



March 7, 2016

Bank of Japan

**Answers to Frequently Asked Questions on  
"Quantitative and Qualitative Monetary Easing (QQE)  
with a Negative Interest Rate"**

*Speech at a Meeting Held by  
the Yomiuri International Economic Society in Tokyo*

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*Governor of the Bank of Japan*

(English translation based on the Japanese original)

## **Introduction**

It is a great honor to be invited to this meeting hosted by the Yomiuri International Economic Society today.

At the end of January, the Bank of Japan decided to introduce "Quantitative and Qualitative Monetary Easing (QQE) with a Negative Interest Rate," which added the new dimension of "a negative interest rate" to the existing policy of QQE. Specifically, the Bank applies a negative interest rate of minus 0.1 percent to current accounts that financial institutions hold at the Bank. This measure enables the Bank to now pursue additional monetary easing by providing the new option of "a negative interest rate" in addition to the "quantitative" and "qualitative" measures used so far. Some market participants had voiced doubts that a further expansion of QQE would be possible, arguing that QQE had reached its limit, but I think such views have been completely dispelled.

"QQE with a Negative Interest Rate" will have an impact on financial institutions, financial markets, and, more broadly, people's lives in general. Moreover, as the term itself, "negative interest rate," sounds somewhat shocking, the measure has been the focus of attention in the newspapers and on TV day after day. Given the wide impact -- on financial markets, the management of financial institutions, and people's everyday lives -- it will have, the measure has given rise to a variety of questions and concerns. Today, I would like to explain the Bank's thinking with regard to this policy and respond to frequently asked questions.

### **I. Benefits for Households and Firms**

#### ***Are There Benefits for Households and Firms?***

To start with, I would like to explain the benefits of "QQE with a Negative Interest Rate" for households and firms. The media has been reporting that while interest rates on housing loans have declined, deposit interest rates have also declined, asking whether the net impact of the policy for households is negative or positive. The answer is very clear. Individuals and firms as a whole will definitely benefit from this policy (Chart 1). Deposit interest rates are declining, but the extent of the decline is minimal, since rates already were close to 0 percent. For example, interest rates on deposits in ordinary accounts (the Japanese equivalent to checking accounts for retail customers) at mega-banks decreased from two-hundredths of a

percent to a thousandth of a percent. In other words, the interest earned on depositing 1 million yen for a year declines by 190 yen -- from 200 yen to 10 yen. On the other hand, the extent of the decline in lending rates is much larger. Lending rates for 10-year fixed-rate housing loans provided by mega-banks have declined by 0.25 percentage point, and the Tokyo Inter-Bank Offered Rate (TIBOR), a benchmark rate for lending to firms, has also fallen, with the 3-month TIBOR, for example, declining by slightly less than 0.1 percentage point.

While it is true that the interest earned from depositing 1 million yen will be only 10 yen, we need to consider since when and why deposit interest rates have become so low. The first time interest rates on deposits in ordinary accounts fell to units of hundredths of a percent was in 1999, when Japan was falling into deflation. Under deflation, prices decline across the board and nominal interest rates fall accordingly. This situation persisted in Japan for a prolonged period. In order to increase deposit interest rates, we have to revitalize the economy and overcome deflation.

Another concern is that the Bank's negative interest rate policy will have a negative impact on financial institutions' business, making them more reluctant to lend or leading them to demand higher lending rates. It is certainly the case that in the prolonged environment of extremely low interest rates, financial institutions' net interest income from their core business of taking deposits and making loans has been on a declining trend. Under these circumstances there is a strong concern that the introduction of a negative interest rate will make the situation even worse. From a theoretical perspective, financial institutions may not tolerate the costs imposed by a negative interest rate and instead pass on these costs through an increase in lending rates. In Europe, where negative interest rate policies were adopted before Japan, it has been debated whether such policies are having a negative effect on financial institutions' business and the stability of financial system, and whether such negative effects might put a limit on negative interest rate policies.

However, the situation in Japan is quite different from that in Europe. First, Japan's financial institutions have a sufficient capital buffer and remain very sound, since they were not severely affected by the subprime mortgage problems in the United States and the global

financial crisis. Second, even though their net interest income has fallen, the profits of financial institutions in Japan have remained high due mainly to lower credit costs reflecting Japan's economic recovery. In fact, in fiscal 2014, major and regional banks' net income reached about 3.3 trillion yen -- close to a record high. Therefore, it is entirely inconceivable that in Japan the functioning of financial intermediation will weaken due to strains by negative interest rates on financial institutions' business. In fact, given the fierce competition in Japan's lending market, banks are unlikely to increase lending rates to offset the rise in costs through the negative interest rate policy. Instead, financial institutions should consider why they cannot make sufficient profit from their core business -- taking deposits and making loans. The reason is deflation. Under deflation, the difference between deposit rates and short-term money market rates (deposit spreads) as well as the gap between long- and short-term interest rates have been shrinking. This means that the only way to drastically improve financial institutions' profit is to revitalize the economy and overcome deflation.

"QQE with a Negative Interest Rate" aims at overcoming deflation completely and achieving the price stability target of 2 percent. Let me explain how the policy seeks to achieve this.

## **II. Background to the Introduction of "QQE with a Negative Interest Rate"**

### ***Why Was the Policy Implemented?***

To begin, I would like to touch on the background to the introduction of the negative interest rate policy. Since the turn of the year, global financial markets have been volatile against the backdrop of the further decline in crude oil prices and uncertainty such as over future developments in emerging and commodity-exporting economies, particularly the Chinese economy (Chart 2). Crude oil prices have dropped to around 30 U.S. dollars. The drop is positive for Japan, which is an importer of crude oil, but has a negative impact on commodity-exporting economies including Russia, Brazil, and countries in the Middle East, creating uncertainty for the global economy.

Furthermore, Chinese stock prices have declined considerably, resuming the slide that started last summer. However, although the Chinese economy has embarked on a process of deceleration, it has not deteriorated suddenly. The reasons for the slowdown in the Chinese economy appear to be the adjustment of excess investment by manufacturers and restraint in

public investment by municipal governments under the tightening of discipline. As a result, fixed asset investment decelerated but has now leveled off as municipal governments have resumed with public construction orders from the second half of 2015. In contrast, private consumption and automobile sales have remained firm, reflecting progress in the transformation of China's economic structure from one centered on manufacturing to one centered on nonmanufacturing.

Instead of signaling a sudden deterioration in China's fundamentals, the decline in stock prices can be seen as the correction of a bubble as well as a reaction to movements in the exchange rate of the yuan. The yuan is being sold on speculation of a devaluation, resulting in a decline in China's foreign currency reserves. This has led to instability in markets. Consequently, stock prices have declined globally and markets have become more pessimistic, with investors switching to a risk-off mode. In the foreign exchange markets, demand for the yen, which is regarded as a safe haven currency, has increased, leading to an appreciation of the yen.

Although markets have become more volatile, Japan's economic fundamentals remain sound (Chart 3). Japan's economy has improved significantly from three years ago. Corporate profits are at historically high levels and the unemployment rate is 3.2 percent, which essentially represents full employment. The year-on-year rate of change in the consumer price index excluding fresh food and energy has increased from minus 0.8 percent in March 2013 to above 1 percent most recently. Japan's economy is likely to grow moderately and inflation is likely to increase toward 2 percent. This baseline scenario remains unaffected by the recent volatility. Nevertheless, in light of their record profits, firms' investment in physical and human capital has remained rather subdued. Under these circumstances, the volatility in global markets entails the risk that it may lead to a deterioration in firms' sentiment and a setback in the conversion of people's deflationary mindset, which had been underway. In fact, price perceptions by firms have recently deteriorated. Thus, the reason why the Bank introduced "QQE with a Negative Interest Rate" is that it judged it necessary in order to preempt the manifestation of these risks and to maintain the momentum toward achieving the price stability target of 2 percent.

### **III. Effects of "QQE with a Negative Interest Rate"**

#### ***What Effects Will the Negative Interest Rate Policy Have?***

Next, I would like to explain the effects the policy will have. The key aim of this policy is to drive down real interest rates, which is the main transmission channel of QQE. The fact that over the past three years Japan's economy has significantly improved and we are no longer in deflationary situation is proof that a fall in real interest rates has a positive impact on the economy and inflation.

Let me explain the transmission mechanisms of QQE in more detail. First, QQE raises inflation expectations through the Bank's strong and clear commitment to achieving the price stability target of 2 percent at the earliest possible time and through large-scale monetary easing to underpin the commitment. Second, QQE puts strong downward pressure on nominal interest rates across the entire yield curve through massive purchases of Japanese government bonds (JGBs). These two channels result in a decline in real interest rates. The decline in real interest rates boosts business fixed investment and housing investment through a decline in interest rates on business and housing loans. In financial markets, QQE underpins stock prices and helps to weaken the yen, which in turn pushes up corporate profits, thereby improving employment and wages. The boost in economic activity improves the output gap -- that is, the balance of aggregate supply and demand -- which together with rising inflation expectations, lifts prices. Developments since the introduction of QQE exactly conform to the anticipated transmission mechanisms.

"QQE with a Negative Interest Rate" represent a framework in which these transmission channels are further enhanced. The negative interest rate lowers short-term interest rates, while the massive purchases of long-term JGBs lower long-term yields. These two elements together exert strong downward pressure on interest rates across the entire yield curve. The important aspect here is that the effect on the yield curve is stronger when the two elements are implemented in tandem than when carried out independently. The introduction of the negative interest rate on current accounts that financial institutions hold at the Bank reduces their incentive to sell JGBs in exchange for current accounts at the Bank. The reason is that JGBs with a positive interest rate become more valuable for financial institutions that attach great importance to interest income. As a result, purchases of long-term JGBs by the Bank

will have stronger effects. Under normal circumstances, when short-term yields are lowered, long-term interest rates do not decline to the same extent. However, with the Bank's introduction of the negative interest rate, a large part of the yield curve has declined by about 0.2 percentage points, which is close to the decline in short-term yields, or more (Chart 4). This means that the extent of the decline in interest rates brought about by the negative interest rate policy is quite substantial. Going forward, the Bank will assess how the effects of the decline in interest rates permeate and spread through the real economy.

#### ***Doubt over Firms' Willingness to Invest Even with a Decline in Interest Rates***

Some argue that a decline in real interest rates will not produce the intended effects if firms are unwilling to borrow and invest. This is possible in the short term, while people are pessimistic. Over a longer period of time, however, the decline in real interest rates will surely boost economic activity and inflation through the impact on financial institutions' behavior and financial markets. In fact, bank lending, which had been declining, has increased over the past three years at an annual rate of about 2 percent (Chart 5). Stock prices have risen as well, and the excessive appreciation of the yen has been corrected. Against the backdrop of such improvement in capital markets, economic growth and the underlying trend in inflation have increased.

A decline in real interest rates will have no effect only when the expected growth rate, or natural rate of interest, is at such a low level that the central bank cannot produce a real interest rate that is lower than that. While this extreme case cannot be ruled out as a theoretical possibility, I am convinced it does not apply to Japan. Let me point out a couple of reasons. First, in the past three years, the decline in real interest rates has, as I just mentioned, produced actual effects. And second, looking at Japan's economy and Japanese firms, I do not think the situation is as dire as that, given Japan's economic strengths such as its technological prowess and the skill-level of the labor force. It is implausible that the natural interest rate is so low that monetary policy would be ineffective.

#### ***Does Volatility in Global Financial Markets Render Monetary Policy Ineffective?***

The volatility recently observed in global financial markets certainly makes it more difficult to clearly see the effects of the negative interest rate policy. Immediately after the

introduction of the negative interest rate policy, stock prices rose, with the Nikkei index adding 800 points in two days, while the yen fell to 121 yen against the U.S. dollar. Since then, however, the global decline in stock prices and the appreciation of the yen have continued, triggered by pessimistic views on the U.S. economy and concern about the stability of the financial system in Europe. These developments have led to newspaper headlines claiming that the effects of the negative interest rate policy have been cancelled out.

This is not an accurate assessment. Since the introduction of "QQE with a Negative Interest Rate," interest rates across the board have clearly declined. This is exactly what we intended. The decline in yen interest rates and the fact that further monetary easing is possible -- all else being equal -- have a positive impact on asset prices. In other words, the policy works in the direction of raising stock prices and lowering the value of the yen. At the moment, these effects are being outweighed by the excessive risk aversion among investors around the globe. However, given that the fundamentals of Japan's economy and Japanese firms remain strong and that the negative interest rate policy will have powerful effect, financial markets will turn positive as investor confidence returns.

#### **IV. Adverse Effects on Financial Institutions' Earnings and Financial Markets**

Next, I would like to discuss possible costs associated with the negative interest rate policy. Any policy comes with costs. In other words, there is no such thing as a free lunch. In deciding on policy action, it is essential to weigh its expected costs against the need for such policy action and to try to reduce costs wherever possible.

##### ***How to Mitigate the Adverse Effect on Financial Institutions' Earnings***

Regarding the negative interest rate policy, the potential adverse effects on financial institutions' earnings and their functioning as financial intermediaries are of utmost importance. For example, financial institutions might pass on the costs resulting from the negative interest rate policy to borrowers by raising lending rates for firms and homeowners. In order to avoid such unintended consequences, the Bank has adopted a multi-tier system in which current accounts held by financial institutions at the Bank are divided into three separate tiers. Multi-tier systems have been in place for some time in European countries. Under the multi-tier system in Japan, a zero interest rate and a positive interest rate apply to

financial institutions' current account balances at the Bank of Japan up to certain thresholds (Chart 6).

Let me explain how the Bank's three-tier system works. First, the same interest rate as before -- a positive rate of 0.1 percent -- is applied to financial institutions' current account balances already held at the time of the introduction of the negative interest rate policy. Specifically, such balances are calculated as the average amount outstanding on financial institutions' current account during 2015 -- which are referred to as financial institutions' "Basic Balances" -- minus required reserves. The total of "Basic Balances" minus required reserves for all financial institutions that have a current account at the Bank is about 210 trillion yen or about 80 percent of the aggregate amount outstanding of financial institutions' current accounts. Second, a zero interest rate continues to be applied to the required reserves held by financial institutions subject to the Reserve Requirement System; a zero interest rate is also applied to the amount of current account balances that corresponds to the outstanding amount of borrowing from the Bank of Japan through the special facilities (the Stimulating Bank Lending Facility, the Growth-Supporting Funding Facility, and the Funds-Supplying Operation to Support Financial Institutions in Disaster Areas affected by the Great East Japan Earthquake). The sum of these items is called financial institutions' "Macro Add-on Balance." The sum of such "Macro Add-on Balances" of all financial institutions at the start of the negative interest rate policy amounted to about 40 trillion yen. And third, financial institutions' remaining current account balance is called the "Policy-Rate Balance," to which the negative interest rate is applied. At the start of the negative interest rate policy, the aggregate amount of "Policy-Rate Balances" for all financial institutions that have a current account at the Bank was about 10 trillion yen on a net basis.

Since the Bank will continue to purchase JGBs at an annual rate of about 80 trillion yen and the proceeds of such purchases will be paid into financial institutions' current account at the Bank, financial institutions' current account balances will increase. Therefore, if the thresholds remain unchanged, the balances to which the negative interest rate is applied will increase over time. In light of this, the Bank will raise the amount of current account balances to which a zero interest rate is applied ("Macro Add-on Balances") at certain intervals -- for example, once every three months -- in an incremental manner in order to keep the amount of

current account balances to which a negative interest rate is applied ("Policy-Rate Balances") more or less unchanged. By doing so, the amount of current account balances on which financial institutions incur negative interest will be kept to the minimum necessary to achieve the objectives of the negative interest rate policy.

Given that a negative interest rate applies to only part of financial institutions' current account balances, you may wonder whether the negative interest rate policy will fully exert its intended effects. We believe it will. Let me give you an example. If one bank sells JGBs to another, the proceeds will be transferred into the selling banks' current account with the Bank of Japan. This transaction will lead to an increase in the selling banks' current account balance, raising the amount on which the negative interest rate is imposed. This means that prices in financial markets -- such as interest rates, stock prices, and exchange rates -- will be determined under the premise that a negative interest rate is applied to a marginal increase in financial institutions' current account balances. As the proverb says, seeing is believing. All you have to do is look at changes in the yield curve. Interest rates have indeed clearly dropped across all maturities since the introduction of the negative interest rate policy (Chart 4).

Japan's three-tier system is designed to minimize the direct impact on financial institutions' earnings while maximizing the positive effects of the negative interest rate policy. The system works as intended.

Despite the carefully calibrated design of the multi-tier system, the decline in market interest rates will inevitably have adverse effects on financial institutions' profits. For example, it is virtually impossible for banks to cut interest rates on their customers' deposits into negative territory, because they want to maintain their long-term relationships with customers. In addition, if a negative interest rate is imposed on customers' deposit, this would prompt their customers to withdraw cash from bank accounts and hoard cash in vaults. In fact, financial institutions' retail deposit interest rates have never turned negative even in European countries where the central bank has cut its deposit rate to as low as minus 1 percent. On the other hand, banks' interest income will decrease reflecting the decline in JGB yields.

Moreover, lending rates on housing and corporate loans will decline to some extent. As a result, banks' earnings will be negatively affected.

However, it should be noted that monetary easing has been pursued with a view to exerting positive effects on the economic activities of firms and households -- both of which are financial institutions' customers. These positive effects on the economy and the negative impact on financial institutions' profits are two sides of the same coin. As mentioned before, the decline in the yield curve itself is the starting point of the transmission of policy effects. Reducing the impact of this is not something that can be achieved by changing the design of the policy.

It is more productive to consider why this adverse interest rate environment, which is responsible for the decline in financial institutions' profits from their core business -- taking deposits and making loans -- has been so protracted. As I mentioned earlier, the improvements in Japan's economic activity and prices have had a positive impact on financial institutions' business, for example through the reduction in credit costs. Moreover, bank lending has been increasing, albeit moderately. However, as financial institutions' profit margin has not improved, financial institutions' profits remain under strong downward pressure. The fundamental cause is the protracted deflation in Japan. In an environment of deflation and low interest rates in which short-term interest rates are close to zero, profits from deposit spreads disappear, while those from maturity transformation shrink because of the narrower differential between long- and short-term interest rates due to the flattening of the yield curve. In addition, since Japanese firms have restrained fixed investment and have instead hoarded cash and deposits, banks' loan-to-deposit ratios have substantially declined. Further, reflecting severe competition among banks, lending margins continue to narrow. In order for Japan's economy to escape from this trap, the economy needs to overcome deflation completely. If deflation was to return to Japan and the low interest-rate environment to continue, this would cause more serious problems for banks' profitability. Once deflation is overcome completely, firms will become more proactive in making investments, which will lead to an increase in loan demand. Under these circumstances, as short-term interest rates become positive, banks will be able to profit again from deposit spreads. As the yield curve become steeper, interest-rate margins will improve due to a larger interest-rate differential

between long- and short-term rates. Therefore, overcoming deflation is essential not only for the recovery of Japan's economy but also for the full-fledged recovery of financial institutions' profitability through an improvement in their profit margins.

### ***How to Mitigate Any Adverse Effects on Financial Markets***

Another important point that we had to take into consideration when introducing negative interest rates is the potential adverse effect on the functioning of financial markets. Another purpose of the three-tier system therefore is to ensure that transactions continue to take place in the short-term money market. Under the three-tier system, some financial institutions will hold current account balances to which the negative interest rate is applied, while other financial institutions will have unused allowances in tiers to which a zero or positive interest rate is applied. I mentioned earlier that the aggregate amount of policy-rate balances to which the negative interest rate is applied was initially about 10 trillion yen on a net basis for all financial institutions that hold a current account at the Bank. In fact, looking at the January 2016 reserve maintenance period, if we sum up the amounts outstanding of policy-rate balances of financial institutions that have a positive policy-rate balance, the sum was about 20 trillion yen. However, given that some financial institutions have unused allowances in tiers to which a zero or positive interest rate is applied, these financial institutions can raise funds from financial institutions that have a positive policy-rate balance at a rate that is still negative but higher (i.e., less negative) than minus 0.1 percent. These transactions will be profitable for both sides. If these arbitrage transactions take place in full, the net amount of negative-rate balances will be about 10 trillion yen. In other words, this suggests that there are incentives for financial institutions to engage in transactions in the interbank money market. In Switzerland, money-market transactions are taking place at negative rates. In these cases, private banks, which have large negative-rate balances, are lenders, and major banks, which have unused zero interest rate tier allowances, are borrowers. Going forward, we expect that these arbitrage transactions in the money market will gradually increase in Japan as well.

Looking at developments in the money market since February 16, when the negative interest rate started to be applied, although there were no transactions with a negative uncollateralized overnight call rate on that day, there have been uncollateralized overnight call transactions

with a negative interest rate since February 17, and the weighted average rate has been negative. Meanwhile, the volume of transactions in call markets decreased from the previous reserve maintenance period. Nevertheless, I believe that as financial institutions proceed with updating their computer systems and operations, and as markets become more accustomed to negative interest rates, transactions in call markets will increase. In fact, as mentioned, in Switzerland and Denmark, which adopted negative interest rates earlier, transactions between financial institutions with negative rate balances -- which have become lenders -- and those with unused zero or positive interest rate tier allowances -- which have become borrowers -- have taken place at negative interest rates. The volume of money market transactions in the two countries is quite substantial. The Bank will continue to carefully monitor developments in the money market, including how financial institutions adjust their computer systems and operations to cope with negative interest rate transactions.

### **Concluding Remarks**

We cannot deny that "QQE with a Negative Interest Rate" has an adverse effect on financial institutions' earnings. That said, let me reiterate that the aim of the policy is to benefit households and firms and ultimately to fully overcome deflation. The policy seeks to further reduce real interest rates and strengthen the effects of QQE, which has proven to be effective over the past three years. By making full use of "QQE with a Negative Interest Rate," the Bank will achieve the price stability target of 2 percent at the earliest possible time. Deflation will not return to Japan. Price stability with 2 percent inflation will definitely be achieved.

Thank you.

# Answers to Frequently Asked Questions on "Quantitative and Qualitative Monetary Easing (QQE) with a Negative Interest Rate"

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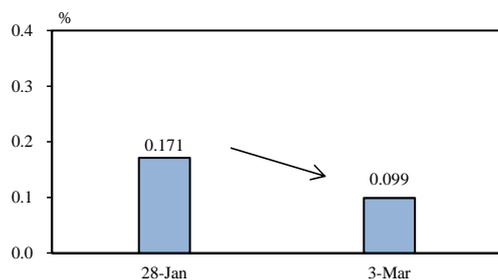
Haruhiko Kuroda  
*Governor of the Bank of Japan*

Chart 1

## Lending and Deposit Rates

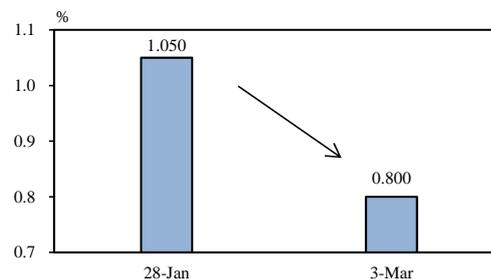
*Benchmark Rate for Lending*

*3-Month TIBOR*



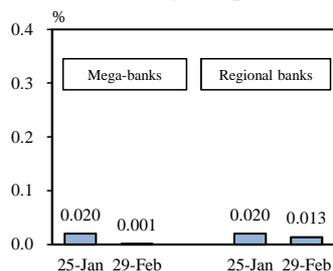
*Lending Rates on Housing Loans*

*Mega-Banks, 10-Year Fixed Rate*

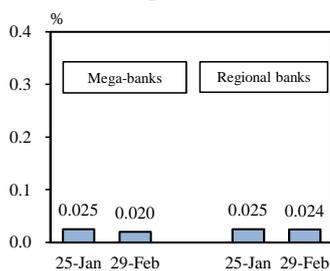


### *Deposit Rates*

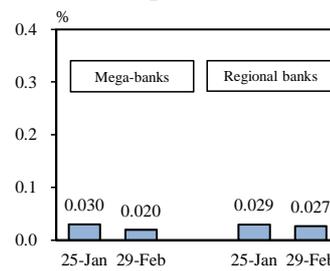
*Ordinary Deposits*



*Time Deposits (1-Year)*



*Time Deposits (3-Year)*

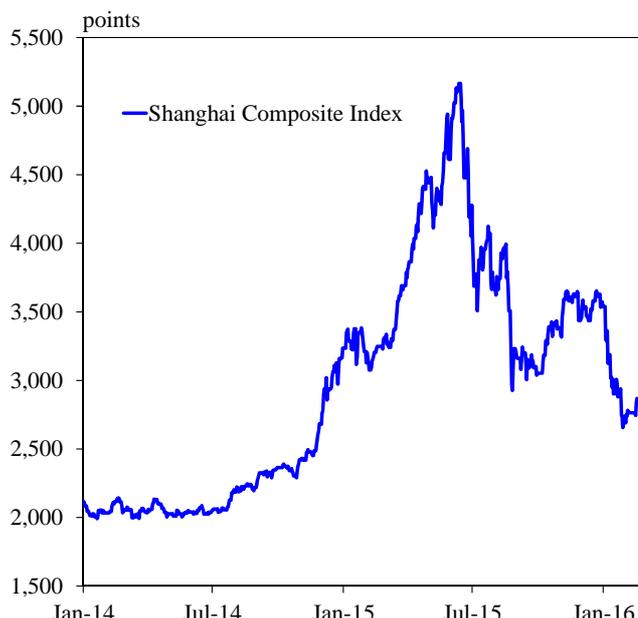
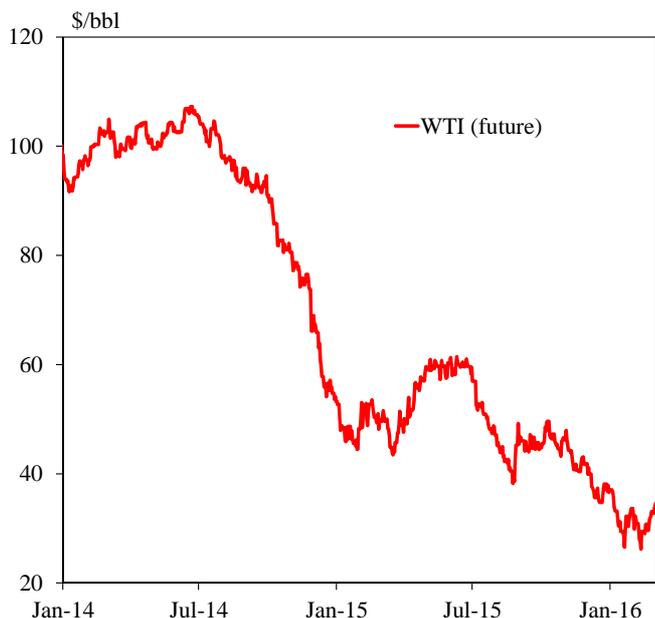


Note: Figures for deposit rates are the simple averages of interest rates posted at financial institutions. Figures for time deposits are for deposits of less than 3 million yen. Mega-banks comprise Mizuho Bank, The Bank of Tokyo-Mitsubishi UFJ, and Sumitomo Mitsui Banking Corporation.  
Sources: Bloomberg; Related private banks' web sites, etc.

# Financial Markets

*Crude Oil Prices*

*Chinese Stock Prices*



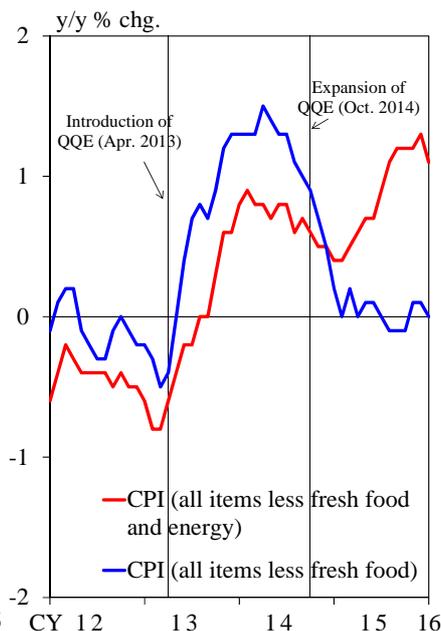
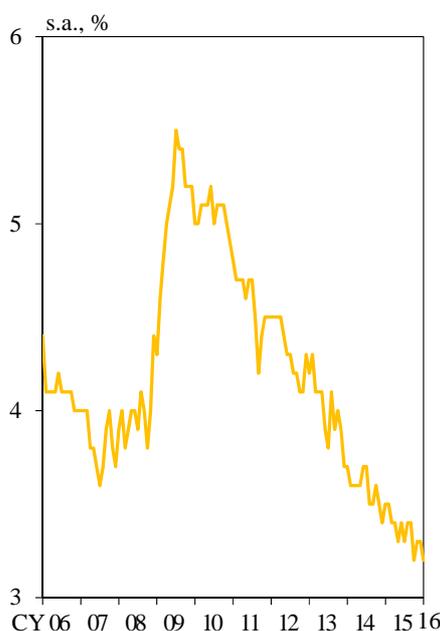
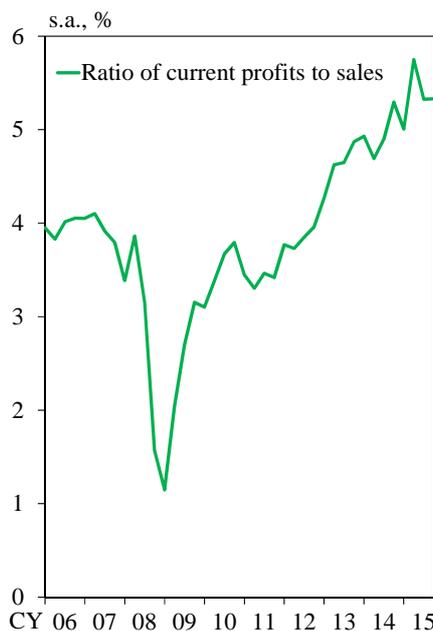
Source: Bloomberg.

# Japan's Economic Fundamentals

*Corporate Profits*

*Unemployment Rate*

*Consumer Prices*

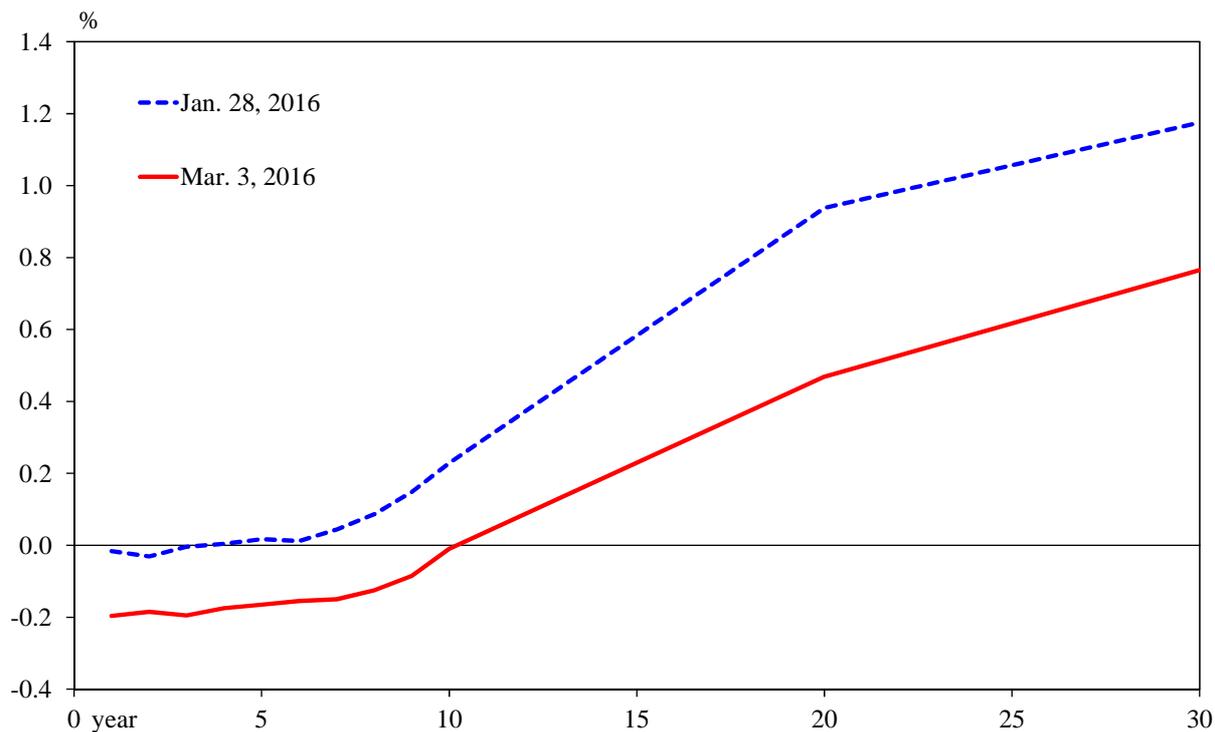


Note: Figures are adjusted to exclude the estimated effects of changes in the consumption tax rate.

Figures for the CPI (all items less fresh food and energy) are calculated by the Research and Statistics Department, Bank of Japan.

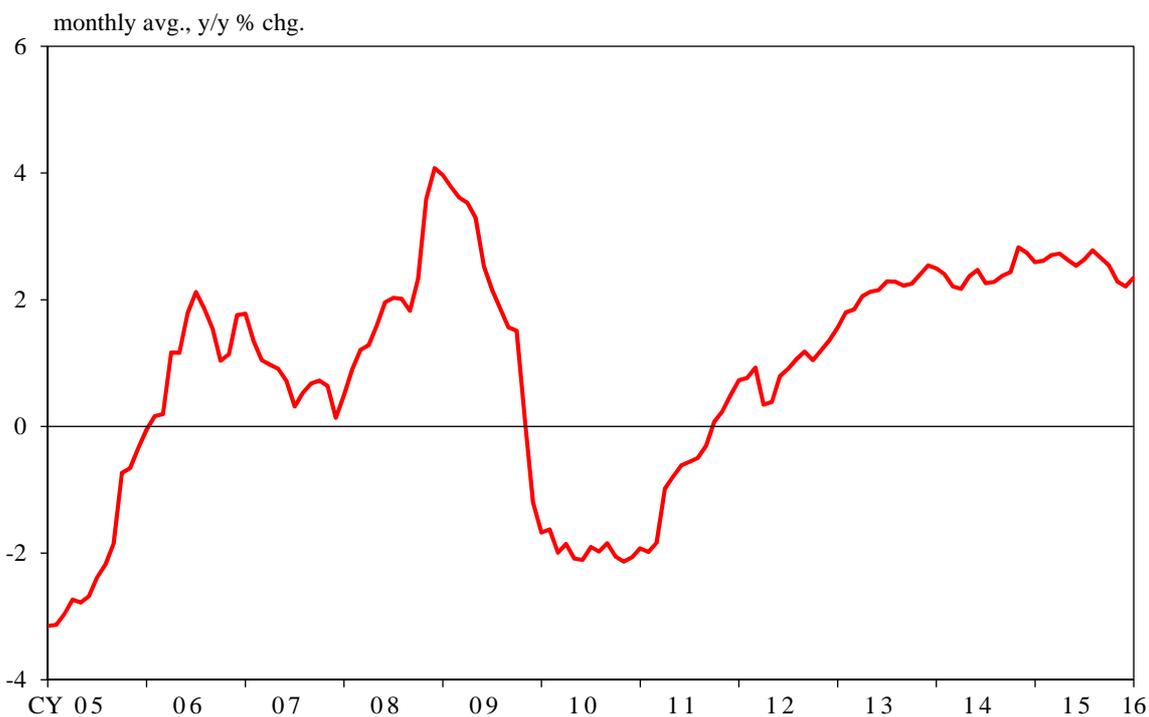
Sources: Ministry of Finance; Ministry of Internal Affairs and Communications.

### JGB Yield Curve



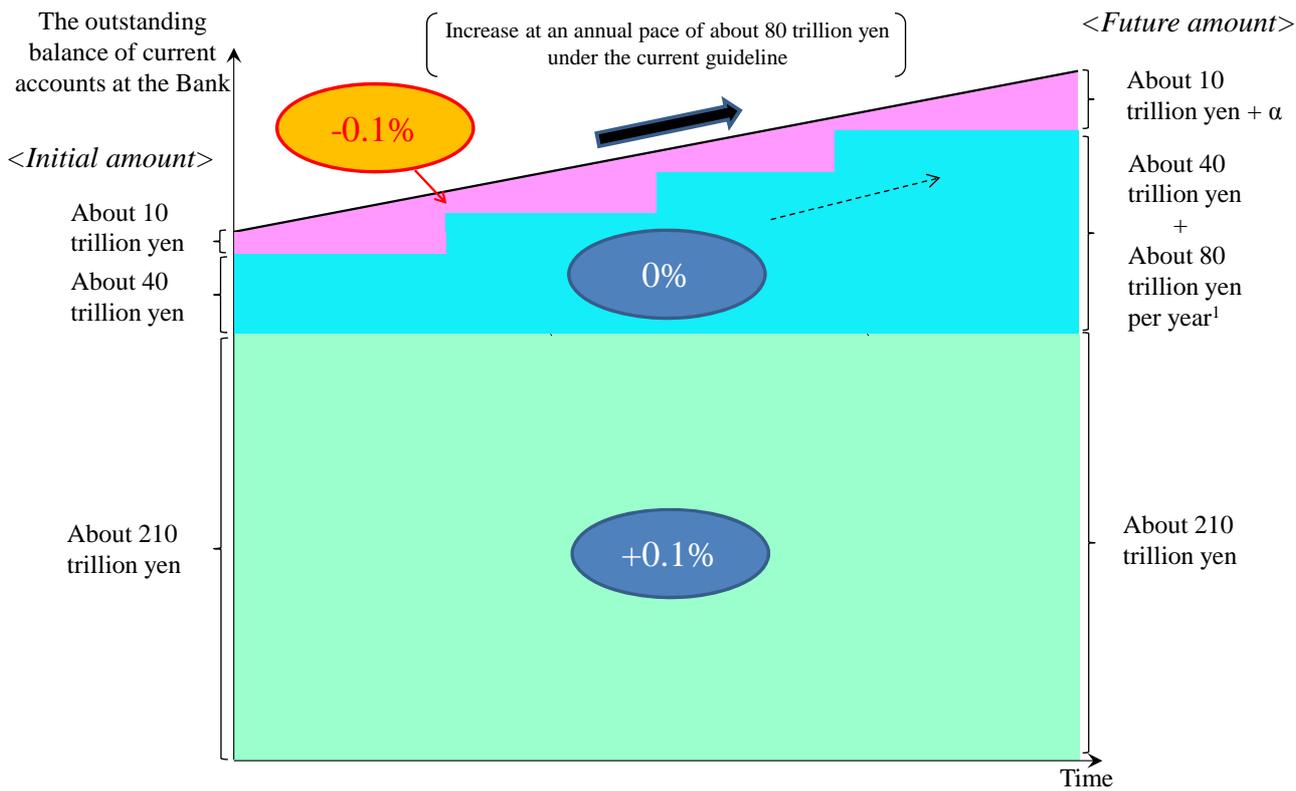
Source: Bloomberg.

### Amount Outstanding of Lending by Domestic Commercial Banks



Source: Bank of Japan.

# Three-Tier System



Note: 1. Assuming that the Bank will increase the amount outstanding of the tier to which a zero interest rate is applied at the same pace as the increase in the total outstanding balances of current accounts that financial institutions hold at the Bank, the pace of increase will be about 80 trillion yen per year.