

Kikuo Iwata: Purpose and mechanism of quantitative and qualitative monetary easing

Special lecture by Mr Kikuo Iwata, Deputy Governor of the Bank of Japan, commemorating the 50th Anniversary of the Institute of Economic Research, Chuo University, Chuo, 18 October 2013.

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Introduction

It is a great honor for me to give a special lecture to commemorate the 50th anniversary of the foundation of the Institute of Economic Research, Chuo University. I wish to extend my great respect to those who were involved in its foundation and activities, and thank you for inviting me to speak on such a distinguished occasion.

On April 4, the Bank of Japan introduced a new policy framework, called quantitative and qualitative monetary easing (QQE). It decided that it would continue with the QQE, aiming to achieve the price stability target of 2 percent in terms of the year-on-year rate of change in the consumer price index (CPI), as long as it is necessary for maintaining that target in a stable manner.

In my lecture today, I would like to answer the following three questions. First, why does the Bank aim to achieve and maintain the price stability target of 2 percent? Second, what is the transmission mechanism through which the QQE achieves and maintains its purpose? Lastly, is Japan's economy moving along the path that the Bank has anticipated?

I. Reason behind the price stability target of 2 percent

Let me start with the first question – namely, why does the Bank aim to achieve and maintain the price stability target of 2 percent?

The first answer is that deflation must be avoided once and for all. It squeezes corporate profits through price declines of goods and services. For this reason, unless companies manage to sell more goods and services, they will be put in a situation where they cannot pay their debts. Put differently, the real value of debts will increase as deflation continues. In light of an increasing real value of debts, firms become cautious in terms of their attitude toward business investment that requires fund-raising. As a result, production and labor demands of the economy as a whole will decline, leading to a rise in the unemployment rate and a decline in wages; hence, people's living standards will go down as well. On top of this, an inflation rate of about 1 percent is not necessarily enough as a buffer against the slightest risk of deflation.

The second answer to the question is the upward bias in the CPI. The price stability target refers to the CPI (all items excluding fresh food), which is considered to contain an upward bias of nearly +1 percentage point. As for the reason behind such a bias, it is pointed out that, in general, while households are more likely to reduce their consumption of those goods and services for which prices have risen, revision of the CPI only takes place every five years; hence, the CPI does not accurately capture changes in the composition of consumption until it goes through that revision.

Assuming that such an upward bias of nearly +1 percentage point exists, even if the CPI registers 1 percent on a year-on-year basis, the inflation rate in practice is likely to be close to zero percent. In other words, targeting an inflation rate of 1 percent could suggest that the aim is to achieve a deflationary environment or something close to it. This leads one to conclude that a target of a somewhat higher rate of change is necessary once the presence of such an upward bias is taken into account.

The third answer to the question of why the Bank aims to achieve and maintain the price stability target of 2 percent owes much to the fact that, from the 1990s up to now, the advanced economies that have maintained inflation rates of about 2 percent have shown relatively better performance, by registering higher economic growth and lower unemployment rates.

Taking all of these into consideration, it is also appropriate for Japan to aim for the price stability target of about 2 percent.

II. How to achieve the price stability target

Based on such understanding, the Bank has set the price stability target of 2 percent, and in order to achieve that target, it has embarked on a new phase of monetary policy – namely, the QQE. Put differently, the QQE is a bold means through which to achieve the price stability target of 2 percent.

Based on the better understanding of the relationship between the price stability target and the QQE, I will next talk about how the Bank aims to achieve that target through implementation of the QQE.

Two pillars of the QQE

The QQE consists of the following two pillars. The first is a “commitment” to early achievement of the price stability target of 2 percent. Specifically, the Bank is clearly committed to “achieving the price stability target of 2 percent at the earliest possible time, with a time horizon of about two years.”

The second pillar is the demonstration of “concrete actions” that underpin the first pillar’s commitment. These are well captured in the words “quantity” and “quality,” and changes have already been seen in the expansion (i.e., quantity) and composition (i.e., quality) of the Bank’s balance sheet.

In terms of the expansion of the balance sheet, the Bank will increase the monetary base massively through purchases of a variety of assets including Japanese government bonds (JGBs). It aims to almost double the amount outstanding of the monetary base in two years, from 138 trillion yen at end-2012 to 270 trillion yen at end-2014.

In terms of the composition of the balance sheet, the Bank will increase assets with relatively high risks. It now purchases JGBs in all maturities including those with super-long maturities of 40 years. As a result of this, the average remaining maturity of the Bank’s JGB purchases has been more than doubled, extending from slightly less than three years to about seven years. It is expected that the effects of policy accommodation on financial conditions and the real economy will strengthen through working on interest rates across the whole yield curve. On top of this, the Bank has increased the purchases of exchange-traded funds (ETFs) and Japan real estate investment trusts (J-REITs) in order to suppress risk premiums associated with those types of assets.

Impact on nominal interest rates and inflation expectations

Consisting of the two pillars that I have just explained, the QQE permeates the economy through nominal interest rates and the inflation expectations of financial market participants.

First of all, the Bank’s ample provision of liquidity to the private sector through the purchases of JGBs and other assets will lower nominal interest rates. Moreover, the QQE, with the commitment to the 2 percent price stability target, will lift market participants’ inflation expectations. Let me come back to this point later.

Both the downward pressure on nominal rates and upward pressure on inflation expectations will contribute to declines in the expected real interest rates, because the expected real

interest rates are derived by subtracting inflation expectations from nominal interest rates. This has an important implication for the economy.

Nonetheless, the upward pressure on inflation expectations is a double-edged sword: on the one hand, it is a factor contributing to declines in the expected real interest rates; on the other, it can lift up nominal interest rates. As I will explain shortly, the overcoming of deflation and the achievement of the 2 percent price stability target require that the expected real interest rates be maintained at low levels. It is therefore important that the extent of a pickup in nominal interest rates due to a rise in inflation expectations be lower than that of a rise in inflation expectations itself.

Why do inflation expectations rise?

I said at the beginning that the QQE will lift market participants' inflation expectations. The reason behind the lift in inflation expectations owes much to the market expectations that a sharp increase in the monetary base (i.e., the monetary base defined as the total of banknotes and coins in circulation and the amount outstanding of financial institutions' current accounts held at the Bank) in order to achieve the 2 percent price stability target, with a strong commitment, will eventually lead to an increase in bank lending, and hence an increase in the amount of money (i.e., sum of cash and deposits) circulating in the economy. If the money in the economy increases, people will expect that it will be used partly for the purpose of purchasing goods and services, and eventually the rate of inflation will start to pick up as well.

What is important in this context is that, even though an increase in money through an expansion of bank lending is not observed, inflation expectations could start rising on the back of an anticipated increase in money in the future.

Let us now look at recent developments in inflation expectations. While it is difficult to measure those expectations, as they are formed by a wide range of economic entities, break-even inflation – that is, the yield spread between fixed-rate coupon-bearing JGBs and inflation-indexed JGBs, and representative of the expected rate of inflation in the market – and figures collected from the results of surveys summarizing the views of researchers and economists at home and abroad show that inflation expectations are gradually rising as the QQE proceeds.

Moreover, according to the recent *Opinion Survey on the General Public's Views and Behavior* conducted by the Bank, the share of respondents who expected that prices will go up one year from now reached as high as 83 percent. This suggests that inflation expectations in the household sector are also on the rise (Chart 1).

Rise in inflation expectations generating rise in stock and foreign currency markets

The expected real interest rates are derived by subtracting inflation expectations from nominal interest rates. In the following, I simply refer to "real interest rates" instead of the expected real interest rates.

While nominal rates are those that can be seen, real rates represent the extent to which money – i.e., purchasing power – will increase in reality, taking account of price changes. If people expect that inflation is on the horizon, the expected purchasing power of those assets, such as cash – which does not yield any returns – as well as deposits and bonds – which have fixed returns – will go down.

Suppose the nominal rate of JGBs is 0.5 percent and the inflation expectation for the next 12 months is 1.0 percent. The real rate will then become minus 0.5 percent by subtracting the inflation expectation of 1.0 percent from the nominal rate of 0.5 percent. This example suggests that, even if the nominal rate is 0.5 percent, as long as the inflation rate remains at 1.0 percent, the purchasing power of JGB holdings after a year will go down by minus 0.5 percent. Likewise for cash, given that its nominal rate is 0 percent, the purchasing power

of cash holdings after a year will decline by 1.0 percent if the inflation rate is 1.0 percent. Indeed, the real rates derived from the JGB yields have been declining moderately as a trend since end-2012 (Chart 2).

As I explained, if people expect prices to go up down the road, the real rates of return from cash as well as deposits and bonds – for which interest rates are fixed – will decline. Holding those assets will become less attractive than in the past.

In light of such developments, market participants with rising inflation expectations will shift part of their portfolios from cash, deposits, and bonds including JGBs to equities (including equity trust funds), real estate and homes (including real estate investment trusts such as J-REITs) or, alternatively, foreign-denominated assets for which returns are higher than those derived from yen-denominated assets. As a result of this, expectations would be for stock prices to rise, the yen to depreciate, and foreign currencies to appreciate (Chart 3).

Increase in consumption and exports

Both rising stock prices and the yen's depreciation will lead to an increase in the value of household assets that are held in the form of either equities or foreign-denominated assets. According to recent statistics, the financial assets of households at end-June 2013 increased by 5 percent on a year-on-year basis. Looking at this in detail, while bonds decreased by 9 percent, shares and equities increased by 31 percent and investment trusts rose by 29 percent. The portfolio rebalancing that I just explained is actually taking place (Chart 4).

Households facing a rising value of assets are likely to increase their consumption, and this is called the “wealth effect.” In addition, a rise in asset values, such as those of stock prices, will make people's sentiment more upbeat. This improvement in sentiment is also an important factor in households increasing their spending. Household expenditure has been increasing since the beginning of this year, and this is largely due to the wealth effect that I just explained to you and the improvement in sentiment (Chart 5).

As for the appreciation of foreign currencies, while the first thing that comes to our minds is an increase in exports, one should be reminded of an increase in foreign tourists in Japan, which is also an important factor for expanding domestic services demand (Chart 6). We know that the number of foreign tourists has been rising more recently (Chart 7).

Increase in business fixed investment

Such favorable developments will also provide positive movements in firms' business fixed investment through different channels.

First, an increase in household spending will necessitate that firms produce more in line with increasing demand; thus, they will become more aggressive with their business investment. A rise in stock prices and the appreciation of foreign currencies will increase the net asset values of firms – mainly exporting firms – that hold other firms' equities and foreign currencies. This improvement in balance sheets will contribute to an increase in business fixed investment (Charts 8 and 9). According to estimates by Nomura Securities, the unrealized gains stemming from equity holdings of 1,830 listed firms increased by 32 percent, adding 3.7 trillion yen, from end-March to end-September 2013.

Moreover, the improvement in business sentiment on the back of an increase in corporate profits is another factor in increasing business fixed investment. The ratio of current profits to sales in the corporate sector has been rising since 2012 and business sentiment has continued to improve (Charts 10 and 11).

According to the recent data on business fixed investment, GDP statistics show an increase in such investment of 1.3 percent for the April-June quarter this year, thus marking the first such increase in six quarters. Likewise, based on the *Financial Statements Statistics of Corporations by Industry, Quarterly*, business fixed investment for all industries has been increasing since the October-December quarter last year. More specifically, while the year-

on-year rate of change in business fixed investment in manufacturing declined by 0.6 percent for the April-June quarter this year, the extent of the decline narrowed. By contrast, that in nonmanufacturing registered a large increase – 4.7 percent – for the same quarter, buoyed by an increase in household spending (Chart 12).

The relationship between cash flow and business fixed investment also shows that the latter is likely to follow an uptrend going forward (Chart 13).

Changes in industrial structure and entities undertaking business investment

Having said all this, it is likely that business fixed investment for large manufacturing firms will not increase at a pace as fast as those registered during the previous economic recovery phase in the early 2000s.

The recovery after the 1990s was driven by public investment and/or by the export-led manufacturing sector. On the contrary, economic recovery this time is mainly led by the domestic demand-driven nonmanufacturing sector. This suggests that Japan's industrial structure, like those of other large economies, is gradually changing and tertiary industrialization is in progress (Chart 14).

In consideration of this point, there is a possibility that the major bearer of business fixed investment will gradually shift from the manufacturing sector to the nonmanufacturing sector in the future. From the perspective of improving the extent of productivity enhancement through business investment, deregulation will become vital in the nonmanufacturing sector, in particular business sectors such as medical and nursing care, as well as agriculture, which is currently going through the sixth industrialization.

In addition, it is important to facilitate infrastructure in the metropolitan areas for the tertiary industry to flourish. Urban revitalization provides important underpinnings to start up new leading businesses. It will become an important issue to liberalize the floor-space ratio regulation as well as land-use regulation as part of a growth strategy.

Should this kind of growth strategy be adopted, it could further reinforce the effects of the QQE. This does not mean, however, that the price stability target of 2% cannot be achieved without the growth strategy, as the Bank is equipped with powerful means to achieve the target. What I wanted to say here is that, if the growth strategy becomes successful, we can achieve a higher real growth rate even with the same 2 percent inflation rate.

Improvement in labor supply-demand balance and increase in wages

All in all, against the background of increases in demand through consumption, business investment, exports, and public investment, the real GDP for the January-March and April-June quarters this year grew at a brisk pace – 4.1 and 3.8 percent, respectively, on an annual basis. In the April-June quarter, both consumption and exports each contributed to its quarterly growth rate by 0.4 percentage point, and business fixed investment and public investment each contributed by 0.2 percentage point.

In this circumstance, the unemployment rate declined to just under 4 percent in July and the active job openings-to-applicants ratio reached nearly 1 (0.95 in August). These figures suggest that the supply and demand balance in the labor market is moving in a favorable direction for employees (Chart 15). To be sure, the unemployment rate in August was 4.1 percent, somewhat higher than that in July. However, this was due to the fact that entry into the labor market increased on the back of improvement in the labor condition and that some people left their jobs voluntarily in an effort to look for better job offers. In sum, the uptick in the unemployment rate in August was a temporary phenomenon. The September Tankan survey also shows that the employment conditions DI was in the domain of “insufficient employment” rather than “excessive employment,” and this suggests that the supply and demand balance in the labor market has been tightening.

As for wages, while scheduled cash earnings are yet to increase, the number of employees has started to rise and both non-scheduled cash earnings and special cash earnings (bonuses) have increased. As a result, employee income has started to increase (Charts 16 and 17). Due to such tightness in the supply-demand balance in the labor market, wages are expected to rise even further.

A rise in income will lead to an increase in consumption, improving the supply-demand balance in the labor market and increasing employee income. This will further boost consumption; hence, the virtuous cycle prevails (Chart 18).

Developments in the CPI

As for prices, along with a rise in import prices and energy prices due to the yen's depreciation, the extent of price declines for durable goods, which have continued to decline, has started to narrow against the backdrop of resilient consumption. As a result, the year-on-year rate of change in the CPI (all items excluding fresh food) registered 0.7 percent and 0.8 percent, respectively, in July and August. Excluding both fresh food and energy, the CPI declined by 0.1 percent in July and August year on year, and the extent of the decline since February has continued to narrow (Chart 19). Recent developments in the CPI reflect the narrowing of the output gap (Chart 20).

As such, once the actual CPI starts to rise, the inflation expectations of households and firms will be reinforced, and this will accelerate an increase in consumption and investment. Furthermore, a rise in actual inflation will shift the Phillips curve upward through a rise in inflation expectations (Chart 21).

As I have explained based on a number of indicators, Japan's economy is judged to be on the verge of escaping from the deflation that has lasted for a long time, and it is recovering moderately.

Going forward, I expect that the continuation of the QQE, aiming to achieve the 2 percent price stability target on a stable manner, will help Japan's economy recover steadily, lead to an inflation rate close to 2 percent accompanied by wage rises, and achieve the overcoming of the deflation that has lasted for nearly 15 years.

III. Excess reserves and inflation

From a somewhat different perspective, I will now respond to criticisms raised regarding the Bank's policymaking. More specifically, I would like to examine the rationale behind the hypothesis that inflation cannot be attained no matter how much the Bank increases the monetary base because its liquidity injection will only increase the excess reserves of financial institutions and not increase the amount of money in the real sector.

First, let us review what occurred in the past: inflation expectations observed in the JGB market declined sharply after the Bank lifted its quantitative easing on March 9, 2006 (Chart 22).

More recently in the United States, nominal rates went up, inflation expectations came down, and the expected real rates picked up after market participants started forming a view that the Fed would start tapering the pace of its asset purchases in light of Chairman Bernanke's testimony on May 22, while in reality this was meant to slow the pace of increase in excess reserves. By contrast, the FOMC's decision to continue with its quantitative easing on September 18 led to a decline in nominal rates, a rise in inflation expectations, and a decline in the expected real rates (Chart 23).

What should we make of these episodes? In my view, they owe much to the fact that market participants make judgments on the monetary policy regime after they see changes in the monetary base and the excess reserves, and then form projections for the money stock, the future course of interest rates, and projections for prices.

What matters to interest rates and inflation expectations is the monetary policy regime of a central bank and market participants' views on the prospects for the money stock based on such a regime. The current level of money stock is irrelevant. It is in this sense that the simple "quantity theory of money," in which there is a one-to-one relationship between the current money stock and prices, does not hold in practice. Nonetheless, there is a close relationship between the projected future course of the money stock and inflation expectations, and the present rate of inflation is determined based on inflation expectations formed in that way.

IV. Risks and monetary policy

Lastly, I would like to touch on risk factors that could suppress the effects of the QQE. These are mainly overseas factors, and they are regarded as downside risk.

In the euro area, the real GDP growth rate finally turned positive in the April-June quarter of this year. As there is not a sufficient mechanism to segregate the negative feedbacks among fiscal policy, monetary policy, and the real economy, one cannot exclude the possibility that the worsening situation in financial markets – triggered by an event in peripheral countries – would put downward pressure on the euro area, thereby leading to a decline in Japan's exports to that area.

As for the U.S. economy, while the downside risk is diminishing, the U.S. federal government's fiscal policy continues to be a major downside risk and a constraint on U.S. economic growth. Discussion pertaining to the federal debt ceiling and the effect of fiscal policy are uncertainties, and these could become another risk factor in financial markets and the real economy.

In emerging economies, the risk of recurrence of the Asian financial crisis in the late-1990s is slim, but we need to bear in mind that, among economies with vulnerable economic structures, the outflow of capital – triggered by such reasons as the Fed's possible tapering – may induce their own currencies to depreciate and stock prices to decline further. The economic growth path of the Chinese economy also needs to be monitored closely.

Concluding remarks

Monetary policy exerts effects on asset markets such as the bond, stock, and foreign exchange markets. However, it takes a considerable amount of time for monetary policy to have an effect on economic activity in terms of production, employment, prices, and wages. Considering that it has been just over six months since the Bank introduced the QQE, its effects on economic activity have in fact appeared earlier than with other past monetary policies. This is probably because when the framework of Abenomics was announced in mid-November last year, expectations for a new phase of aggressive monetary easing grew and the public – including investors – had already factored in the shift to aggressive monetary policy, and with this in mind they started taking action from around that time. In other words, the effects of the QQE had already started exerting effects from mid-November last year. In fact, the rise in stock prices and the depreciation of the yen had been observed from around that period.

On this basis, the effective duration of the new phase of monetary easing has now reached eleven months, and it is only natural that it has already exerted effects on economic activity to the extent observed today.

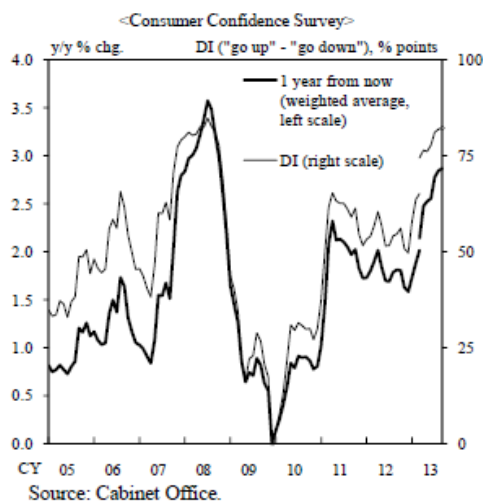
Japan's economy has been recovering steadily so far, in line with the path envisaged by the Bank; however, taking into account the time lag that accompanies the effect of monetary policy on economic activity, the effects of the QQE will actually start to gain momentum in the economy hereafter.

There are remaining downside risks such as overseas factors, but by continuing with the QQE, we can overcome the deflation that has continued for some 15 years within a timeframe of about two years, and achieve the 2 percent price stability target, accompanied by a rise in wages.

Thank you.

Chart 1

Inflation Expectations



<ESP Forecast>

	FY2013	FY2014	FY2015
Feb-13	0.17	2.45	—
Mar-13	0.25	2.47	—
Apr-13	0.27	2.47	—
May-13	0.32	2.61	—
Jun-13	0.33	2.70	<1.00>
Jul-13	0.36	2.71	<0.95>
Aug-13	0.43	2.73	<0.97>
Sep-13	0.52	2.75	<1.03>
Oct-13	0.59	2.78	1.60 <0.76> <0.91>

Source: JCER. Note: Figures in brackets exclude the effects of the consumption tax hikes.

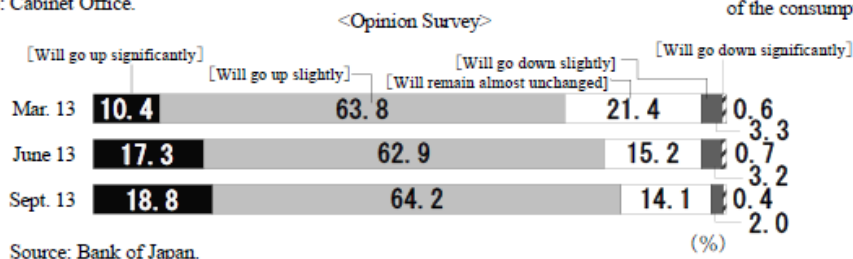
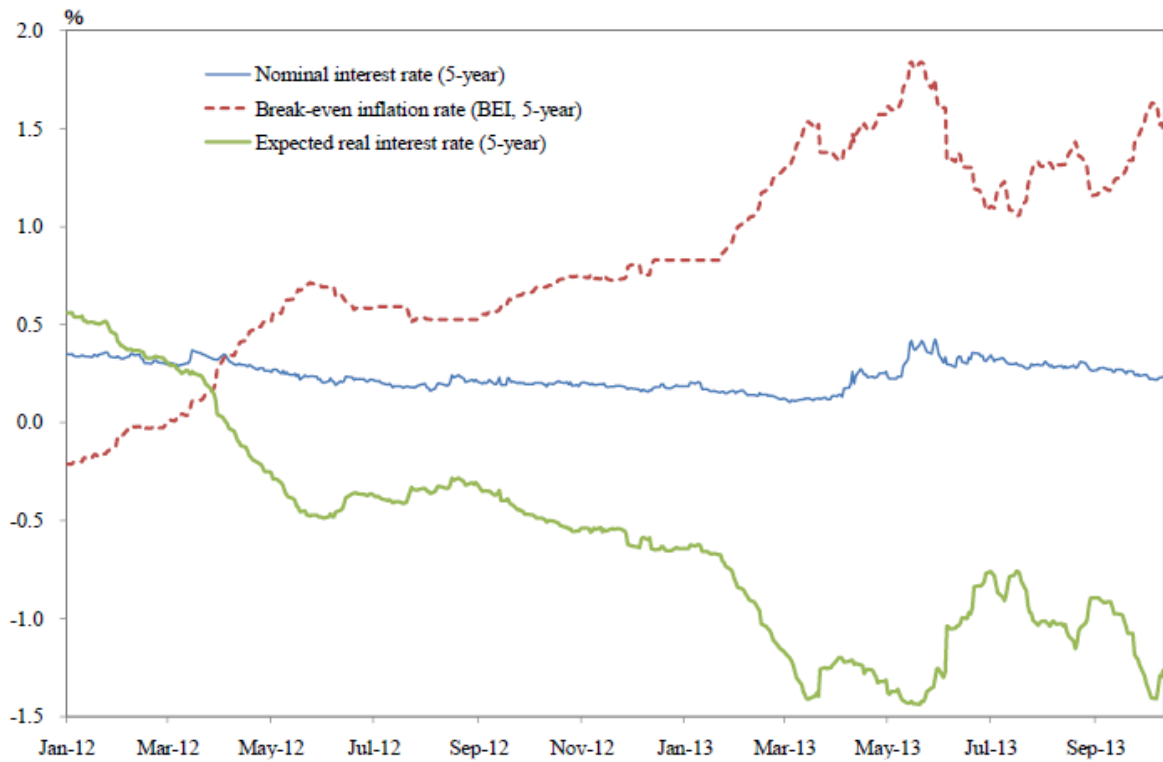


Chart 2

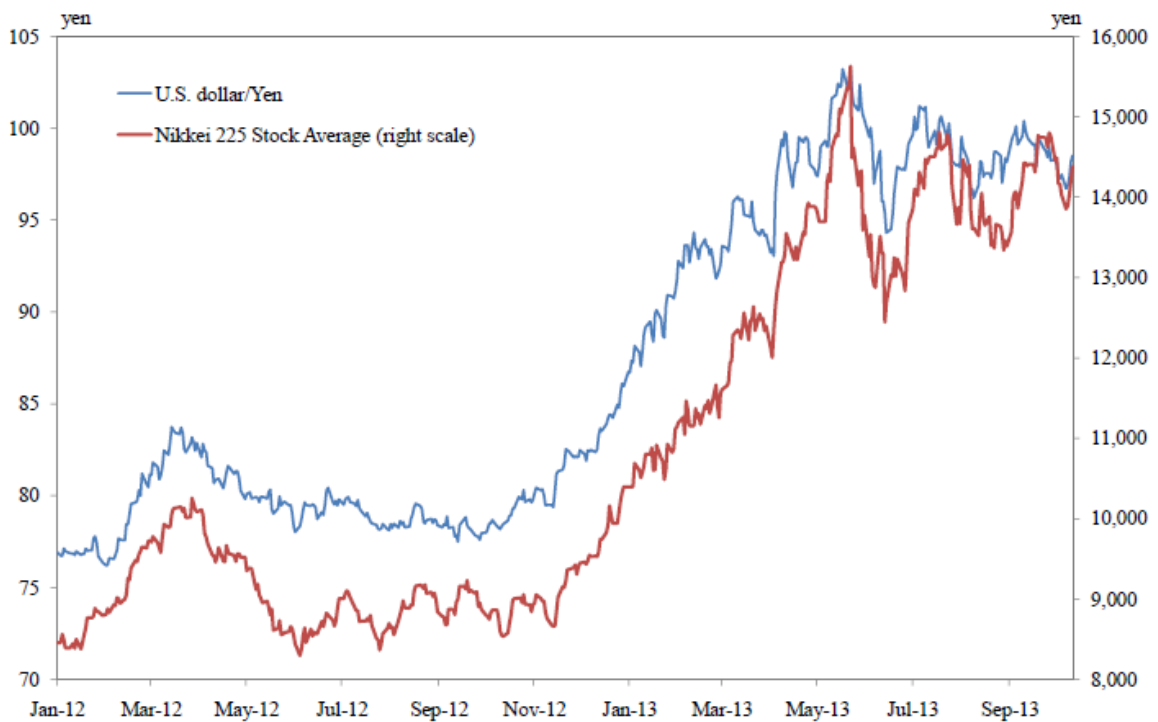
Interest Rates and Inflation Expectations



Source: Bloomberg.

Chart 3

Stock Price and Exchange Rate



Source: Bloomberg.

Chart 4

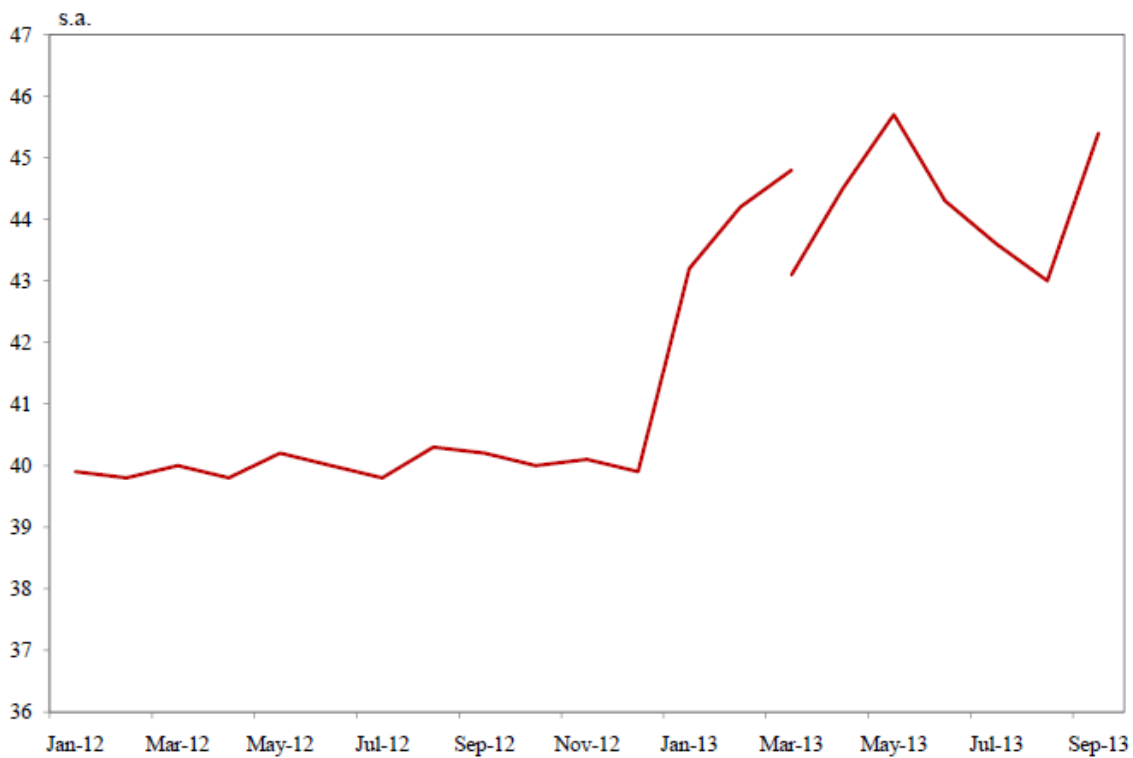
Household Assets

	2011		2012				2013		Amounts outstanding in June-end 2013 in trillion yen (percentage ratio in parentheses)	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2		
Amounts outstanding (End of period, trillion yen)	1,486	1,500	1,517	1,514	1,509	1,544	1,568	1,590		
C h a n g e s (%)	Total assets	0.6	-0.1	1.1	0.2	1.5	2.9	3.4	5.0	1,590 (100.0)
	Currency and deposits	1.9	2.0	2.2	1.8	1.9	2.0	1.7	2.0	860 (54.1)
	Bonds	-12.6	-12.0	-8.4	-7.9	-8.7	-9.3	-8.0	-9.0	31 (2.0)
	Investment trust beneficiary certificates	-7.0	-10.7	-4.9	-11.3	2.0	13.3	20.1	29.0	72 (4.5)
	Shares and other equities	6.8	-6.3	0.9	-5.4	-1.4	11.3	15.1	31.4	129 (8.1)
	Insurance and pension reserves	-0.1	0.2	0.9	1.1	1.8	2.5	2.4	2.6	434 (27.3)
	Others	-4.3	-2.1	-0.4	-1.0	3.6	4.0	3.6	6.3	65 (4.1)

Source: Bank of Japan, "Flow of Funds."

Chart 5

Consumer Confidence



Source: Cabinet Office.

Chart 6

Exports of Goods and Services

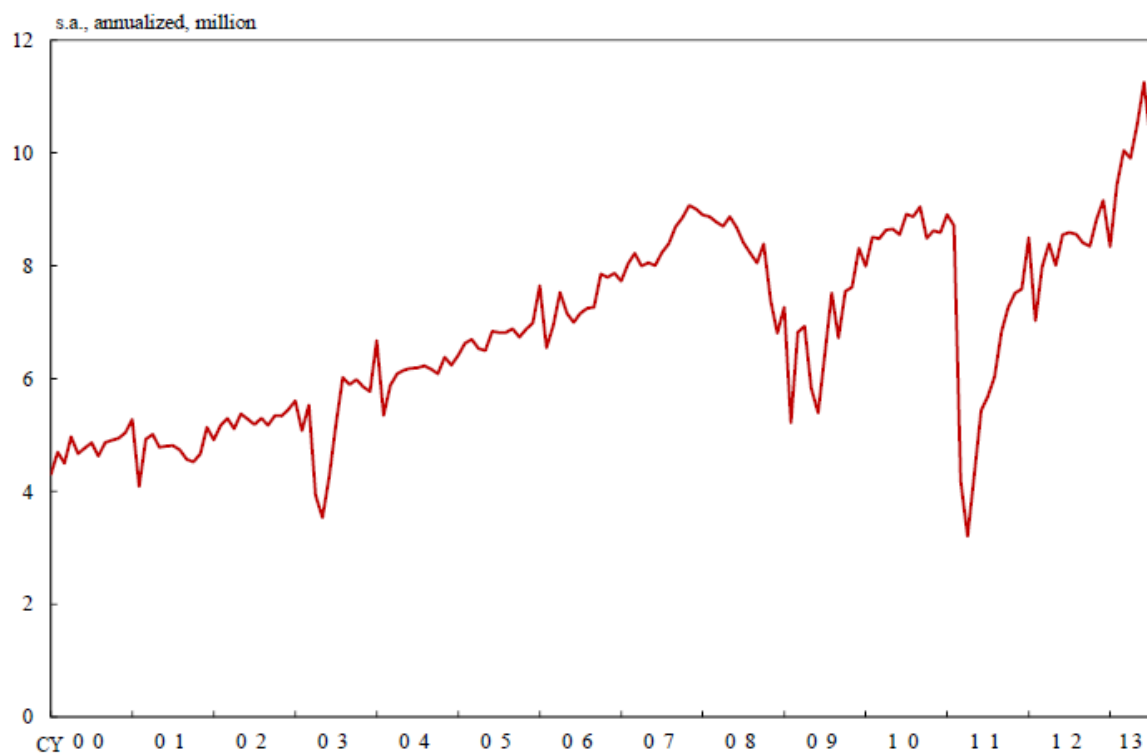
s.a., q/q % chg.

2012			2013	
Q2	Q3	Q4	Q1	Q2
-0.2	-4.5	-2.7	4.0	3.0

Source: Cabinet Office, "National Accounts."

Chart 7

Foreign Tourists



Source: Japan National Tourist Organization.

Chart 8

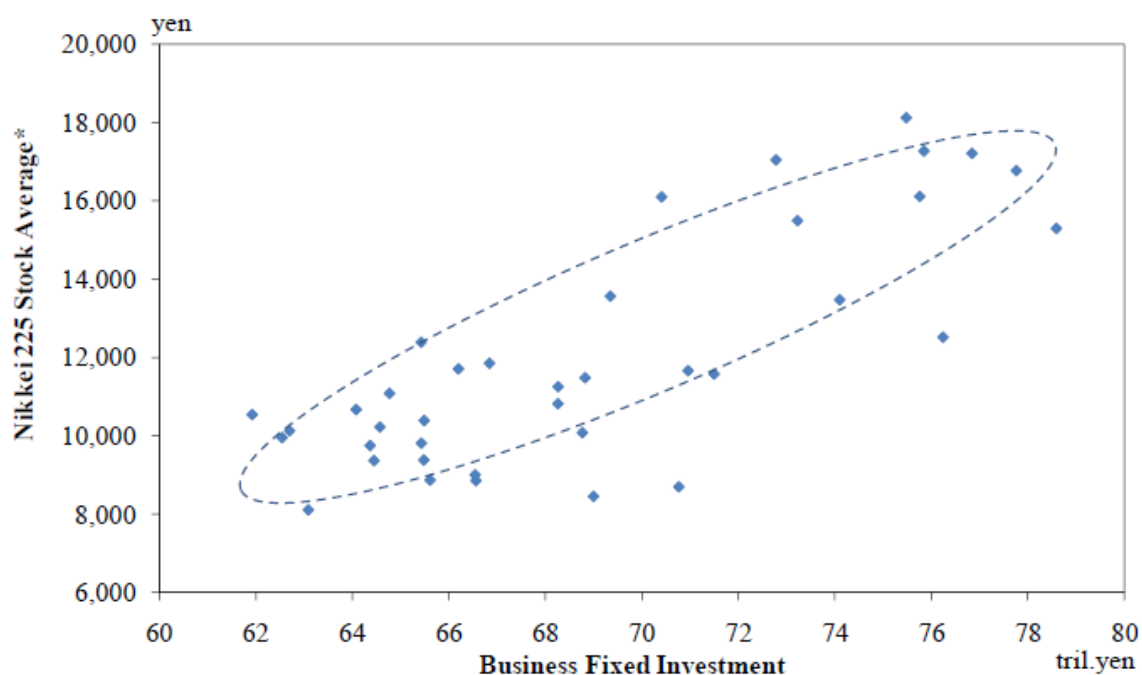
Financial Assets Held by Private Nonfinancial Corporations

		2011		2012				2013		Amounts outstanding in June-end 2013 in trillion yen (percentage ratio in parentheses)
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
Amounts outstanding (End of period, trillion yen)		743	764	811	760	763	785	841	845	
Change (%)	Total assets	1.8	0.1	3.9	0.8	2.7	2.6	3.6	11.2	845 (100.0)
	Currency and deposits	2.9	3.9	2.4	2.7	4.8	3.5	5.4	6.9	220 (26.0)
	Securities other than shares	2.1	-0.6	-0.6	-4.7	-8.8	-7.7	-19.0	-0.0	34 (4.0)
	Shares and other equities	11.9	-5.7	-0.0	-6.2	-1.5	8.0	20.1	40.0	184 (21.7)
	Trade credits and foreign trade credits	-3.3	-2.5	4.3	-1.0	-1.8	-6.8	-8.0	-1.7	192 (22.7)
	Outward direct investment	5.9	11.9	20.2	14.9	22.6	23.7	22.0	36.6	60 (7.1)
	Outward investments in securities	1.9	4.4	11.4	18.0	15.9	9.1	-3.8	-11.2	46 (5.4)
	Others	-3.5	0.3	4.1	-0.5	3.7	6.6	6.3	11.8	111 (13.1)

Source: Bank of Japan, "Flow of Funds."

Chart 9

Stock Price and Business Fixed Investment



Data: 2003/4Q-2013/2Q.

Sources: Cabinet Office, "National Accounts"; Bloomberg.

Chart 10

Ratio of Current Profits to Sales

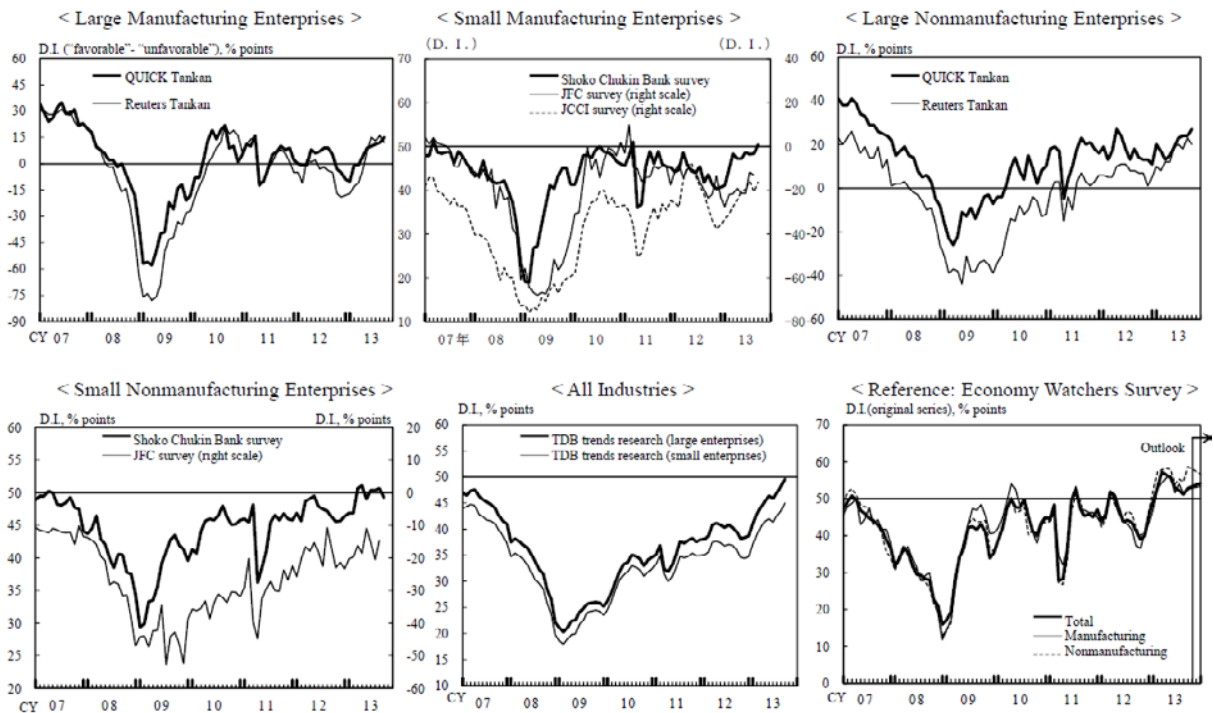
s.a., %

		2012			2013	
		2Q	3Q	4Q	1Q	2Q
All Industries	All Classes	3.75	3.77	4.01	4.28	4.70
Manufacturing	Large	3.79	4.24	5.06	5.97	7.39
	Small	3.65	3.35	3.22	4.18	3.79
Nonmanufacturing	Large	4.52	5.46	5.15	5.13	5.88
	Small	3.33	3.01	3.07	3.13	2.97

Source: Ministry of Finance.

Chart 11

Business Sentiment



Sources: QUICK, "QUICK Tankan"; Thomson Reuters, "Reuters Tankan"; Teikoku Databank; JCCI; JFC; Shoko Chukin Bank; Cabinet Office.

Chart 12

Business Fixed Investment

< Private Sector Capital Investment (SNA) > s.a., q/q % chg.

2012			2013	
2Q	3Q	4Q	1Q	2Q
-0.7	-3.2	-1.2	-0.0	1.3

Source: Cabinet Office, "National Accounts."

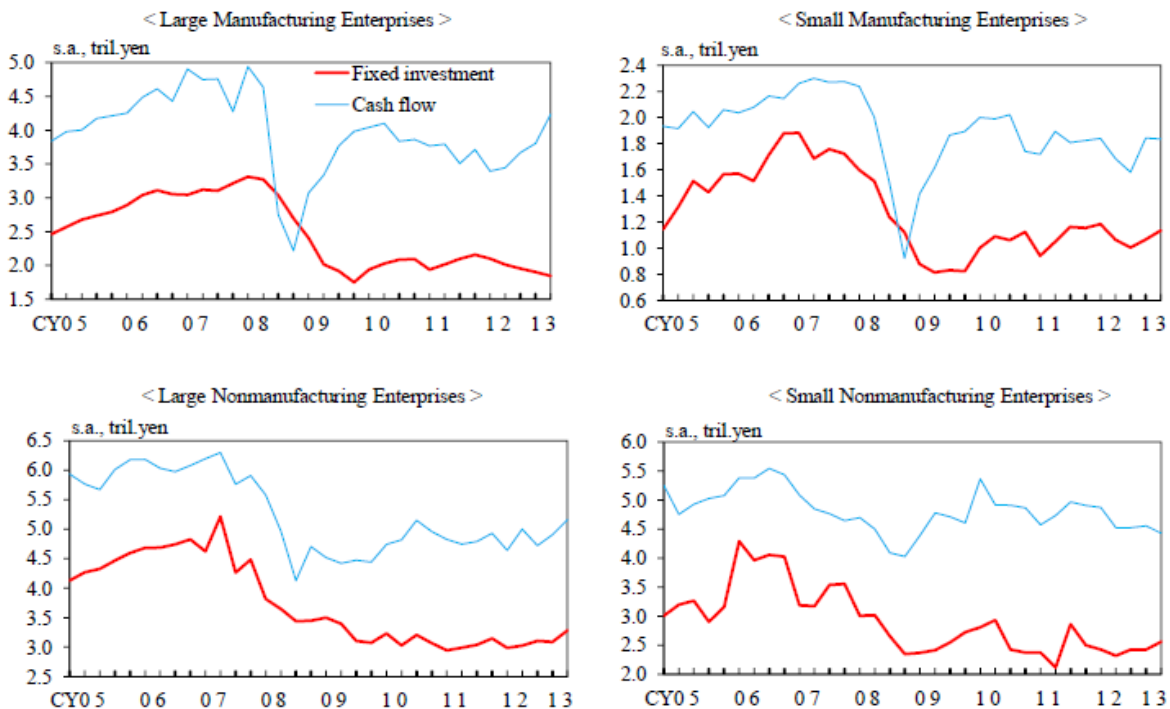
< Capital Investment > s.a., q/q % chg.

	2012			2013	
	2Q	3Q	4Q	1Q	2Q
All Industries	-3.6	-2.4	0.6	0.3	2.9
Manufacturing	-2.3	-4.1	-3.7	-0.9	-0.6
Nonmanufacturing	-4.3	-1.5	3.1	0.9	4.7

Source: Ministry of Finance.

Chart 13

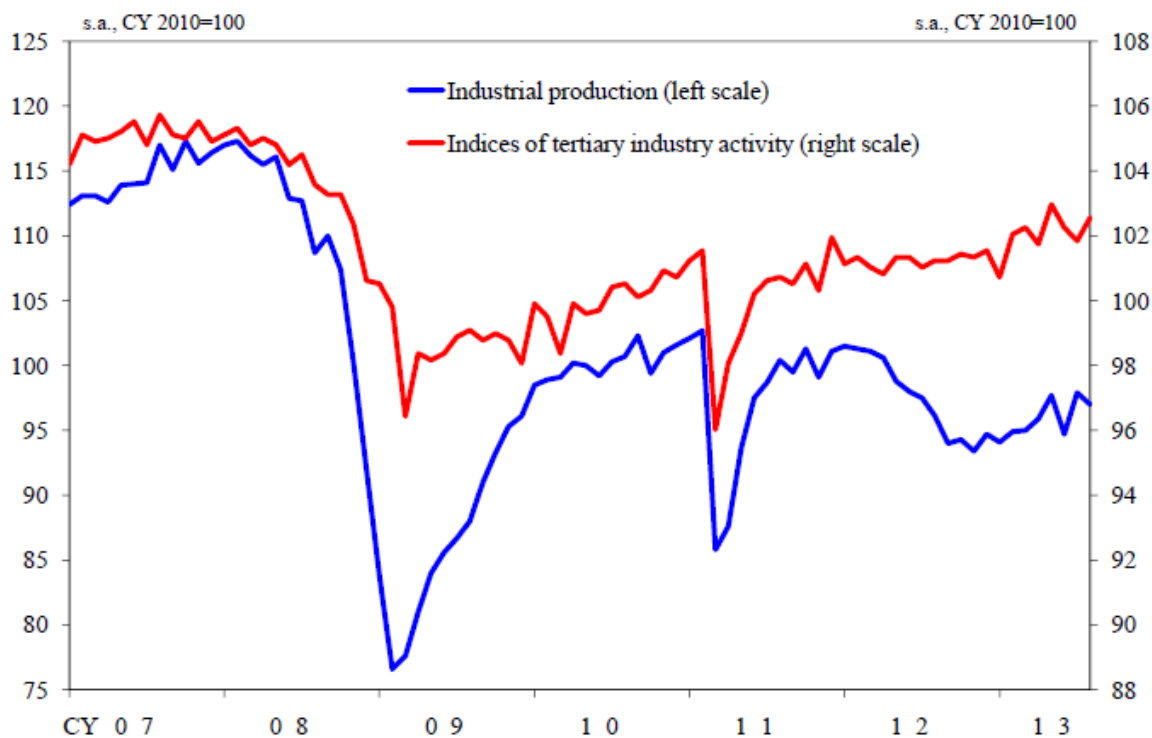
Cash Flow and Business Fixed Investment



Source: Ministry of Finance.

Chart 14

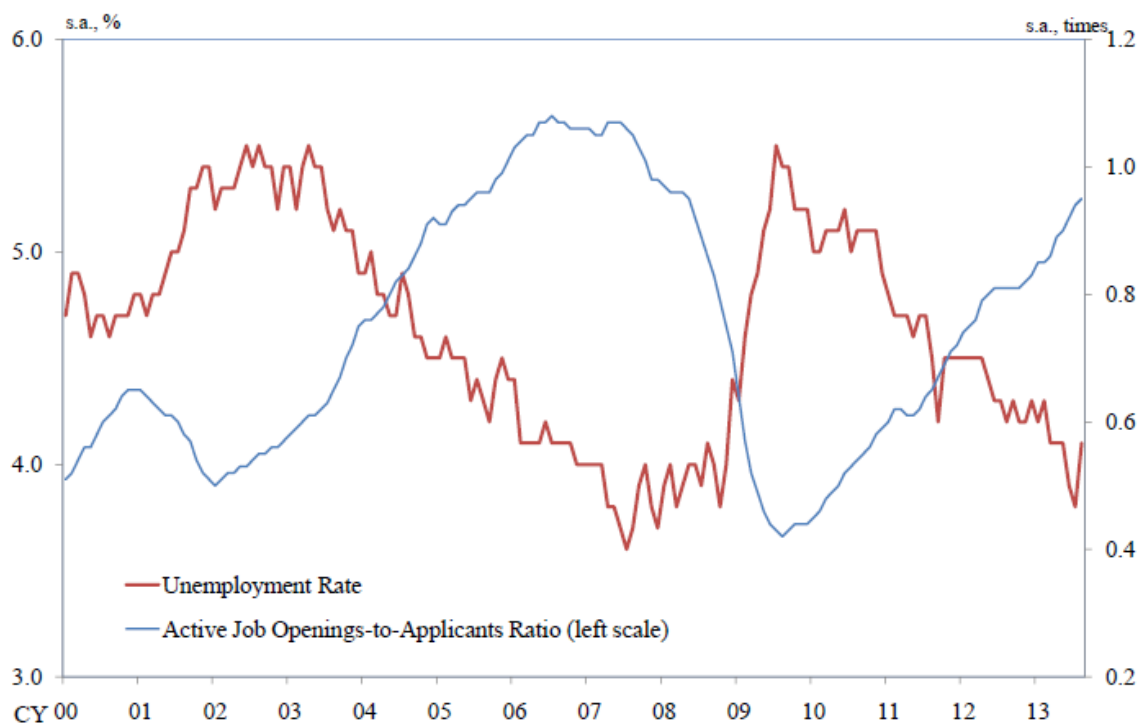
Production and Industrial Activity



Source: Ministry of Economy, Trade and Industry.

Chart 15

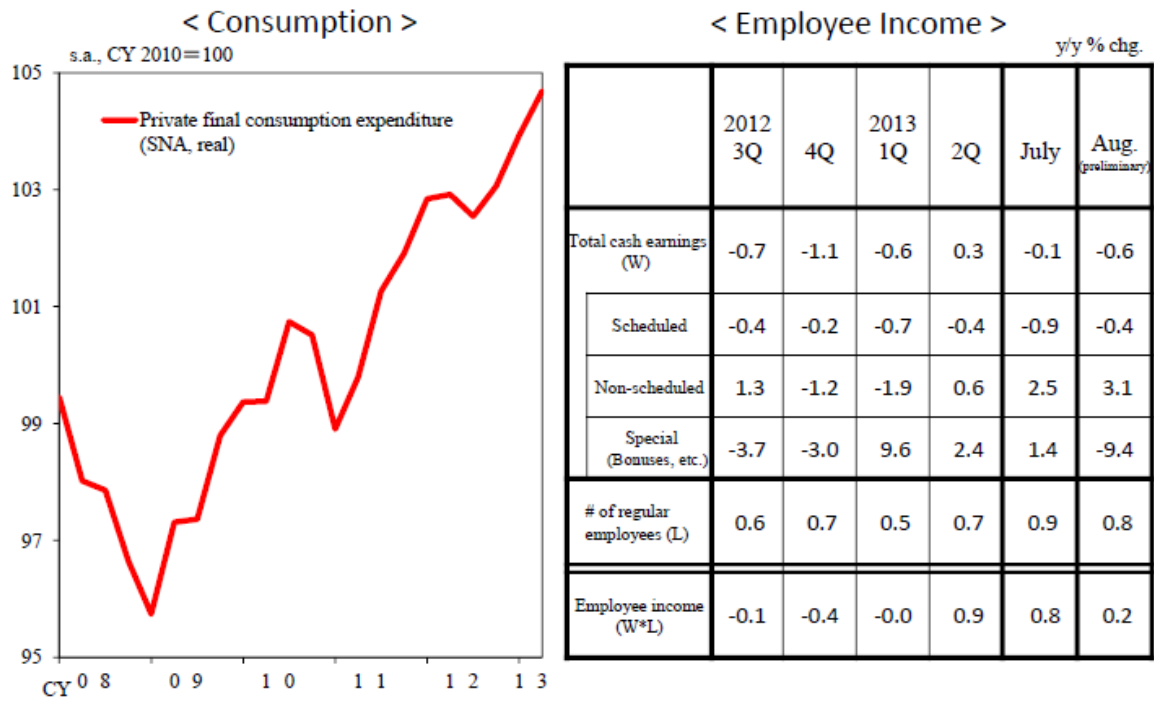
Employment Conditions



Sources: Ministry of Internal Affairs and Communications, "Labour Force Survey";
Ministry of Health, Labor and Welfare, "Report on Employment Service."

Chart 16

Consumption and Employee Income



Sources: Cabinet Office, "National Accounts";
Ministry of Health, Labor and Welfare, "Monthly Labour Survey."

Chart 17

Real Employee Income

s.a., q/q % chg.

2012			2013	
2Q	3Q	4Q	1Q	2Q
-0.3	0.7	-0.4	0.7	0.5

Source: Cabinet Office, "National Accounts."

Chart 18

Consumption and Employee Income

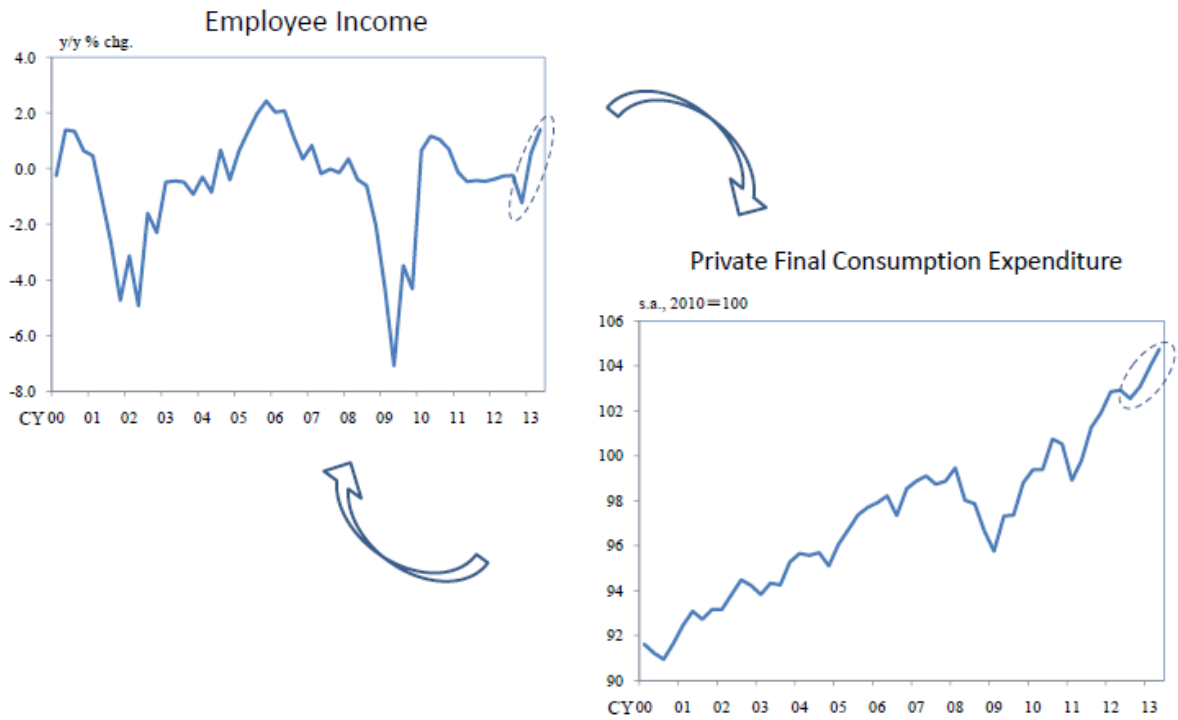
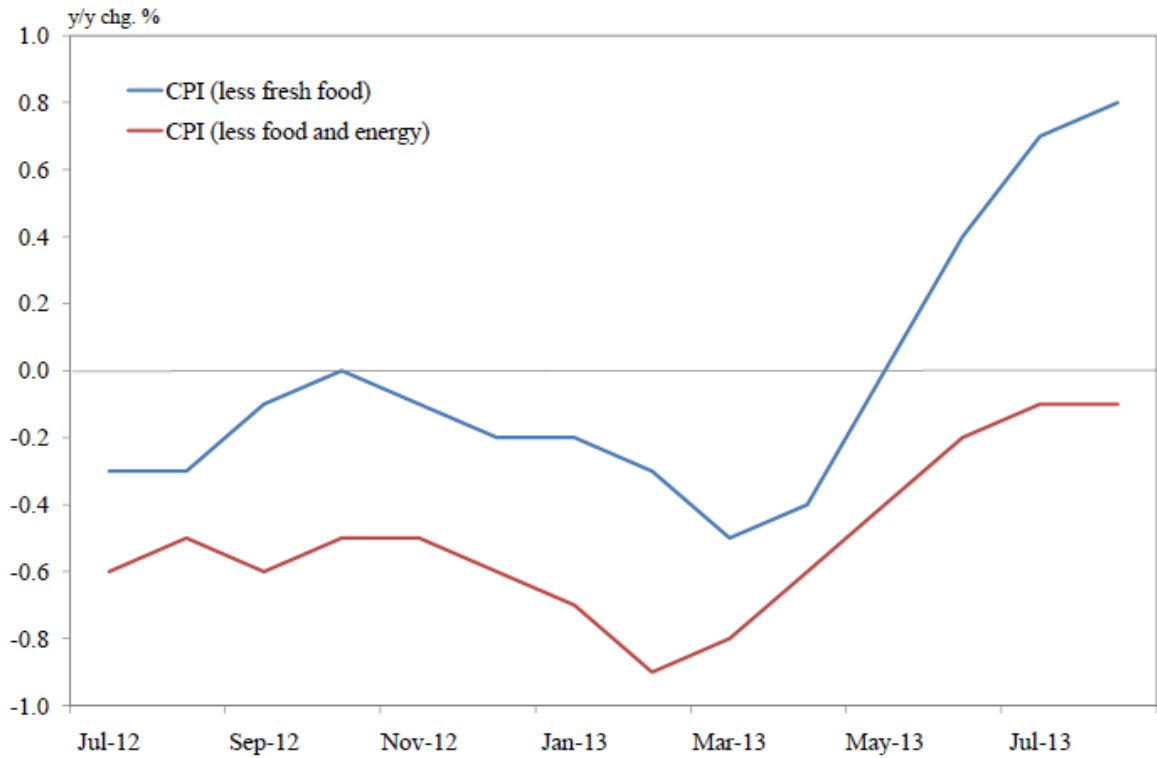


Chart 19

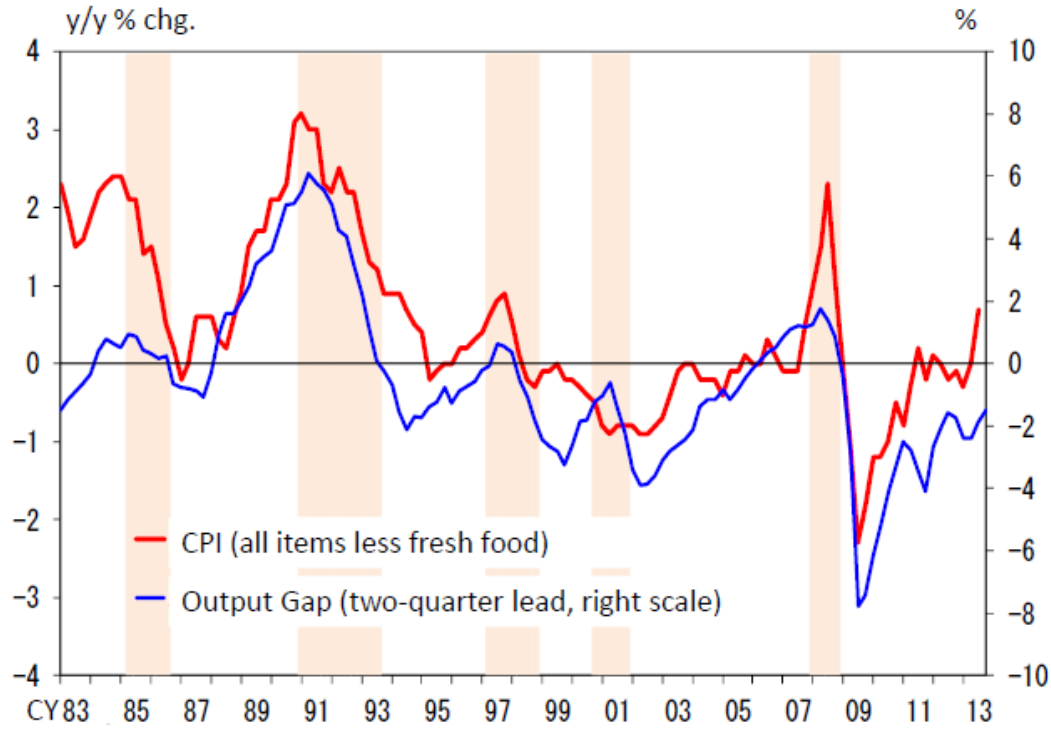
Consumer Prices



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

Chart 20

Consumer Price and Output Gap



Sources: Ministry of Internal Affairs and Communications; Cabinet Office; etc.

Notes: 1. Shaded areas indicate recession periods.

2. Figures for CPI are adjusted to exclude the effects of the consumption tax hikes. CPI for 2013/3Q is that of July-August average.

Chart 21

Upward Shifting of the Phillips Curve

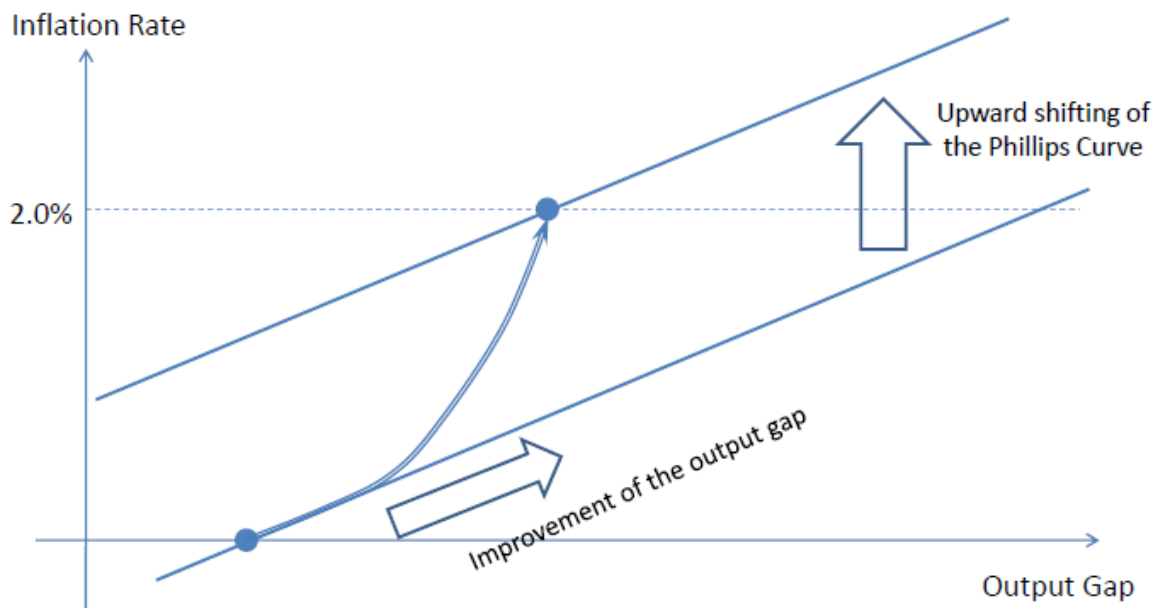
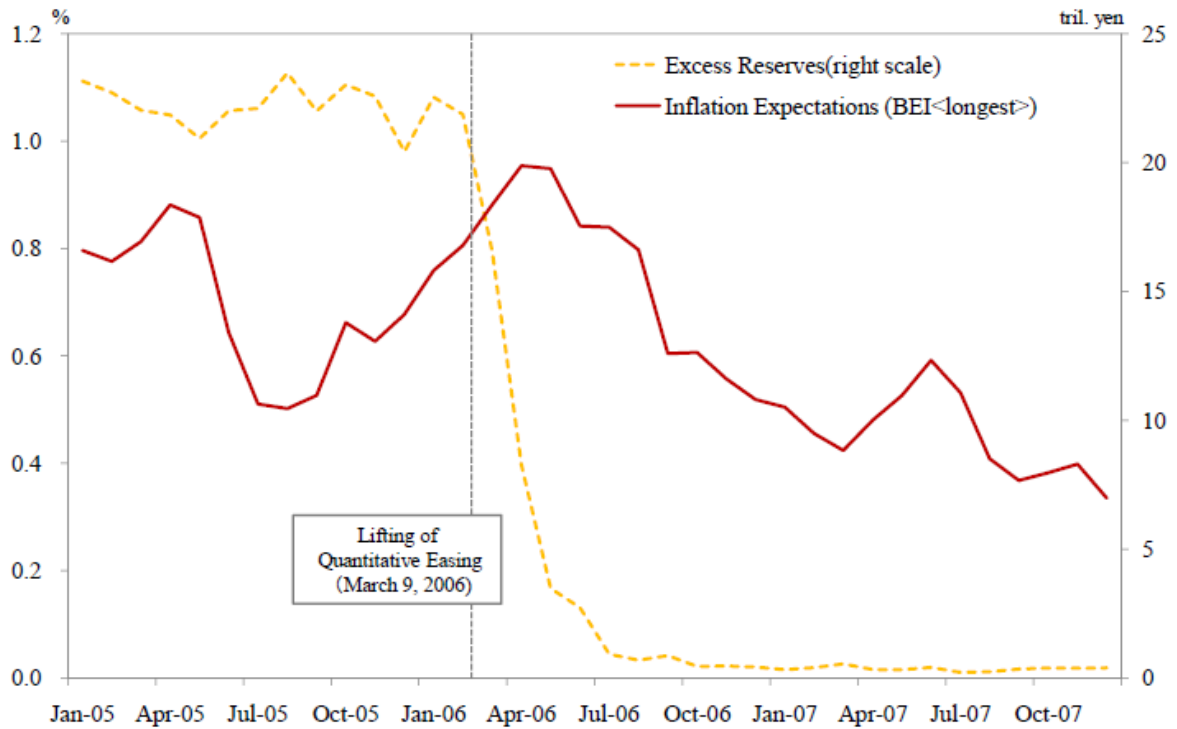
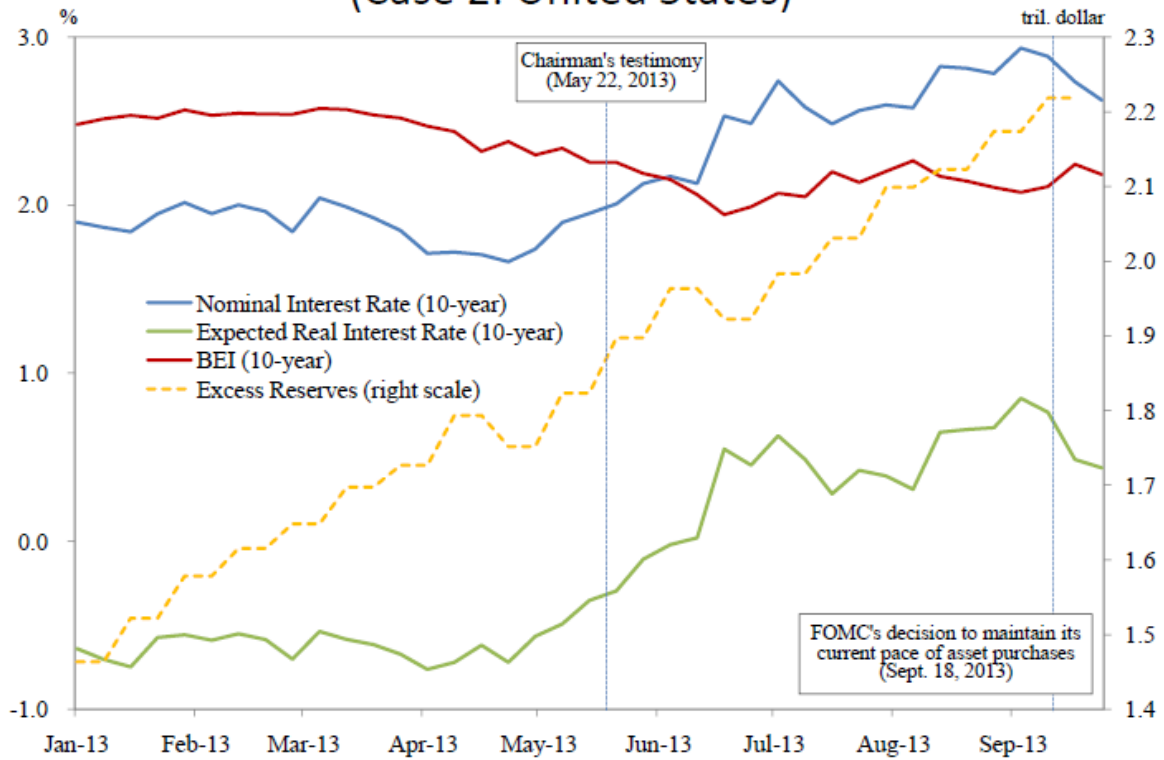


Chart 22 Excess Reserves and Inflation Expectations
(Case 1: Japan)



Sources: Bank of Japan; Bloomberg.

Chart 23 Excess Reserves and Inflation Expectations
(Case 2: United States)



Sources: FRB; Bloomberg.