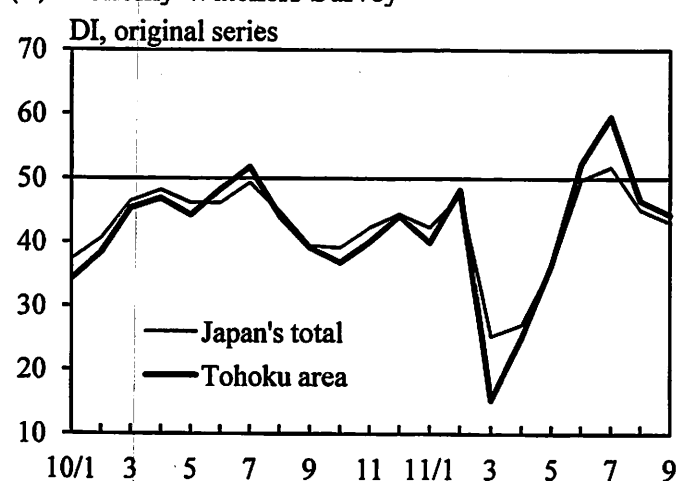
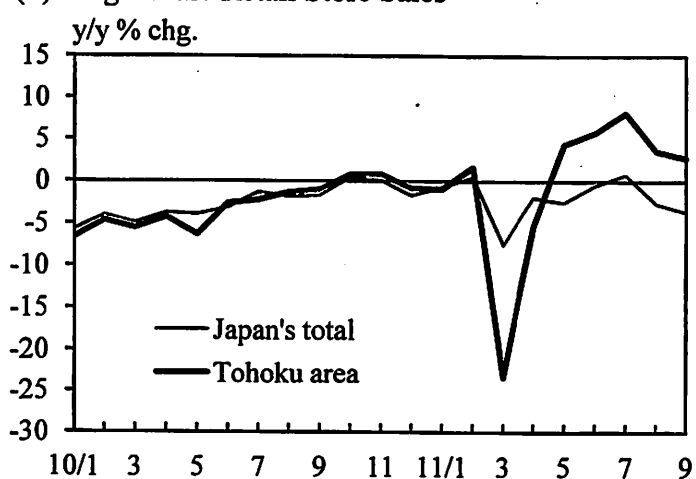
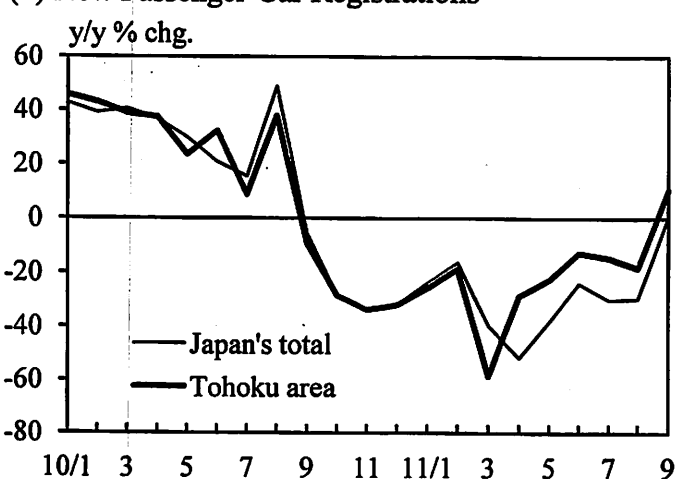
(1) Value of Public Works Contracted



(2) Housing Starts



(3) New Job Offers

(4) Economy Watchers Survey<sup>1</sup>(5) Large-Scale Retail Store Sales<sup>2</sup>(6) New Passenger-Car Registrations<sup>3</sup>

Notes: 1. DI for current conditions of household activity.

2. Adjusted to exclude the effects of the increase in the number of stores.

3. Excluding small cars with engine sizes of 660 cc or less.

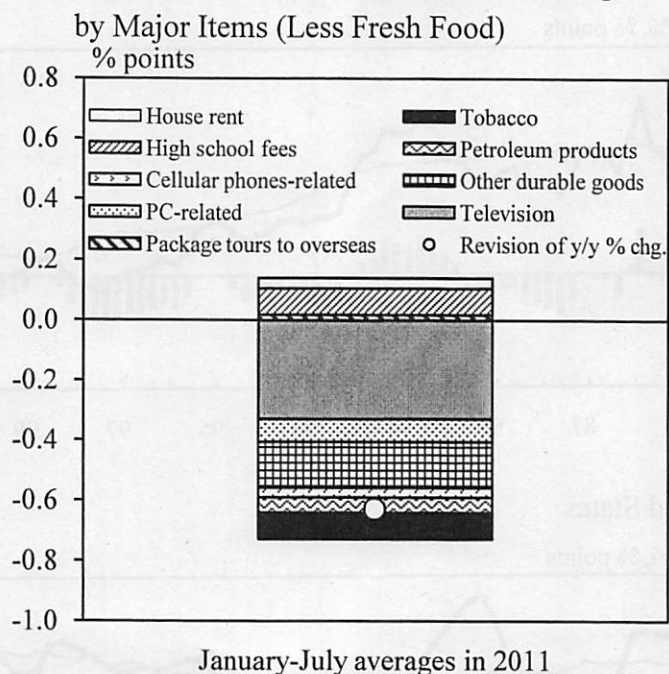
Sources: East Japan Construction Surety, etc., "Public Works Prepayment Surety Statistics"; Ministry of Land, Infrastructure, Transport and Tourism, "Statistics on Building Construction Starts"; Ministry of Health, Labour and Welfare, "Report on Employment Service"; Cabinet Office, "Economy Watchers Survey"; Japan Automobile Dealers Association; Ministry of Economy, Trade and Industry, "Current Survey of Commerce."

## Base Revision of the Consumer Price Index

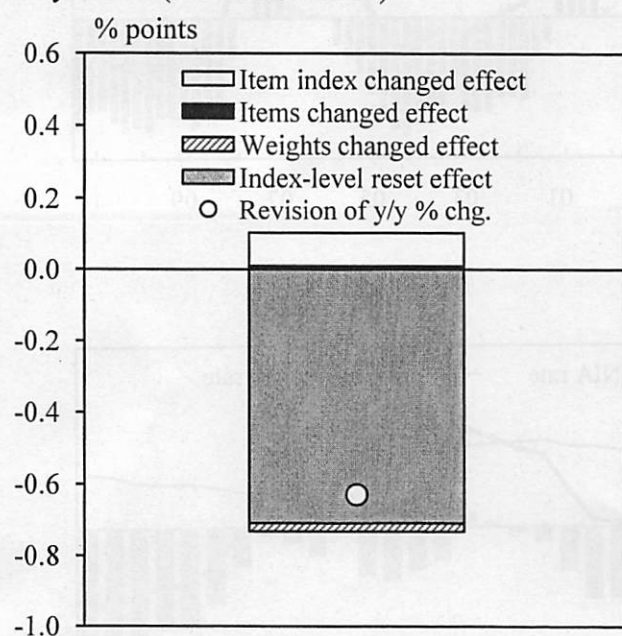
(1) Comparison of the 2005 Base Index and the 2010 Base Index

		y/y % chg., % points
All items	2005 base	0.2
	2010 base	-0.4
	Difference	-0.6
All items, less fresh food	2005 base	0.2
	2010 base	-0.4
	Difference	-0.6
All items, less food and energy	2005 base	-0.2
	2010 base	-1.0
	Difference	-0.8

(2) Revision of Year-on-Year Rates of Change by Major Items (Less Fresh Food)



(3) Revision of Year-on-Year Rates of Change by Effect (Less Fresh Food)



(4) Historical Changes of Base Revision (Less Fresh Food)

	y/y % chg., % points		
	Old base (a)	New base (b)	Difference (b) - (a)
From 1980 base to 1985 base	0.8	0.8	0.0
From 1985 base to 1990 base	2.9	2.9	0.0
From 1990 base to 1995 base	0.3	0.2	-0.1
From 1995 base to 2000 base	-0.6	-0.8	-0.2
From 2000 base to 2005 base	0.5	0.1	-0.4
From 2005 base to 2010 base	0.2	-0.4	-0.6

Notes: 1. The items are basically the same as those defined by the Ministry of Internal Affairs and Communications.

2. Cellular phone-related: Cellular phones, and Mobile telephone charges.

3. High school fees: high school fees (public) and high school fees (private).

4. PC-related: Personal computers (desktop), Personal computers (notes), and PC Printers.

5. Other durable goods: Durable goods (excluding television, PC-related, and Cellular phones).

6. House rent: House rent, private, and Imputed rent.

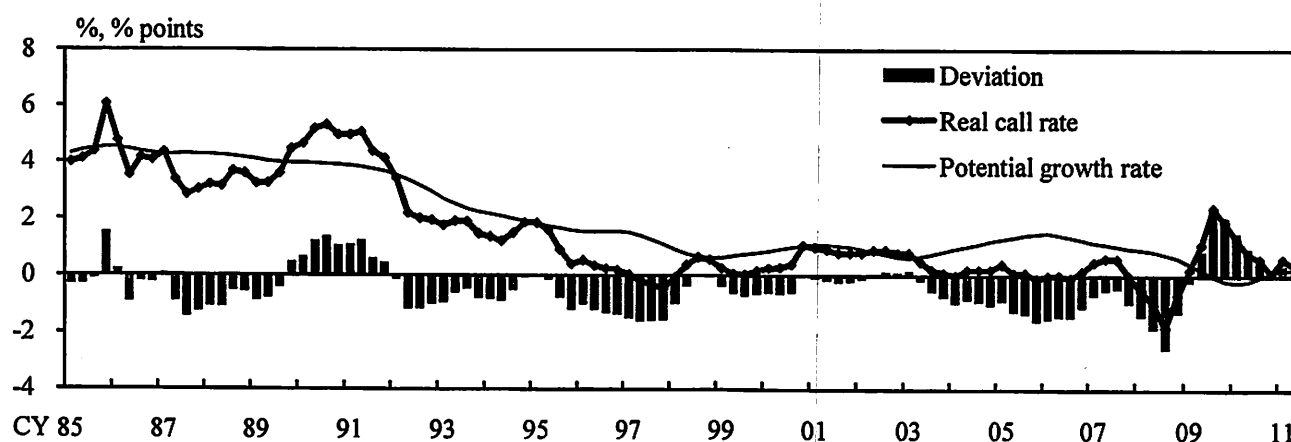
7. Revision of year-on-year rates of change by effects are estimated by the Research and Statistics Department, Bank of Japan. Concretely, the items changed effect, weights changed effect, and index-level reset effect are calculated in order using the 2005 base, with the difference of the sum of these and the year-on-year rates of change using the 2010 base defined as the item index changed effect.

8. Figures for historical changes in the base revision are calculated using the old and new index for the next year of the base year. Figures for the base revision for 2010 are calculated using indices up to July 2011.

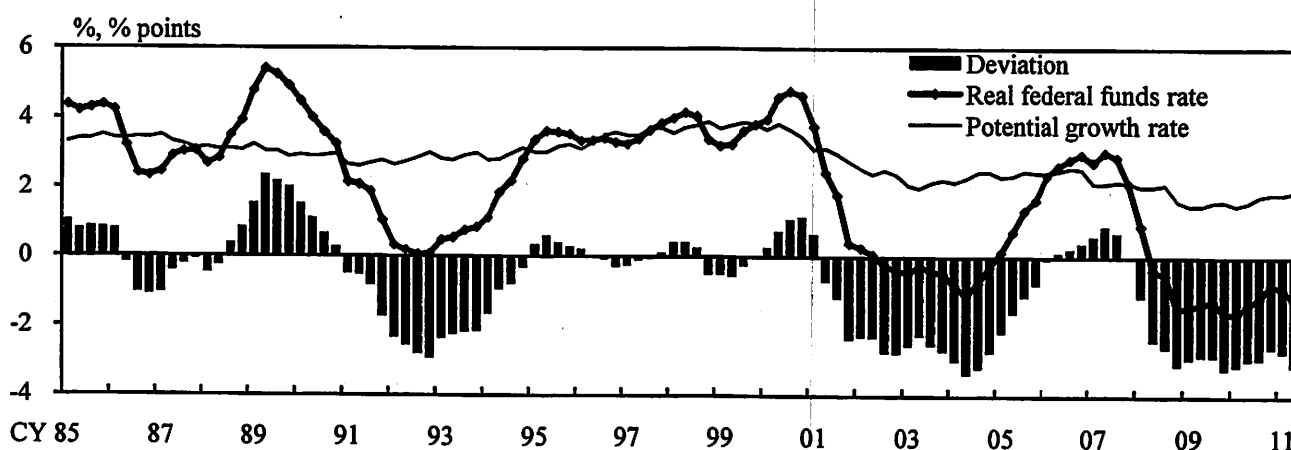
Sources: Ministry of Internal Affairs and Communications, "Consumer Price Index," etc.

## Policy Interest Rates and Potential Growth Rates

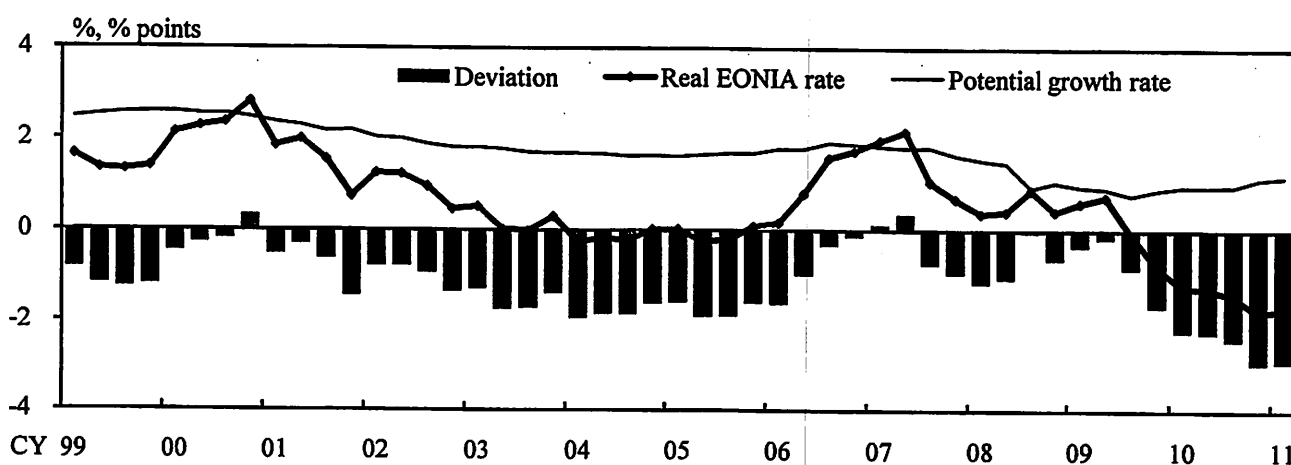
## (1) Japan



## (2) United States



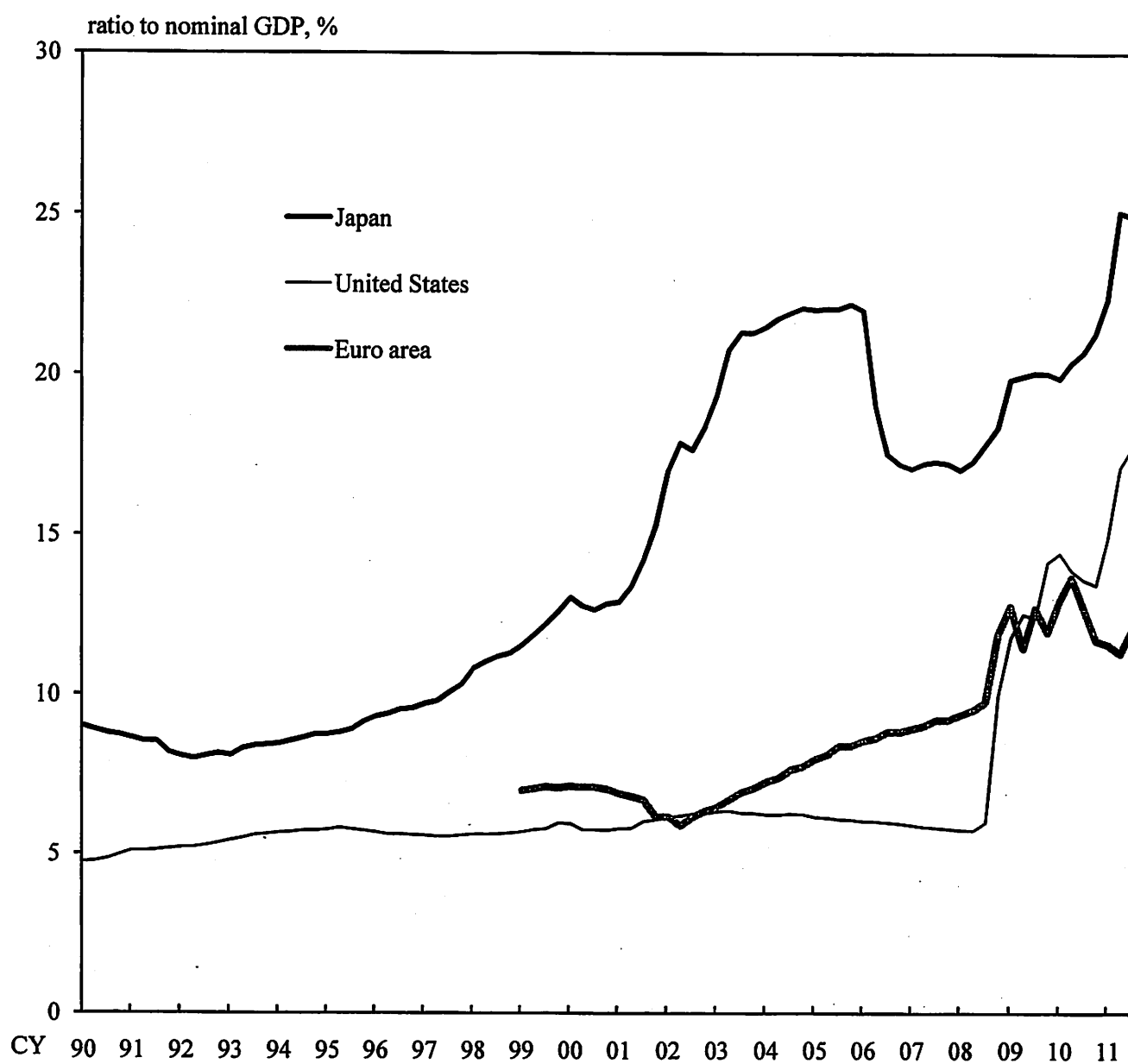
## (3) Euro Area



- Notes: 1. When converting interest rates into real terms, Japan uses the CPI (all items less fresh food) as the deflator. Figures for the CPI are adjusted to exclude the effects of changes in the consumption tax rate. From 2001/Q1, high school fees are excluded. The United States uses the PCE deflator (excluding food and energy), and the euro area uses the HICP for all items.
2. The potential growth rate in Japan is estimated by the Research and Statistics Department, Bank of Japan. Those in the United States and euro area are estimated by the OECD.

Sources: OECD; Bloomberg.

## Monetary Base

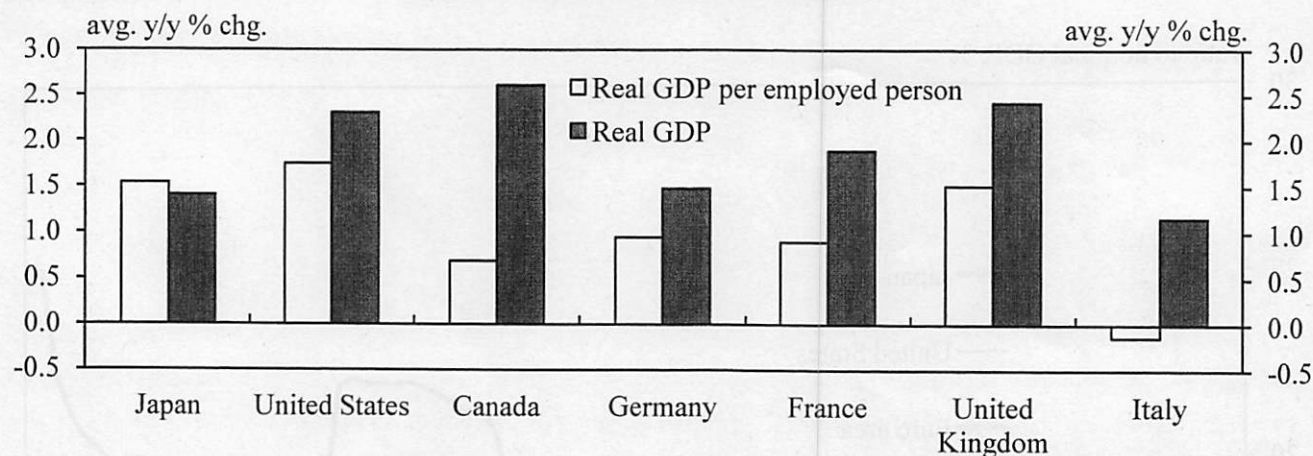


Note: Figures of nominal GDP for 2011/Q3 are those of 2011/Q2.

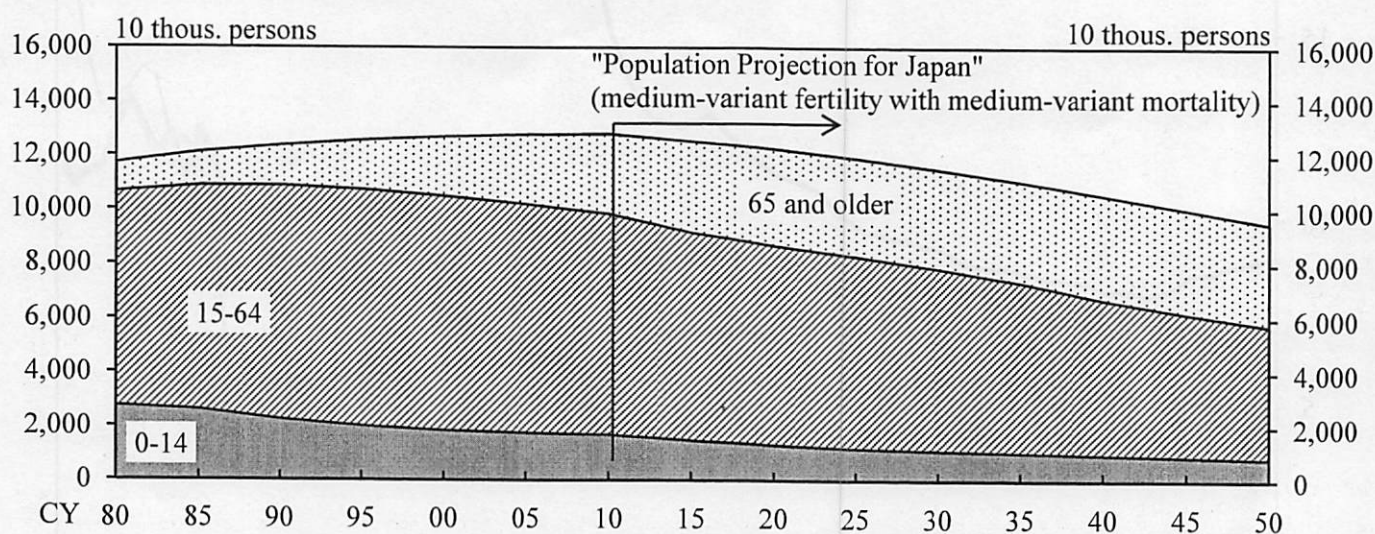
Sources: Cabinet Office; Bank of Japan; FRB; BEA; ECB; Eurostat.

## Population Growth and Economic Growth

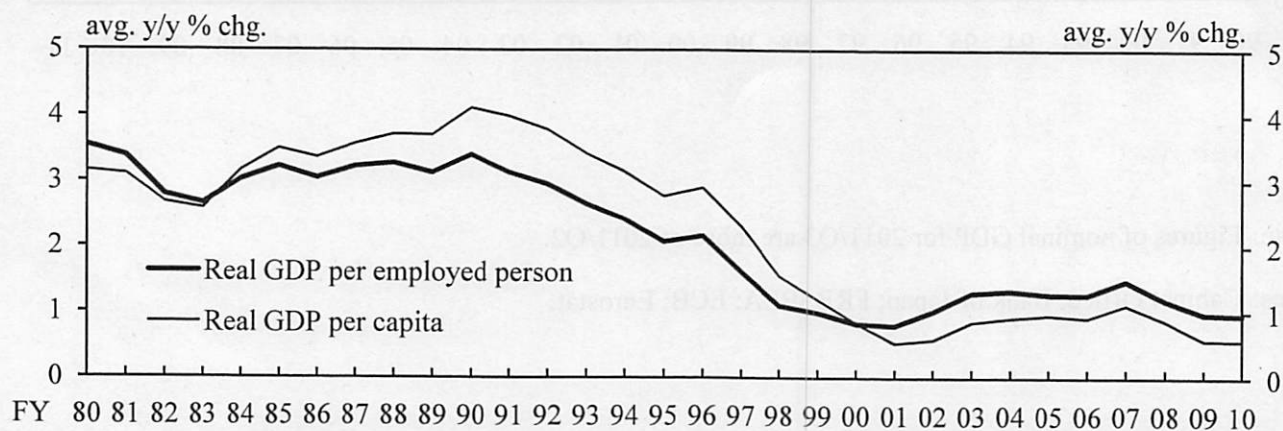
### (1) Growth Rates of Real GDP and Labor Productivity in G7 Countries



### (2) Demographic Trends in Japan



### (3) GDP per Capita and GDP per Employed Person












Note: Figures are the ten-year backward moving averages.

Sources: Ministry of Internal Affairs and Communications, "Population Estimates," "Labour Force Survey"; Cabinet Office, "National Accounts"; National Institute of Population and Social Security Research, "Population Projection for Japan: 2006-2055 (December 2006)"; OECD, "Economic Outlook."



## Economic Assessment by Region (Regional Economic Report)

Region	Assessment in July 2011	Changes from the previous assessment	Assessment in October 2011
Hokkaido	The economy remains under downward pressure due to the disaster, but there have been some signs of a pick-up.		The economy has been picking up as a whole, although some signs of severity are observed.
Tohoku	Although the economy deteriorated substantially due to the disaster, moves toward the normalization of economic activity are proceeding steadily, albeit with differences among areas, reflecting progress in the restoration of social infrastructure as well as production and business facilities.		The economy has been recovering as a whole, as evident from the following factors: (1) economic activity in non-stricken areas has exceeded pre-earthquake levels due to the demand stemming from the disaster; and (2) even in some of the stricken areas there are signs of resumption in economic activity.
Hokuriku	The economy has begun to pick up as a whole, although some signs of severity are observed.		The economy continues to pick up as a whole, although some signs of severity are observed.
Kanto-Koshinetsu	Although the economy continues to be in a severe condition, there have been signs of a pick-up, albeit with differences among areas and industries, as supply-side constraints ease and household and business sentiment improves.		The economy has been picking up steadily, albeit with differences among areas and industries.
Tokai	The economy seems to be picking up gradually, although it remains in a severe condition.		The economy is picking up.
Kinki	The economy is on a moderate recovery trend, but the effects of the disaster have been observed mainly on the production side.		The economy is on a moderate recovery trend, but the effects of the slowdown in overseas economies have begun to be observed in some segments of the economy.
Chugoku	The economy is beginning to pick up, as downward pressure on production caused by the disaster has begun to ease.		The economy has been picking up, aided by the removal of supply-side constraints caused by the disaster.
Shikoku	The economy has been picking up. Meanwhile, downward pressure observed after the earthquake has been easing.		The economy has been on a pick-up trend as a whole, although there appear to be some signs of relative weakness.
Kyushu-Okinawa	The economy has begun to pick up compared with the situation immediately after the earthquake, as downward pressure caused by the effects of the disaster has begun to ease.		The economy has continued to pick up as a whole, although there appear to be some signs of relative weakness in private consumption and production.

Note: The Regional Economic Report (summary) is available on the Bank of Japan's web site (<http://www.boj.or.jp/en/research/brp/rer/rer111020.htm/>).

Source: Bank of Japan, "Regional Economic Report (Summary) October 2011."