

Kazumasa Iwata: Recent economic and financial developments

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The references can be found on the Bank of Japan's website.

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It is an honor to be invited to speak at this seminar sponsored by the Center for Financial Industry Information Systems. Today, I will talk about recent economic and financial developments in Japan with special focus on deflation and monetary policy. At the outset, I should say that the views expressed here are those of my own and do not reflect those of my colleagues on the Policy Board or the Bank of Japan.

I. Third economic recovery since the bursting of the bubble

During the current recovery, which started in January 2002, real GDP has grown at an annualized rate in the mid-2 percent range, and increased for six consecutive quarters. This is the third recovery since the bursting of the bubble. The first was from October 1993 through May 1997, and the second from January 1999 through October 2000.

Let me describe the current recovery by comparing with the two previous ones.

First, exports and business fixed investment are the driving forces as was the same in the two previous recoveries. Although in terms of contribution to GDP growth business fixed investment is playing a greater role than net exports, the recovery in industrial production and business fixed investment is in fact triggered by the increase in exports. In the meantime, domestic demand is generally sluggish because of adjustment pressures on balance sheets as well as equipment and labor.

In the current recovery, China, in addition to the United States, is greatly contributing to the increase in exports. This is in contrast to the second recovery from 1999 through 2000 during which period imports from China played an important role. Other Asian countries are also contributing to the increase in exports from Japan in the current recovery.

Second, in terms of inventory cycle, the current recovery resembles the first. In the first recovery from 1993 through 1997, the economy was about to enter an inventory adjustment phase against the backdrop of the rapid appreciation of the yen against the U.S. dollar in 1995. However, once the yen started to depreciate, the economy began to see increasing inventory investment from a very low level. In the current recovery, inventory is at a historically low level, and the inventory to shipment ratio is following a similar pattern as in 1995 (Chart 1). Thus, inventory investment is expected to increase as production and shipments rise. In the United States, inventory is also at a low level, and inventory investment is expected to increase, thus offsetting the slowdown in the growth of final demand until mid-2004.

Third, the business fixed investment cycle in the current recovery is following a similar pattern as in the second recovery from January 1999 through October 2000. According to the September *Tankan*, business fixed investment plans of large manufacturers for fiscal 2003 are expected to increase 11 percent in nominal terms. This rate of increase is almost the same as that of large manufacturers for fiscal 2000.

The 11 percent increase in business fixed investment is quite high in real terms when we consider the decline in prices of fixed investment goods. In fact, the deflator for business fixed investment fell 5.8 percent year on year in the July-September quarter. This deflator may overstate the decline in prices of fixed investment goods, as I will discuss later. If we assume that the true extent of price decline is half of the observed data, the 11 percent increase in business fixed investment in nominal terms will be translated into an approximate 15 percent increase in real terms.

The current expansion of business fixed investment centers on IT-related investment as was the case in the second recovery, though the range of products is much wider. Such investment is related to not

only semiconductors but also new household electronic products, including digital cameras, plasma display panel television sets, and DVD recorders. An increase in renewal investment is also being planned in the steel and chemical as well as transportation industries. This is against the background that exports to China are increasing not only in the IT-related goods area but also in heavy industries such as steel and chemicals, and that equipment in the manufacturing sector has become obsolete. Current business fixed investment has declined to roughly the same as that of fixed capital consumption. If we apply the business cycle theory of Hicks, Japan's business fixed investment has bottomed out and is starting to expand. Furthermore, it is an encouraging sign that a number of small firms, among both manufacturers and non-manufacturers, plan to increase fixed investment reflecting the recent improvement in business sentiment.

The current recovery is similar to the previous two recoveries in that it greatly depends on the recovery of the world economy, particularly the economies of the United States and China. However, it seems more robust than the previous two recoveries because this time cyclical factors in the domestic economy, such as inventory and fixed investment, are gaining momentum.

II. Sustainability of recovery and risk factors

Private forecasts of real GDP growth for fiscal 2003 and 2004 are generally lower than the Bank's forecast in the mid-2 percent range for both years as presented in *Outlook and Risk Assessment of the Economy and Prices* (hereafter the Outlook Report) in October 2003.

However, private forecasts for fiscal 2003 are currently being revised upward. This is because the annualized growth rate of real GDP increased by 1.4 percent in the July-September quarter, higher than private forecasts of zero percent or a slight increase based on the slowdown in private consumption due to the cool summer. After revision, real GDP growth for fiscal 2003 may reach close to 2.7 percent, which is the highest among the nine Board members' forecasts in the Outlook Report published in October.

One of the reasons why private forecasts for fiscal 2004 are more pessimistic than the Bank's forecast is that they anticipate inventory adjustment or a slowdown in business fixed investment. As I mentioned, the current recovery is fairly robust thanks to the favorable impact of the cyclical upturn in inventory and fixed investment. In fact, the more than 10 percent annualized rate of increase in exports during the July-September quarter is supporting the growth of industrial production.

Another reason for pessimistic private forecasts is that the U.S. economy may rapidly slow down in mid-2004 after the effects of recent tax cuts have run their course. However, labor productivity growth has been quite remarkable, recording 7.0 percent and 9.4 percent on an annualized basis in the second and third quarters of fiscal 2003, respectively. Of course, such rapid growth will not be ever-lasting, but it is expected to remain relatively high for all industries, including services industries, in the fourth quarter and thereafter. Productivity growth would improve corporate profits, which would not only finance business fixed investment but also contribute to an increase in wages. An increase in total household assets aided by a rise in employment and wages as well as in stock prices could offset the waning effect of tax cuts in the middle of next year. Thus, the U.S. economy is highly likely to continue growing at around 4 percent from the fourth quarter of this year through the end of next year.

China and other Asian economies are rapidly recovering. The euro area has hit bottom and is expected to be on a growth track of around 1.5 percent in 2004 as business sentiment improves. As a result, 2004 could be a year of synchronized recovery in the world economy.

The main obstacles to this scenario are the rapid depreciation of the U.S. dollar and geopolitical risks.

Many argue that the stronger U.S. dollar causes a widening of the U.S. external imbalance. However, it is the income effect from the growth of trading partners, not the price effect of the exchange rate that is far more effective in correcting the external imbalance. The situation where the U.S. economy continues to be the sole engine for growth is not desirable for a sustainable recovery of the world economy. Hence, it is a top priority policy agenda for Japan, other Asian countries, and also European countries to achieve a full-fledged economic recovery.

A rapid depreciation of the U.S. dollar would reduce capital inflows to the United States, and lead to the fall of both bond and stock prices, which would, in turn, weaken momentum for economic recovery.

Since 1985, Japan's current account to nominal GDP ratio has hardly changed from around 3 percent in spite of large fluctuations in the yen exchange rate from 260 yen to 80 yen against the U.S. dollar.

This shows that the size of a country's external imbalance over the medium to long term is determined by the difference from the rest of the world in terms of such fundamental determinants for economic growth as technological progress, population growth, and national savings rates.¹

III. Economic growth rate and bias in the price index

From the viewpoint of overcoming deflation, we need to understand the bias in the price index as well as how it relates to changes in the relationship between real growth and potential growth. If there is no bias in the price index and real GDP growth exceeds potential growth by about 1 percent for two years, we will have the possibility of escaping from deflation in view of the relationship between the pace of narrowing output gap and current size of the output gap.² To the contrary, if the price index bias is large and real GDP growth is overvalued compared with potential growth, the output gap will not narrow and it will be difficult to escape from deflation.

Economists have long been debating the "index problem," namely what the true cost of living index is and which price index is the closest to it. Regrettably, no ideal price index exists. Among various price indices, the Fisher chain-weighted price index has been considered to be relatively close to the ideal price index. It is the geometric average of a Laspeyres price index with base-year weighting and a Paasche price index with current-year weighting.

The CPI and the corporate goods price index (CGPI) in Japan are Laspeyres indices based on weightings in 2000. On the other hand, the GDP deflator is a Paasche index based on 1995 weightings in National Income Statistics, which is obtained by dividing nominal GDP by real GDP. The fact that real GDP has a base year preceding that for the CPI does affect the price index bias.

While a Laspeyres price index tends to overstate the increase in the cost of living, a Paasche price index tends to overstate the decline in the cost of living.³ A Laspeyres price index has an upward bias because it does not necessarily incorporate the shift of consumer behavior from more expensive goods to less expensive ones as prices of various goods change to a different extent over the years (intertemporal substitution effect). Other factors contributing to this bias are (1) the increase in new products, (2) the increase in discounted products and sales campaigns, and (3) qualitative changes due to diversification and technological innovation. To the contrary, a Paasche price index has a downward bias because it takes account of the substitution effect by putting a relatively smaller weighting on goods whose prices have been increasing, thereby overstating the decline in the cost of living.

Real GDP growth may be overstated since the GDP deflator, which is a Paasche price index, overstates the decline in the cost of living.

How great is the bias in the Paasche price index? During the July-September quarter of 2003, the private consumption deflator fell 1.4 percent, and the underlying trend of core CPI fell around 0.5 percent⁴ (Chart 2). The difference between the deflator and the core CPI was about 1 percent. All

¹ Hamada and Iwata (1989) analyzed the external imbalance of Japan and the United States using a neo-classical growth model in an open economy, and found that the observed imbalance was smaller than that suggested by the model. The difference was likely attributable to the preference of residents to hold domestic assets rather than foreign assets ("home bias") and also the existence of non-tradable goods.

² The acceleration or deceleration of inflation depends on not only the current size of the output gap but also the difference between the actual real GDP growth rate and potential growth rate. This can be derived from the Phillips curve and the formation of expectations for expected inflation. The year-on-year rate of increase in the core CPI was minus 0.8 percent in fiscal 2002, turning to plus 0.1 percent in October 2003. Special factors such as a tobacco tax hike, an increase in medical treatment costs, and a rise in rice prices pushed up the CPI in October 2003 by 0.4 percent to 0.5 percent. The remaining improvement compared with the CPI in fiscal 2002 was due to the following. The price increasing effect of a reduction in the output gap, that is, real GDP growth being higher than potential growth, outweighed the price-reducing effect stemming from the output gap itself. I express my appreciation to Mr. Laurence Meyer for his insight that the change in inflation depends on not only the level of the unemployment rate but also change in the unemployment rate.

³ In retrospect, the history of the "index problem" reveals that a Laspeyres price index indicates the maximum value of a true cost-of-living index, and a Paasche price index its minimum. In terms of production, a Laspeyres price index indicates the minimum value of a production possibility index for a given level of production, and a Paasche price index its maximum. For discussion of the "superlative index," see Diewert (1976) and Sakuramoto (1999).

⁴ In Japan, the year-on-year rate of increase in the core CPI was higher than that in the private consumption deflator and the GDP deflator in the 1990s, though there had been little difference between these three indices in the preceding period. There seems to have been a large difference between the three indices since the mid-1990s when deflation measured by

of this cannot be regarded as the bias in the Paasche price index because CPI, which is a Laspeyres price index, has an upward bias. The Fisher price index is less biased than other price indices. Considering that it is the geometric average of the Paasche and Laspeyres price indices, we may say that the size of a downward bias in the private consumption deflator, which is a Paasche price index, is roughly a half of one percent. If the difference of decline between the business fixed investment deflator and the price index for business fixed investment goods in the CGPI was 3 to 4 percent, a downward bias in the business fixed investment deflator would be about half of this difference.⁵ Accordingly, both the downward bias in the GDP deflator in National Income Statistics and upward bias in real GDP growth lie between 0.5 percent and 1 percent. Personally, I think both of these biases are closer to 0.5 percent.

The potential GDP growth rate is estimated from observed real GDP data in National Income Statistics. Roughly speaking, the trend of real GDP growth rates in the past is used as the potential growth rate. In the White Paper on Economic and Fiscal Policy Management for fiscal 2003, the potential growth rate is estimated at around 1 percent, which has an upward bias.

It should be noted that the qualitative improvement in products due to technological innovation has been captured more appropriately and reflected in GDP data since 2000 when the wholesale price index (WPI) was changed to the CGPI. However, from 1995 to 2000, the WPI was still used in National Income Statistics, and the improvement in quality and productivity due to technological innovation was not captured as well as it has been since 2000. If the increase in productivity were substantial during this period, the potential growth rate would be understated.

Considering an upward bias due to the Paasche price index and understatement due to the WPI, we should use the current estimate of the potential growth rate as it is until structural adjustment is complete. When structural adjustment has ended, the effect of productivity improvement due to the IT revolution may materialize, raising the potential growth rate to 1.5 percent to 2 percent as recently asserted by Jorgenson (2003).

To summarize, we will have better prospects of overcoming deflation as the output gap narrows if the following two conditions are fulfilled: (i) the real growth rate exceeds the potential growth rate by 1 percent after taking account of the Paasche price index bias for the two years of structural adjustment period, designated by the government; and (ii) the output gap remains around 1 percent.⁶

In addition, the higher-value-added new products in the manufacturing industry, the recovery of pricing power through consolidation and integration in raw material industries, and the stronger preference of the household sector for higher-value-added products suggest that a business model with new value-added-products are in the process of being created after a period of price destruction. This also contributes to overcoming deflation.

IV. Four prescriptions for overcoming deflation

So far, I have discussed the possibilities of overcoming deflation based on the data. Turning to the theoretical aspect, let me introduce the following four prescriptions for overcoming deflation:

- (i) The central bank purchases a large amount of foreign bonds, targeting a given exchange rate to achieve a desirable inflation rate.
- (ii) The central bank purchases a large amount of government bonds, targeting a desirable inflation rate.
- (iii) The central bank increases the monetary base in an appropriate manner with the support of fiscal policy, targeting a desirable price level.

the GDP deflator began. It will probably be worthwhile examining the extent of difference between the three indices once the economy returns to a normal situation.

⁵ Morgan (2003) focuses on the difference between the fall in the business fixed investment deflator and the decline in business fixed investment goods prices in the Corporate Price Index, and asserts that 50 percent of the annualized growth rate of 3.9 percent during the April to June period was due to the distortion of price indices.

⁶ The output gap that may trigger inflation is shown in Chart 3.

- (iv) The central bank increases the monetary base, aiming at desirable rates of inflation and potential growth in the medium to long term, under fiscal policy targeting a zero primary balance.

Svensson (2001) proposed the first prescription. He argues that the central bank should continue purchasing foreign bonds by creating money to achieve a target exchange rate consistent with a target inflation rate. Or, the country should adopt a crawling peg exchange rate system, in which the exchange rate depreciates by the same amount as the difference between inflation at home and abroad. This prescription aims at overcoming deflation by raising import prices with lower exchange rates.

Auerbach and Obstfeld (2003) proposed the second prescription. They argue that a target inflation rate is announced beforehand, and the central bank continues purchasing government bonds through money market operations until the target inflation rate is achieved. They focus on a combination of the future increase in monetary base and the current positive long-term interest rates. The latter indicates that market participants expect short-term interest rates to become positive in future.

Eggertsson and Woodford (2003) as well as Bernanke (2003) proposed the third prescription. They argue that the central bank should increase monetary base in an appropriate manner with the support of fiscal policy to achieve a target price level. For example, the target price level can be set at a level immediately before the CPI begins to fall. For example, a money-financed tax cut is one promising policy measure. This is a path dependent policy in which a larger increase in inflation becomes necessary if the target price level is not achieved.

I personally recommend the fourth prescription, which can be applied to the Japanese economy. Let us assume the following. Japan's potential growth rate is between 1 percent and 1.5 percent over the medium to long term, and that a desirable inflation rate is between 1 percent and 2 percent in terms of the core CPI. The central bank increases the monetary base, while paying due attention to the change in the trend of the income velocity of money, to realize both the potential growth rate and desirable inflation. Fiscal policy is implemented to achieve a zero primary balance in the early 2010s. Under such circumstances, both the nominal balance of government bonds and the monetary base continue rising. The private sector can raise its utility by substituting the expected increase in the real balance of financial assets for consumption. Thus, private spending would increase.

A money-financed tax cut does not require the new issue of government bonds. Similarly, fiscal policy aiming at a zero primary balance does not require the redemption of existing government bonds by a future tax increase. The balance of government bonds remains in the future. This is a typical case of non-Ricardian fiscal policy. When non-Ricardian fiscal policy is implemented and the monetary base is increased, households would increase spending so that the future real balance of financial assets would not become too large.⁷ In fact, the household savings rate in Japan became negative in the most recent flow of funds survey. This may be partly due to temporary factors, but there is a possibility that the spending expansion mechanism that I just described may be at work for senior citizens and pensioners.

The year-on-year rate of increase in the monetary base is currently around 17 percent to 20 percent. This is large enough to realize Japan's potential growth rate and a desirable inflation rate over the medium to long term.⁸ If the central bank announces that it is prepared to increase the monetary base

⁷ The effect of increasing spending can be called the "intertemporal Pigou effect," which is independent from the portfolio rebalancing effect. Or, it can be called the "intertemporal Walras Law" because it focuses on the effect on budget constraint of the fact that the discounted present value of the real balance of debt of the government sector, which is equal to the discounted present value of the real balance of financial assets of the private sector, will not become zero even in the distant future. This effect is created because the private sector anticipates an increase in its wealth in the future. Another prescription similar to the one proposed in the speech is a combination of non-Ricardian fiscal policy and the policy of increasing the monetary base by k percent as suggested by Benhabib et al. (2002). My prescription differs from the prescriptions of Eggertsson and Woodford (2003) as well as Benhabib et al. because it focuses on the trend change in the income velocity of the monetary base, which is influenced by interest rate fluctuations, the rate of change in inflation, and the progress of nonperforming loan disposals.

⁸ The decrease in the trend change in the income velocity of the monetary base is currently around minus 11 percent. Adding a desirable nominal growth rate as well as the difference between the desirable nominal growth rate and the actual nominal growth rate to the 11 percent would produce a desirable rate of increase in the monetary base, which would achieve the desirable nominal growth rate.

to the extent necessary to achieve medium- to long-term policy targets, the private sector will feel less uneasy about increasing spending, which, in turn, will make monetary policy more effective.

The Bank of Japan clarified its commitment to continue its quantitative easing policy, which began in March 2001, specifying the following from the viewpoint of enhancing transparency.

The Bank will continue its current quantitative easing policy until,

- (i) the underlying trend of the year-on-year rate of increase in the core CPI marks zero percent or higher for a few months, and
- (ii) the majority of Policy Board members forecast that the prospective year-on-year rate of increase in the core CPI will register above zero percent during the forecasting period.

These two conditions are necessary conditions. In some cases, the Bank may judge it appropriate to continue quantitative easing even if these conditions are fulfilled.

To overcome deflation, the Bank aims to stabilize not only short-term interest rates but also longer-term rates through its commitment to continue its zero interest rate policy in the future. This commitment is consistent with that regarding monetary base that I just described. We can strengthen the commitment by modifying the condition regarding the prospective rate of inflation in such a way that the Bank continues quantitative easing until the year-on-year rate of increase in inflation reaches 1 percent. This 1 percent is the lower bound of the numerical target for price stability, which I think desirable from the viewpoint of adjusting an upward bias in the CPI and maintaining a sufficient buffer so that the economy will not easily fall into deflation again.

The announcement of a numerical target for price stability would stabilize people's expectations for the future, thereby stabilizing long-term interest rates and reducing the adjustment period to reach a new equilibrium with positive price increases.

Many aspects of my proposal have already been implemented. And, I believe we can raise the probability of overcoming deflation by combining the policy commitment effect and the monetary expansion effect.