Haruhiko Kuroda: Crude oil prices and price stability

Speech by Mr Haruhiko Kuroda, Governor of the Bank of Japan, at the Japan National Press Club, Tokyo, 27 February 2015.

* * *

Accompanying charts can be found at the end of the speech or on the Bank of Japan's website.

Introduction

Today, I am very pleased to appear before the venerable Japan National Press Club.

The Bank of Japan has been carrying out quantitative and qualitative monetary easing (QQE) to achieve a price stability target of 2 percent at the earliest possible time, with a time horizon of about two years. Amid this, Japan's economy has continued its moderate recovery trend, with prices rising accompanying the increase in corporate profits and employee income. However, the year-on-year rate of increase in the consumer price index (CPI) has slowed recently, reflecting the substantial decline in crude oil prices since last summer. In that situation, some opine that the Bank should take some time to achieve the price stability target of 2 percent while others think that 2% inflation is hard for the Bank to achieve in the first place.

Today, I will first briefly discuss the current situation of and outlook for Japan's economy. Then I will explain the recent conduct of monetary policy, mainly the thinking behind the price stability target and policy responses to the decline in crude oil prices.

I. The current situation of and outlook for Japan's economy

To start with, let me talk about the current situation of and outlook for Japan's economy. Japan's economy has continued its moderate recovery trend. Regarding the outlook, it is likely to continue growing at a pace above its potential given that exports are expected to increase moderately and that domestic demand is likely to remain firm. Positive effects from the decline in crude oil prices and the government's stimulus package that was formulated at the end of last year are likely to boost such favorable developments. According to the Bank's interim assessment in January of the October 2014 *Outlook for Economic Activity and Prices* (hereafter the Outlook Report), the Policy Board members' forecasts of the real GDP growth rate was minus 0.5 percent for fiscal 2014, but 2.1 percent for fiscal 2015, and 1.6 percent for fiscal 2016 (Chart 1).

I will discuss the following two key points in some detail. The first one is developments in exports and production in the corporate sector, and the second is developments in wages and private consumption in the household sector.

Corporate sector: developments in exports and production

Exports, which had been more or less flat for a long period despite the correction in the excessive appreciation of the yen, have finally been picking up recently (Chart 2). Looking at the developments by region, exports to the United States registered a sizeable increase, since capital goods and parts have increased in reflection of the recovery there in business fixed investment. Exports to Asia have also increased, mainly in IT-related goods and in capital goods and parts.

With regard to the outlook, overseas economies, mainly advanced economies, are expected to continue recovering moderately, boosted partly by the decline in crude oil prices. According to the *World Economic Outlook* (WEO) *Update* published last month by the IMF, global growth, after registering 3.3 percent for 2014, is projected at 3.5 and 3.7 percent for

2015 and 2016, respectively. As a whole, it is expected to increase gradually, albeit with a downward revision relative to the October 2014 WEO (Chart 3).

Looking somewhat closely at the developments in overseas economies by region, the U.S. economy is likely to be a driving force for global growth for the time being. Against the backdrop of a faster pace of increase in employment and a substantial decline in gasoline prices, private consumption has seen a firm increase. Since the firmness in the household sector has been feeding through to the corporate sector, the economy is expected to continue to recover solidly, led mainly by private demand. As for the European economy, momentum for the recovery has remained weak. Nevertheless, private consumption has been recovering steadily, albeit moderately, due in part to positive effects of the decline in crude oil prices, and exports have shown signs of picking up thanks to such effects as those of the depreciation of the euro. Against the background of those factors, a further slowdown in the economy has been staved off. Going forward, the European economy is expected to continue its recovery, albeit at a gradual pace, since effects of the successive monetary easing measures by the European Central Bank (ECB), such as the start to a purchasing of bonds issued by euro area central governments, are expected to underpin the recovery. The Chinese economy has been growing at a somewhat slower pace, but is likely to continue with generally stable growth underpinned by moderate improvement in external demand and the authorities' measures to support economic activity. Emerging economies apart from China and commodity-exporting economies as a whole have continued to lose pace, but their pace of growth is likely to pick up gradually as the recovery in advanced economies exerts positive effects.

Taking the above into consideration, Japan's exports are expected to increase moderately, as overseas economies continue to see moderate recovery, mainly advanced economies. That said, due attention needs to be paid to various uncertainties such as the outcome of the debt problem in Europe, including the developments in Greece, developments in the emerging and commodity-exporting economies facing structural issues or political instability, and geopolitical risks.

Against the backdrop of the pick-up in exports and resilience in private consumption as a whole, about which I will discuss in more detail next, production has been picking up due to the progress in inventory adjustments. Corporate profits have continued to improve, with the ratio of current profits to sales for major firms exceeding the level prior to the global financial crisis (Chart 4). In that situation, firms have maintained their positive stance in their business plans, and fixed investment is planned to be increased steadily following last fiscal year. Some firms have increased their share of domestic investment for this fiscal year, and it has been noticeable in media reports recently that firms that relocated production sites overseas amid the phase of the appreciation of the yen have started to attach importance to domestic production. Going forward, against the backdrop of a moderate recovery trend in the economy, an increase in exports, and the decline in crude oil prices, corporate profits are likely to continue improving and business fixed investment is projected to continue on a moderate increasing trend.

Household sector: Developments in wages and private consumption

Turning to the household sector, firms' positive stance has led to a tightening in labor market conditions and, accordingly, an improvement in the employment and income situation. With regard to firms' views on employment, even amid the sluggish economic recovery until last summer, the degree of labor shortage has risen further (Chart 5). In this situation, total cash earnings have risen moderately, albeit with fluctuations since last spring. Last year, the year-on-year rate of increase in scheduled cash earnings was positive, reflecting the revival of an increase in base pay at many firms, which had been lost for many years. This winter's bonuses also increased solidly. On the back of the rises in total cash earnings and the number of employees, employee income has been rising moderately. Private consumption as a whole has remained resilient against the background of steady improvement in the employment and income situation. Sales of durable consumer goods such as household electrical appliances, which had been affected by the decline in demand after the consumption tax hike for a protracted period, have been on an improving trend since early autumn. Going forward, private consumption is expected to remain resilient with the employment and income situation continuing to improve steadily.

As I have explained so far, with a virtuous cycle from income to spending likely to be maintained steadily in both the household and corporate sectors, Japan's economy is expected to continue growing at a pace above its potential.

II. The price stability target and quantitative and qualitative monetary easing

Next, I would like to talk about monetary policy. To start with, I will explain the thinking behind targets for price stability in some depth, referring to examples of such targets in other major economies.

A. Thinking behind targets for price stability

Many central banks including the Bank of Japan have been implementing monetary policy, aiming to achieve an inflation rate of around 2 percent (Chart 6). For example, central banks in such countries as Japan, the United Kingdom, Canada, and New Zealand have set 2 percent inflation as a target, and in the United States, the Federal Reserve has set a longer-run goal for inflation at the same rate. In the euro area, the ECB has presented a quantitative definition of price stability and expressed it in a numerical way, which is below, but close to, 2 percent. While there are various ways of how this is expressed, conducting monetary policy that aims at around 2 percent inflation has become a global standard.

Looking at developments in the CPI in these economies, even in the United States and the United Kingdom, where CPI inflation has been considered stable at the rate of around 2 percent, the rate has been moving in a rather wide range depending on the situation (Chart 7). In reality, the inflation rates in those economies have been centered at around 2 percent on average in the medium term. In other words, the inflation rate may move up and down according to cyclical factors such as the business cycle, fluctuations in commodity prices, and other factors. In such an environment, central banks have been conducting monetary policy to achieve the target level of inflation on average in the medium term, which often is equated with being over the business cycle. For example, during a press conference in January 2012 when the Federal Reserve announced its decision to adopt a longer-run goal for inflation at the rate of 2 percent, then-Chairman Bernanke said the following as part of his answer to a question: "'medium term' – which is, these targets are all medium term – is a flexible concept." The Reserve Bank of Australia specifies that "the appropriate target for monetary policy in Australia is to achieve an inflation rate of 2–3 percent, on average, over the cycle." In the case of New Zealand around the middle of the 1990s, when the central bank was strictly pursuing a target for price stability, its Policy Targets Agreement with the Minister of Finance included escape clauses, so to speak, or a range of events that would allow the central bank governor to be exempted from being held responsible for deviations from the target; for example, "shifts in the aggregate price level as a result of exceptional movements in the prices of commodities traded in world markets" and "a natural disaster affecting a major part of the economy."

In this way, each country views that the 2 percent inflation rate will be achieved on average over the business cycle. In line with this, what each central bank attaches importance to in conducting monetary policy are developments in medium- to long-term inflation expectations. This is because, if the medium- to long-term inflation expectations are anchored at around 2 percent – in other words, if firms and households act on the assumption that prices will increase by about 2 percent – it is likely that the target for price stability will be achieved on average in the medium term even if the inflation rate deviates from the target level as a result of being affected by the business cycle or temporary factors.

This view on the conduct of monetary policy was reflected well in the different responses taken by the Federal Reserve and the ECB to the substantial decline in crude oil prices since last summer. In general, a decline in crude oil prices exerts downward pressure on prices in the short term, but year-on-year effects will dissipate going forward. Moreover, from a longer-term perspective, the decline induces a positive effect of increasing the real purchasing power in an oil-importing country, and will eventually push up prices. Therefore, if firms' and households' medium- to long-term inflation expectations are anchored at the target level, which central banks aim to achieve, and the general public perceives that prices will revert to 2 percent sooner or later even if they fall temporarily, monetary policy responses are judged unnecessary since trend inflation is unchanged. In fact, the Federal Reserve maintains its policy stance of starting a liftoff of the federal funds rate even in a situation where the headline CPI inflation clearly is declining in reflection of the effects of falling crude oil prices. As the background to this, the January Federal Open Market Committee (FOMC) statement illustrated a view that "survey-based measures of longer-term inflation expectations have remained stable" and that, as for the outlook for prices, "[i]nflation is anticipated to decline further in the near term, but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of lower energy prices and other factors dissipate." As for Europe, the ECB recently decided an additional easing measure that includes a start to the purchasing of bonds issued by euro area central governments. As the background to this, President Draghi pointed out that the weak headline inflation dominantly driven by the fall in oil prices could adversely affect medium-term price developments through the second-round effects on wage and price-setting. As a matter of fact, in Europe, in a situation where the momentum of economic recovery is weak, the inflation rates have declined to a negative figure for the first time in about 5 years due to the effects of the fall in crude oil prices, and some indicators have started to suggest a decline in the medium- to long-term inflation expectations. Therefore, Europe is faced with a situation in which the public's perception that prices will increase by about 2 percent might be impaired, or in other words, a situation in which there is a risk that 2 percent inflation expectations might become de-anchored. The easing by the ECB was made in response to such risk.

B. The reason for aiming at achieving the price stability target of 2 percent at the earliest possible time

What I have outlined so far is the standard view on the target for price stability. The Bank's price stability target is basically in line with that view.

Nevertheless, the situation in Japan, on the basis of which monetary policy should be discussed, greatly differs from that in the United States and Europe. The challenge for the United States and Europe, on the one hand, is how to maintain inflation expectations, which already have been anchored at around 2 percent. On the other hand, the issue for Japan is to deliberately raise inflation expectations – which had been considerably below 2 percent during the years of deflation – through monetary policy.

Looking at the situation in Japan, the year-on-year rate of change in the CPI had been in negative territory or slightly above zero since the second half of the 1990s up until before the introduction of QQE. In other words, over the business cycle, it has been at around 0 percent on average. Amid protracted deflation over this long period, medium- to long-term inflation expectations declined, and consequently, a sense that prices would not increase became entrenched. Under these circumstances, firms' incentives to launch new initiatives through investing in business facilities and in research and development became reduced, because the holding of cash or deposits became a relatively better investment strategy. Thus, Japan's economy was deprived of vitality and this generated a vicious cycle in which the low vitality made it more difficult to overcome deflation. In order to escape from such a situation, it has become necessary to pursue a policy that quickly and drastically changes firms' and households' mindset that prices will not increase. To that end, what was introduced as a prescription was QQE. This policy aims at creating an economic situation where prices increase at around 2 percent on average, as is the case with the United States and Europe, by raising people's medium- to long-term inflation expectations to around 2 percent and re-anchoring these expectations at that level.

The mechanism of QQE is expected to be as follows: first, inflation expectations will be raised through a clear commitment and through a large-scale monetary easing to underpin the commitment; second, concurrently, downward pressure will be put on nominal interest rates through massive purchases of government bonds, thereby decreasing real interest rates and stimulating private demand such as business fixed investment. Namely, to start this mechanism, the Bank aimed at first igniting inflation expectations. Raising inflation expectations by changing people's deflationary mindset is itself an aim of overcoming deflation, and at the same time the key to implementing the mechanism of QQE.

Considering the unique situation facing Japan and the prescription for it, importance is attached to a "time frame" during which the target should be achieved, compared with the target for price stability in other countries. If the Bank had simply stated that it would achieve 2 percent inflation at some point in the future and that it therefore expects firms and households to change their actions, would those entities, which had experienced deflation for a long time, change their actions in belief of such a vague promise? I doubt it. It is because the Bank presented a time frame of achieving the price stability target at the earliest possible time with a time horizon of about two years, and made a clear commitment that it will do whatever is necessary to achieve that target that the perception of inflation by firms and households started to change and the mechanism of QQE started to operate.

This is why the Bank adheres to achieving 2 percent inflation "at the earliest possible time." After the inflation expectations are anchored at 2 percent, as in the case of the United States, pushing back the inflation rate to 2 percent can be achieved in a more relaxed manner. However, to raise inflation expectations to 2 percent, it is necessary to have strong enough levels of speed and momentum to change people's expectations. Deflationary equilibrium is a steady state, so there is gravity that pulls prices to the equilibrium. This is why deflation has been protracted for 15 years in Japan despite the cyclical economic fluctuations and monetary and fiscal stimulus measures. In order to escape from deflationary equilibrium, tremendous velocity is needed, just like when a spacecraft moves away from Earth's strong gravitation. It requires greater power than that of a satellite that moves in a stable orbit. Reaching orbit at an altitude of 1 percent, for example, which is lower than that for satellites of other countries, is not enough. This is because satellites at a low altitude can be pulled back by gravity. An altitude of 2 percent is a global standard employed by each country, and this level is set in view of experiences of monetary policy around the globe; namely, an upward bias of the CPI, which indicates inflation higher than the true inflation rate, and a buffer at a level that prevents falling into deflation.

In sum, the Bank's price stability target as a framework is no different from the targets for price stability employed in other economies. What is distinctive in Japan's case is that a stronger-than-usual measure is necessary in the phase of escaping from the deflationary equilibrium. The crux of QQE is to realize a rise in inflation expectations (or conversion of deflationary mindset) with sufficient speed and momentum through the Bank's commitment to achieve the price stability target of 2 percent at the earliest possible time and through a monetary easing measure of an unprecedented scale.

C. Assessing trend inflation

For these reasons, the Bank aims at achieving the 2 percent inflation rate at the earliest possible time. In this regard, we occasionally are asked which price index we use as a guideline for arriving at that figure. The Bank, as many other central banks do, defines the price stability target as the headline CPI. However, it should be noted that achieving 2 percent temporarily will not suffice. The Bank aims at maintaining the inflation rate at

2 percent in a stable manner. Therefore, it is necessary to judge trend inflation by identifying factors that are prone to fluctuate in the short term – such as commodity prices, including crude oil prices, and prices of fresh food – from developments in the CPI for all items. In doing so, it should be noted that each price index has both advantages and disadvantages, and there is no single index that appropriately reflects trend inflation for any given economic situation. The Bank has been assessing the CPI from various aspects, including that for all items less fresh food, that for all items less food and energy, the trimmed mean CPI, and the ratio of increasing and decreasing items. On this basis, the Bank's outlook for inflation presented in the Outlook Report and its interim assessment refers to the CPI for all items less fresh food, which has reflected trend inflation relatively well. Even so, as in the recent case of crude oil prices changing substantially, a problem arises that the outlook for inflation depends considerably on the assumption for the future path of crude oil prices. Against this background, in the January interim assessment, the Bank disclosed an assumption for the future path of crude oil prices, which was shared by all the Policy Board members in making their forecasts, as well as the contribution of energy items to the CPI based on this assumption, in an attempt to communicate the Bank's assessment of trend inflation more clearly.

In order to grasp trend inflation, a comprehensive assessment – based on examinations of various price indices, as well as the output gap and medium- to long-term inflation expectations and economic developments behind them – is necessary. Moreover, as for inflation expectations, it is important not only to monitor market-based indicators and surveys of firms, households, and economists, but also to analyze changes in the inflation rate perceived by the general public by examining firms' and households' actions, such as wage negotiations and firms' price-settings. This is because thoughts and actions by firms and households, not by traders in financial markets, actually influence economic and price developments.

D. Outlook for prices and monetary policy management

To conclude my speech, I would like to talk about the developments in prices and monetary policy management on the basis of the view on prices I have mentioned thus far.

The year-on-year rate of increase in the CPI for all items less fresh food for April 2014 had improved to 1.5 percent excluding the direct effects of the consumption tax hike, but its rate of increase slowed against the background of a substantial decline in crude oil prices since the summer, and the latest figure for the rate in January is 0.2 percent (Chart 8). In this situation, the Bank decided in October last year to expand QQE (the so-called additional easing). This decision was not made to respond to the decline in crude oil prices itself. It was made out of concern over a risk that the decline in crude oil prices affects inflation expectations through sluggish growth in the inflation rates, thereby delaying conversion of the deflationary mindset. As I mentioned earlier, a rise in inflation expectations is the start of the mechanism of QQE, and is also the key to its successful implementation. If people consider that the Bank is not serious about achieving the price stability target of 2 percent at the earliest possible time, QQE, which has been exerting intended effects so far, would not function properly anymore. Actually, the large reaction by markets after the additional easing suggests that the Bank's determination may have been questioned earlier. In any case, however, I believe such doubt was cleared after the easing.

Crude oil prices have been declining further even after October last year, but conversion of the deflationary mindset is proceeding steadily. Of the indices relating to inflation expectations, although market-based indicators such as the break-even inflation rates have declined in line with those in the United States and Europe, medium- to long-term inflation expectations have been maintained according to the results of surveys of economists. In terms of corporate behavior, negotiations between management and labor over a base pay increase seem to have progressed, and base pay is likely to rise for the second consecutive year this spring. We judge that, at the moment, manifestation of a risk that conversion of the deflationary mindset might be delayed has been prevented due to the easing measure in October.

The output gap, which is another determinant of trend inflation, has been improving mainly on the labor front, as seen in the fact that the unemployment rate has declined to around 3.5 percent, and is likely to follow an improving trend with the economy expected to continue growing at a pace above its potential. In this sense, the decline in crude oil prices is a supporting factor. Therefore, trend inflation rates are expected to rise steadily going forward and, as the effects of the decline in crude oil prices on a year-on-year basis dissipate, the 2 percent CPI inflation is likely to be achieved. The timing of this could be either earlier or later to some extent, depending on future developments in crude oil prices; however, based on the assumption that crude oil prices are expected to rise moderately from the recent level, the CPI is likely to reach 2 percent in or around fiscal 2015 (Chart 1). Needless to say, the Bank maintains its policy stance that it will make adjustments as necessary without hesitation, when there are changes in trend inflation, in order to achieve the price stability target at the earliest possible time. The Bank will not respond to developments in crude oil prices themselves, but in conducting monetary policy, it will closely monitor how they affect inflation expectations – or, in other words, whether conversion of the deflationary mindset will nevertheless proceed.

Thank you very much for your attention.

Chart 1

Outlook for Economic Activity and Prices (as of January 2015)

y/y % chg.

	Real GDP	CPI (all items less fresh food)	Excluding the effects of the consumption tax hikes
Fiscal 2014	-0.5	+2.9	+0.9
Forecasts made in October 2014	+0.5	+3.2	+1.2
Fiscal 2015	+2.1	+1.0	
Forecasts made in October 2014	+1.5	+2.4	+1.7
Fiscal 2016	+1.6	+2.2	
Forecasts made in October 2014	+1.2	+2.8	+2.1

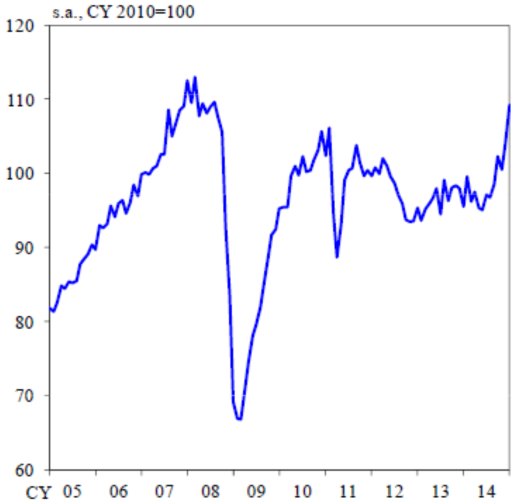
Note: Figures indicate the median of the Policy Board members' forecasts (point estimates).
Source: Bank of Japan.

1

Chart 2

Exports

Real Exports



Real Exports by Region

y/y % chg. s.a.; q/q % chg.

	2013	2014	2013 Q4	2014 Q1	Q2	Q3	Q4
United States <18.7>	2.8	1.6	-0.4	0.9	-2.3	-0.0	8.8
EU <10.4>	-3.6	5.0	2.2	0.6	0.5	-0.1	-2.1
East Asia <50.3>	-3.0	1.1	2.5	-1.5	-1.5	1.9	4.0
China <18.3>	-1.7	3.5	5.7	-3.9	-0.7	1.2	3.2
Others <20.7>	-5.0	0.9	-2.0	0.2	1.4	2.4	1.5
Real exports	-1.9	1.6	1.5	-1.0	-1.2	1.6	4.8

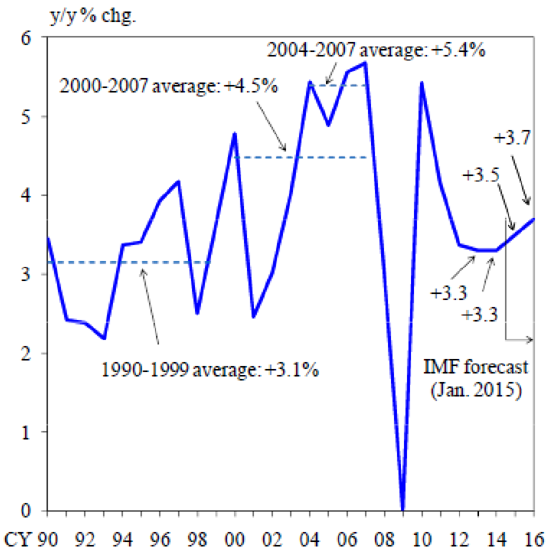
Note: Figures in angular brackets are shares of each region in 2014.
Sources: Ministry of Finance; Bank of Japan.

2

Chart 3

World Economy

Real GDP Growth Rate



Projections for Major Economies

y/y % chg.

	2013	2014	Projections 2015	Projections 2016
World	3.3	3.3	3.5 (-0.3)	3.7 (-0.3)
Advanced Economies	1.3	1.8	2.4 (0.1)	2.4 (0.0)
United States	2.2	2.4	3.6 (0.5)	3.3 (0.3)
Euro Area	-0.5	0.8	1.2 (-0.2)	1.4 (-0.3)
Japan	1.6	0.1	0.6 (-0.2)	0.8 (-0.1)
Emerging Market and Developing Economies	4.7	4.4	4.3 (-0.6)	4.7 (-0.5)
China	7.8	7.4	6.8 (-0.3)	6.3 (-0.5)

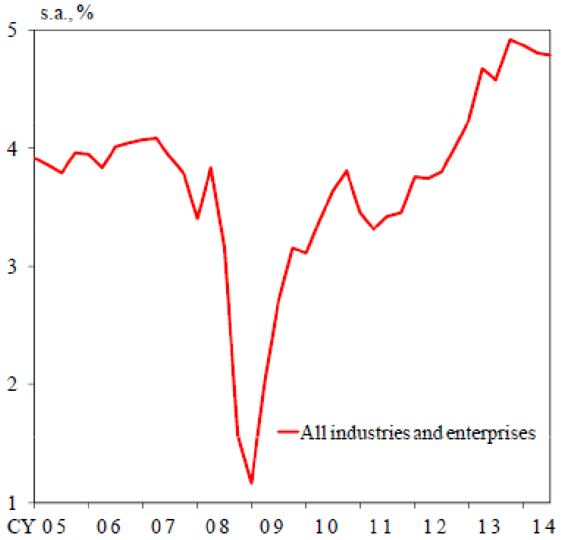
Note: Figures in parentheses are the difference from the October 2014 WEO projections.
Source: IMF

3

Chart 4

Corporate Profits and Business Fixed Investment

Ratio of Current Profits to Sales



Tankan: Business Fixed Investment Plans

y/y % chg.

		FY2013	FY2014 (Forecast)
Large Enterprises	Manufacturing	- 0.8	+ 12.2
	Nonmanufacturing	+ 4.4	+ 6.3
	All industries	+ 2.6	+ 8.3
Small Enterprises	Manufacturing	+ 17.1	+ 10.2
	Nonmanufacturing	+ 19.6	- 6.5
	All industries	+ 18.7	- 0.9
All Enterprises	Manufacturing	+ 1.1	+ 12.9
	Nonmanufacturing	+ 7.7	+ 3.2
	All industries	+ 5.3	+ 6.5

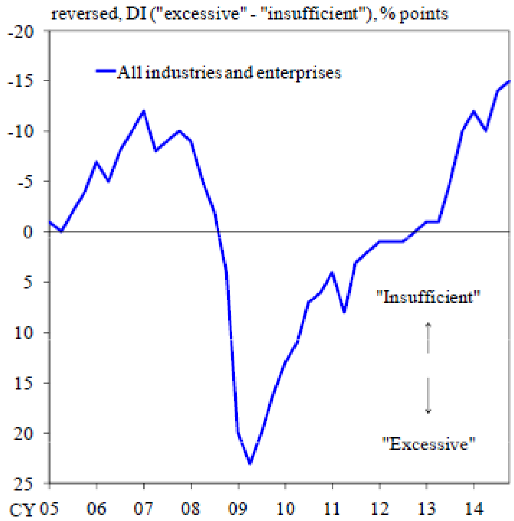
Note: Figures for business fixed investment plans of the *Tankan* include software investment but exclude land purchasing expenses.
Sources: Ministry of Finance; Bank of Japan.

4

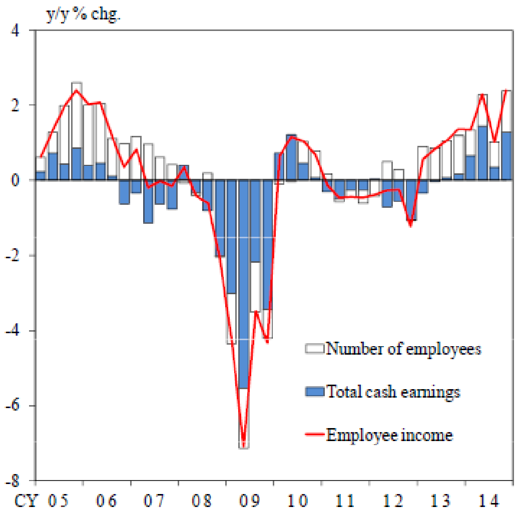
Chart 5

Employment and Income Situation

Tankan: Employment Conditions DI



Employee Income



Notes: 1. The followings apply to employee income: Q1 = March-May, Q2 = June-August, Q3 = September-November, Q4 = December-February. Figures for 2014/Q4 are those of December.
2. Figures for "employee income" are calculated as the "number of employees" (Labour Force Survey) times "total cash earnings" (Monthly Labour Survey).
Sources: Bank of Japan; Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare.

5

Chart 6

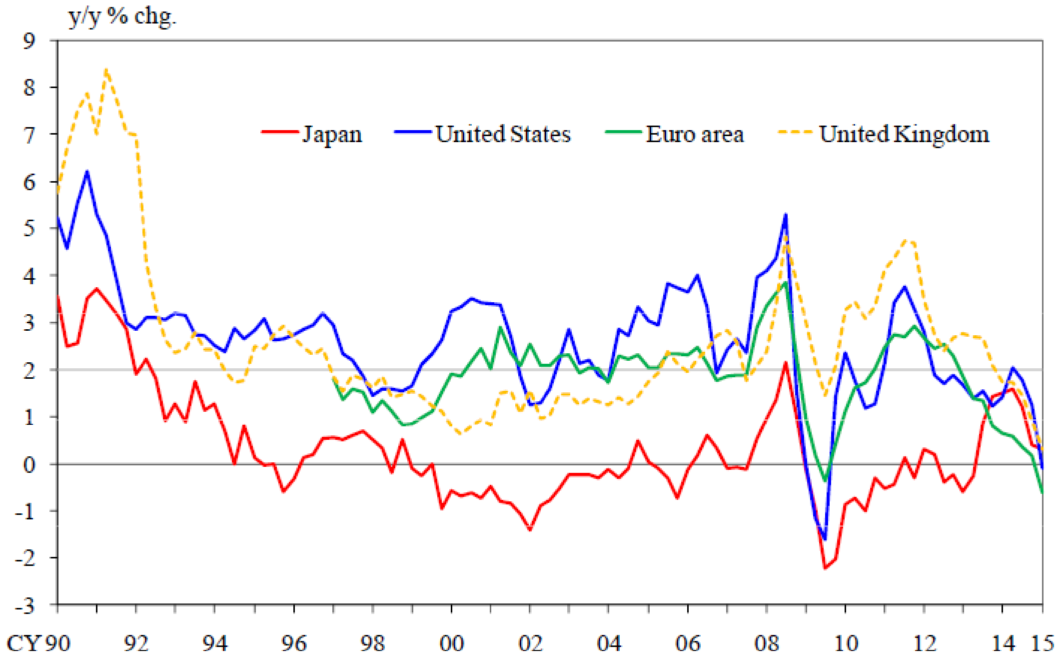
Price Stability in Various Economies

Country/Region	Expression	Reference Indicator	Numerical Definition
Japan	Price stability target	CPI (all items)	2%
United States	Longer-run goal	PCE inflation (all items)	2%
Euro area	Quantitative definition	HICP (all items)	Below, but close to, 2%
United Kingdom	Target	CPI (all items)	2%
Canada	Target	CPI (all items)	2% (midpoint of 1-3%)
Australia	Target	CPI (all items)	2-3%
New Zealand	Target	CPI (all items)	Near 2% (midpoint of 1-3%)
Sweden	Target	CPI (all items)	2%
Switzerland	Definition	CPI (all items)	Less than 2%

Note: "PCE" stands for Personal Consumption Expenditures, and "HICP" stands for Harmonized Index of Consumer Prices. 6

Chart 7

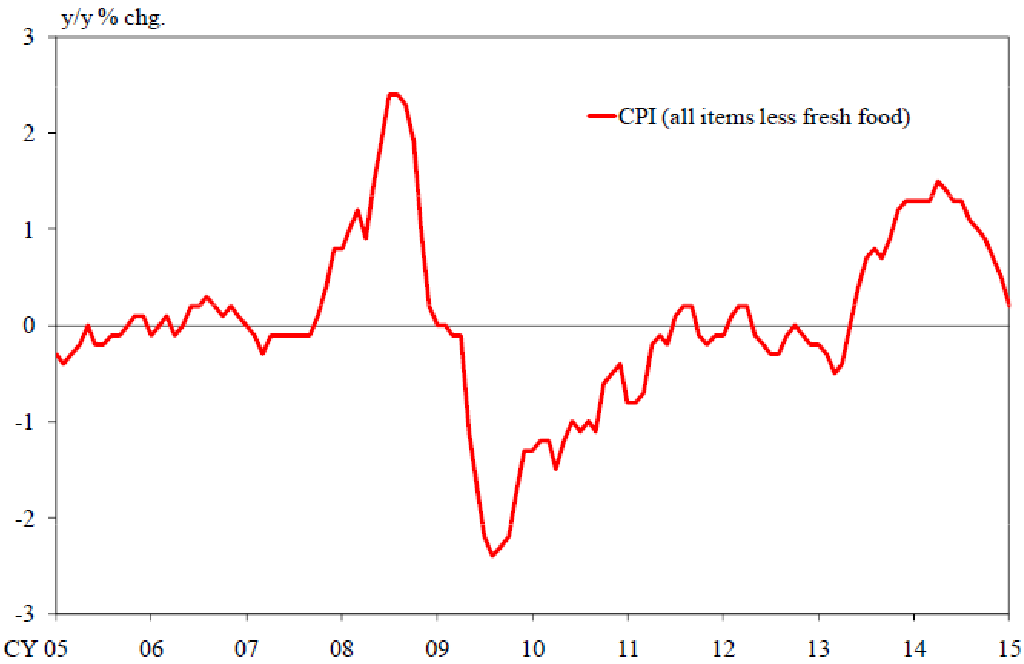
Headline Consumer Prices in Advanced Economies



Notes: 1. Figures for 2015/Q1 are those of January.
2. Figures for the CPI in Japan are adjusted to exclude the effect of changes in the consumption tax rate.
Sources: Ministry of Internal Affairs and Communications; BLS; Eurostat; ONS. 7

Chart 8

Consumer Prices



Note: Figures from April 2014 onward are calculated to adjust the direct effects of the consumption tax hike.
Source: Ministry of Internal Affairs and Communications.

8