May 23, 2016
Bank of Japan

Japan's Economy and the Bank of Japan: Yesterday, Today, and Tomorrow

Speech at the Economic Conference in Tokyo
Co-Hosted by Keio University and Bocconi University
to Commemorate the 150th Anniversary
of Diplomatic Relationship between Italy and Japan

Hiroshi Nakaso
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Introduction

It is a great honor to have the opportunity to speak to you today at this conference commemorating the 150th anniversary of the establishment of diplomatic ties between Italy and Japan. Moreover, I am grateful for the wide-ranging close relationship that has developed between the Bank of Italy and the Bank of Japan at all layers and am very happy to be able to speak with Senior Deputy Governor Rossi in this session. Personally, when I was a young boy, the legend of Romulus and Remus about the founding of Rome left a lasting impression on me, and ever since, I have been one of the many Japanese who are fascinated by Italy's history, art, fashion, food, and football. The subtitle of today's speech -- "Yesterday, Today, and Tomorrow" -- is chosen based on the title of the movie starring Sophia Loren and Marcello Mastroianni, which won the 1965 Academy Award for Best Foreign Language Film.

Well, let me start with my speech today. As is well known, following the collapse of the bubble economy in the early 1990s, Japan's economy suffered a prolonged period of low growth and deflation -- what has come to be called the "Lost Decades." The causes of the Lost Decades have been the subject of active debate among policy makers and economists alike, but until relatively recently, the associated issues were regarded as specific to Japan. However, since the 2008 global financial crisis, the United States and Europe also have faced the threat of low growth and deflation, giving rise to talk about a "Japanization" and renewed interest in Japan's experience. In fact, when I glance at the economies of the euro area including Italy, I have to say I often have a sense of *deja vu*.

Therefore, in my speech today, I would like to look back at Japan's experience since the collapse of the asset bubble and the Bank of Japan's policy responses to maintain the stability of the financial system as well as monetary policy. I will then go on to discuss the policy challenges for Japan as well as the implications of Japan's experience for Europe today.

I. Developments in Japan's Economy during the Lost Decades

As is well known, Japan's economy has been mired in stagnation since the 1990s. On the other hand, what is less well known, especially abroad, is that the challenges that Japan's economy has faced during this prolonged stagnation have differed over time. Put simply, until the early 2000s, the main challenge consisted of dealing with the instability of the financial system and deleveraging in the banking sector brought about by the collapse of the asset bubble, and of resolving the so-called "three excesses" in the corporate sector, consisting of excess debt, excess capacity, and excess employment. However, these problems were essentially resolved by the early 2000s and a more serious challenge since the second half of the 2000s has been the decline in Japan's growth potential and inflation expectations. The decline in both since the 1990s has been brought to the fore by the large decline in aggregate demand as a result of the global financial crisis. These two major challenges appeared in succession and it is mainly for this reason that Japan's economic stagnation has been so prolonged.

The Collapse of the Asset Bubble, Financial System Instability, Deleveraging, and the "Three Excesses"

In the 1990s, Japan's banking sector was riddled with a mountain of nonperforming loans resulting from the collapse of the 1980s bubble in real estate and stock prices. At the same time, Japan's corporate sector was suffering from the "three excesses" just mentioned -- excess debt, capacity, and employment -- owing to the expansion of businesses driven by overly optimistic growth expectations. In 1997 through 1998, these problems led to the successive failure of major financial institutions, significantly impairing the functioning of financial intermediation and causing a sudden credit crunch (Chart 1). The economy contracted severely and the year-on-year rate of change in the consumer price index (CPI) fell into negative territory, marking the beginning of Japan's prolonged, though moderate, deflation (Chart 2).

The Bank of Japan responded to this financial crisis in Japan during the 1990s by acting extensively as lender of last resort.[1] Moreover, since the safety net was underdeveloped at that time, the Bank of Japan, in order to carry out its mission of ensuring the stability of the financial system, played the role that essentially should have been the responsibility of the

[1] For details on Japan's experience during the financial crisis, see Hiroshi Nakaso, "The financial crisis in Japan during the 1990s: how the Bank of Japan responded and the lessons learnt," BIS Papers No. 6, October 2001.

government, had there been a robust financial safety net; specifically, in addition to supplying liquidity, the Bank took various extraordinary measures such as injecting capital to an ailing bank and setting up a bridge bank on its own. However, as a result, the Bank had the painful experience of recording credit losses reaching 200 billion yen. The crisis became obvious to everyone, and legislative steps to set up a safety net were finally taken. It was only in 1998, almost a decade after the collapse of the bubble, that a comprehensive framework for the temporary nationalization and the injection of capital using public funds was put in place.

Under this framework, the resolution of failed banks progressed. Whereas the increase in the number of failed financial institutions in the late 1990s occurred under circumstances in which the underdeveloped safety net made it difficult to get the crisis under control, the spike from 2000 onward is proof of a systematic resolution of failed banks under the new framework (Chart 3). During this period, deleveraging in the banking sector and the resolution of the three excesses in the corporate sector continued. For example, the amount outstanding of bank lending, which stood at more than 500 trillion yen in the second half of the 1990s, fell below 400 trillion yen in the mid-2000s -- a drop of more than 20 percent (Chart 1). The decline in bank lending through this deleveraging process finally came to an end in 2006, when bank lending rebounded. Moreover, in the same year, CPI inflation returned into positive territory, so that deflation temporarily receded (Chart 2). Fortunately, Japan had been able to avoid a 1930s-style deflationary spiral with a rapidly deteriorating economy and falling prices. Thus, by the mid-2000s, Japan's economy had overcome the negative legacy of the asset bubble and appeared to have laid the foundations for renewed sustained growth.

The Decline in the Growth Potential and Inflation Expectations

In fact, Japan's economy did return to a growth trajectory, benefitting from the tailwind of a favorable global economy spurred on by rapid growth in China. However, triggered by the outbreak of the global financial crisis in autumn 2008, circumstances changed at a stroke. In contrast with Europe and the United States, the exposure of Japan's financial sector to subprime mortgage-related financial products was limited and the financial system generally remained stable; however, the real economy, as a result of the significant slowdown of the global economy, could no longer rely on exports, the traditional engine of economic recoveries in Japan. Against this background, the decline in the potential growth rate came to the fore as a major economic challenge (Chart 4).[2] The decline in the potential growth rate reflects a slowdown in productivity growth since the collapse of the bubble economy, a decline in the labor force since the late 1990s due to demographic trends, and deceleration in the pace of capital accumulation.

Meanwhile, on the price front, CPI inflation fell back into negative territory, and inflation expectations started to slide (Chart 2). With only little room to lower interest rates, it did not take much time for Japan to face the zero lower bound on interest rates again and real interest rates remained elevated. At the same time, in line with the falling potential growth rate since the 1990s, the natural rate of interest -- that is, the interest rate at which the economy neither accelerates nor decelerates -- had declined substantially (Chart 4). As a result, Japan's economy fell into a situation in which it was difficult for the Bank of Japan to provide sufficiently accommodative financial conditions through an extension of policies that had been employed before. These economic difficulties were compounded by the Great East Japan Earthquake in 2011.

II. Evolution of Monetary Policy during the Lost Decades

Next, I would like to look back at monetary policies taken by the Bank of Japan from the start of the Lost Decades until recently. As the first central bank facing the aftermath of the collapse of a bubble and deflation, the Bank developed a range of new policy measures. These consist mainly of two measures that correspond to the challenges that the Bank faced at different points in time. The first measure was quantitative easing, QE for short, which concentrated on the provision of ample liquidity, while the second was quantitative and qualitative monetary easing, or QQE, which focused on raising inflation expectations (Chart 5).

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[2] I gave my detailed views on the implications of the decline in the potential growth rate in my speech on "Monetary Policy and Structural Reforms" at the Japan Society in New York in February 2016.

QE, which was implemented from 2001 to 2006, proved effective in that it maintained the stability of the financial system through the provision of ample liquidity and prevented Japan's economy from falling into a deflationary spiral. However, it was not powerful enough to reverse the declining trend in inflation expectations and overcome deflation. As mentioned earlier, Japan's natural rate of interest had been falling due to the decline in the potential growth rate; at the same time, real interest rates remained high due to the zero lower bound on nominal short-term interest rates and the decline in inflation expectations. As a result, QE did not provide sufficiently accommodative financial conditions. Under these circumstances, a vicious cycle of a decline in prices, a fall in sales and profits, restraint in wages, stagnation in consumption, and a further decline in prices took hold. This indicates that once the economy becomes stuck in a deflationary equilibrium, it is difficult to escape from it.

From a theoretical perspective, the policy prescriptions are obvious. What is needed is to remove, once and for all, the deflationary mindset and raise inflation expectations -- that is, to lower real interest rates -- through decisive monetary easing, and to raise the potential growth rate -- that is, to raise the natural rate of interest -- through a growth strategy and deregulation. This, in fact, is exactly what the three arrows of Abenomics are aimed at. One can often hear discussions as to whether monetary easing or structural reforms are more important, but I do not see this is a particularly constructive question. Both are essential for overcoming deflation and achieving sustainable growth. It is not a question of either monetary easing or structural reforms -- they are complementary to each other.

With regard to the first arrow, monetary policy, the Bank of Japan introduced the price stability target in January 2013 with the aim of achieving 2 percent inflation in terms of the year-on-year rate of change in the CPI. This was followed, in April 2013, by the introduction of QQE to achieve the price stability target of 2 percent at the earliest possible time. The challenge for monetary policy is how to raise inflation expectations given the limited room for lowering short-term interest rates. For this reason, QQE consists of two elements. The first is the Bank's strong and clear commitment to the target. Specifically, the Bank has made clear its stance that it seeks to achieve the price stability target at the earliest possible time, with a time horizon of about two years, and has committed itself to pursuing

QQE as long as it is necessary for achieving the price stability target in a sustainable manner. The second element is the exertion of downward pressure on nominal interest rates across the entire yield curve through massive purchases of Japanese government bonds (JGBs). That is, the Bank seeks to exploit to the greatest possible extent any remaining room for further declines in nominal interest rates. The combination of the two elements will lower real interest rates and thereby stimulate private demand. If people as a result see prices going up, this will raise their confidence in the Bank's commitment, which will further reinforce this process.

In January 2016, the Bank further enhanced QQE by adding the new dimension of a negative interest rate. "QQE with a Negative Interest Rate" aims to exert stronger downward pressure on the entire yield curve by lowering the short end of the yield curve through a negative interest rate applied to a certain tier of current accounts at the Bank while continuing with massive purchases of JGBs. In designing the negative interest rate policy scheme, we were inspired by the experience of central banks in Europe, including the ECB.

III. The Effects of QQE and QQE with a Negative Interest Rate

About three years have passed since the introduction of QQE, and the Bank judges that QQE has been exerting its intended effects.

Let me start by considering the effects on interest rates. Since the introduction of QQE, yields on 10-year JGBs have cumulatively fallen by about 70 basis points (Chart 6). Against this background, bank lending rates have continued to decline, so that the average interest rate on the stock of total bank lending has fallen to a level around 1 percent. The amount outstanding of bank lending, including to small firms, has continued to rise, with the annual pace of increase recently exceeding 2 percent (Chart 1). It appears that, at present, with real interest rates substantially below the natural rate of interest, financial conditions for the real economy are highly accommodative (Chart 4).

Given such accommodative financial conditions, the real economy has evidently improved. In the household sector, the employment and income situation has steadily improved. Labor market conditions have continued to tighten as seen in the fact that the unemployment rate has declined to the range of 3.0-3.5 percent, which we think corresponds to full employment (Chart 7). Reflecting the tight labor market conditions, base pay increases -- that is, across-the-board wage increases mainly reflecting inflation and decided in the annual labor-management wage negotiations -- returned in 2014 for the first time in two decades. Base pay increases have continued this year, marking the third consecutive year of such increases. In the corporate sector, profits have increased to record levels, partly helped by the correction of the excessive appreciation of the yen and the decline in energy prices. Against this background, firms have maintained their positive stance with regard to fixed investment.

As for prices, the year-on-year rate of change in the all-item CPI excluding fresh food is about 0 percent, reflecting the decline in energy prices, but the underlying trend in inflation has steadily improved. CPI inflation for all items excluding fresh food and energy, which had been in the range of about minus 0.5 to minus 1.0 percent before the introduction of QQE in April 2013, has been positive for 30 consecutive months since the latter half of 2013 and in recent months has been about 1 percent (Chart 8). This is the first time since the second half of the 1990s, when Japan's economy fell into deflation, that such sustained inflation has been observed. Moreover, looking at price changes across all items, the share of price-increasing items minus the share of price-decreasing items has been rising clearly since the introduction of QQE, and is currently near its peak. This indicates that firms have maintained their willingness to increase prices, and a virtuous cycle between a moderate rise in inflation and wage growth has remained in place.

Meanwhile, I admit there has been a fair amount of criticism in Japan of the negative interest rate policy adopted by the Bank in January 2016. The situation seems not dissimilar to the one in Europe. Such criticism can be divided into two broad strands.

The first is that the negative interest rate policy may have an adverse impact on economic activity and prices by squeezing banks' profits, which could hamper the functioning of financial intermediation. However, in the case of Japan, the concern that the negative interest rate policy will undermine financial intermediation is unfounded, at least at this moment. First, as I explained, the process of deleveraging in Japan was completed by the mid-2000s, and financial institutions now have a strong capital base, partly helped by the fact that the impact of the global financial crisis on them was limited. Second, despite the current low interest rate environment, the profits of both major banks and regional banks are close to record levels, mainly reflecting the significant decline in credit costs due to the steady economic recovery. And third, when the Bank introduced the negative interest rate policy, it designed the policy so as not to excessively squeeze banks' profits. Specifically, the Bank designed the policy framework such that a negative interest rate is applied only on the margin by dividing the current account balances that financial institutions hold at the Bank into three tiers. As the Bank continues to purchase JGBs, the current account balances will increase accordingly; however, since the tier will be adjusted at the same time, the balances subject to a negative interest rate will remain relatively small, between around 10 and 30 trillion yen. Needless to say, the Bank will closely monitor the effects on financial institutions' earnings, and will examine and evaluate those effects in the *Financial System Report*. The importance of banks' functioning as financial intermediaries in the transmission of monetary policy cannot be overemphasized.[3] That is exactly why, since the outbreak of the financial crisis in the 1990s, the Bank of Japan has consistently acted as the guardian of financial intermediation. I assure you this shall not change in the future.

The second criticism is that the general public will not really feel the benefits of the negative interest rate policy. While the public understand that their deposits will not diminish as a result of the negative interest rate policy, we are aware that, for example, households that do not have a mortgage will not necessarily feel any specific benefits. Particularly those who rely on their savings, such as pensioners and the elderly, may think that the negative interest rate policy has an adverse effect, since their interest income further decreases. The Bank's negative interest rate policy can be understood as an extension of QQE in that its transmission channel is to maintain real interest rates well below the natural rate of interest, but I cannot deny that some aspects of this policy may be counterintuitive to

[3] I explained the importance of the functioning of financial intermediation in my speech "Challenges toward Financial Stability and the Policy Frontier: Unconventional Monetary Policy, Macroprudence, and Financial Institutions' Low Profitability" made at the IVA-JSPS seminar in Stockholm in March 2016.

the public. Therefore, we need to carefully listen to criticisms. At the same time, we need to clearly explain that the effects of monetary policy should not be assessed only in terms of households' and firms' direct profits and losses in transactions with banks, but in terms of the macroeconomic effects such as the benefits from an increase in employment and a rise in wages. In other words, it is essential to explain more persuasively that these policy measures are necessary for the economy to revert to a sustainable growth path. This seems to be a challenge the Bank of Japan and the ECB have in common.

At any rate, I will keep a watchful eye on how the negative interest rate policy, through the further decline in interest rates following its introduction, will work through the economy.

IV. Central Banks' Lender of Last Resort Function: Lessons from the Global Financial Crisis

So far, I have outlined the challenges facing Japan's economy in the past and present and how the Bank of Japan has responded. Now, looking into the future, I would like to touch upon two issues which I believe are important from the perspective of central banks.

First, we need to work on the development of an international financial safety net and discuss, from a global perspective, central banks' lender of last resort function. Domestically in Japan, our financial safety net has been strengthened based on the lessons learned during Japan's financial crisis in the 1990s and the role of the Bank of Japan's lender of last resort function has become quite clear. The global financial crisis has raised new challenges for central banks' role as lender of last resort, especially in the case of a temporary liquidity crisis of a systemically important financial institution operating in multiple jurisdictions and currencies. Issues include how central banks should share information and how responsibilities should be allocated in such circumstances. Moreover, it is also possible that different countries and jurisdictions treat banks and non-bank differently under their individual safety nets. The Bank of Japan actually has experience in some aspects of such cross-border challenges, since Yamaichi Securities, which failed in 1997 and to which the Bank provided liquidity, had overseas bank subsidiaries.

In addition, partly as a result of lessons learned during the global financial crisis, the use of central counterparties (CCPs) to centrally clear transactions is being promoted to reduce settlement risks. This raises additional issues, such as how liquidity shortages at cross-border CCPs dealing with multiple currencies should be addressed, and how central banks should contribute to resolving such issues.[4]

Central banks are responsible for the stability of their respective domestic financial systems. However, in order to fulfill their responsibilities, they need to ever more closely monitor and engage with the global financial system. There is also a growing importance of further strengthening cooperation among central banks. I believe the Bank of Japan, based on its wealth of experience, should take a leading role in the discussions in this area.

V. Strengthening Japan's Growth Potential

The second issue is the need to redouble efforts to raise the growth rate. In order to return Japan's economy to a sustainable growth path, it is also important to strengthen the dynamism of the corporate sector and raise the economy's growth potential. In this respect, the government's growth strategy plays a major role. If the growth strategy bears fruit, the natural rate of interest will rise in line with the potential growth rate. The shape of the yield curve will gradually return to normality as upward pressure is exerted on the longer end.

A key characteristic of the government's growth strategy is that it will take a while before its effects become visible. Nonetheless, we are starting to see some tangible results. Let me give you one example: raising the labor participation of women (Chart 9). As in Italy, the female labor force participation rate in Japan has historically been low and raising it is a long-term challenge. Specifically, a major issue is that women in their prime of life have to interrupt their career for child rearing. Against this background, one of the pillars of the Abe administration's aim to achieve the "Dynamic Engagement of All Citizens" is to boost support for child rearing. In fact, the labor participation rate of women has already started to

[4] I provided a detailed explanation of central bank policies with regard to financial market infrastructure and the associated challenge, including the relationship between central banks and CCPs, in my remarks on "Central Bank Policy on Financial Market Infrastructure" delivered at the Conference on Retail Payments in May 2016.

increase through measures such as the expansion of childcare facilities. If such tangible results were to spread, this would build further public support for the growth strategy and help to drive it forward.

Of course, the problems Japan needs to address span a wide range of areas. As mentioned, the decline in Japan's potential growth rate is due partly to the deceleration in productivity growth. To give you one example, it appears that there is substantial room for productivity improvements in IT-related sectors. Both in IT-producing and IT-using sectors, productivity growth is lower than in the United States (Chart 10). In this context, a survey on firms in the United States and Japan provides instructive results: compared to firms in the United States, fewer firms in Japan attach importance to IT investment or have a chief information officer (CIO). These results suggest that strengthening Japan's growth potential is not something that can be achieved through the government's growth strategy alone; what is also needed are greater efforts on the part of the private sector to strengthen competitiveness.

VI. Lessons for Europe

Finally, I would like to make a few comparisons between Japan's Lost Decades and Europe since the global financial crisis. What is worth noting is that in Europe the policy response has been quick and decisive. In addition to innovative policy measures such as the coordinated provision of dollar funds by the major central banks through swap arrangements, financial system instability was warded off through the provision of ample liquidity, preventing the financial crisis from turning into a global panic. Moreover, on the institutional front, the Single Supervisory Mechanism (SSM) for the supervision of banks became operational. Further, I expect that efforts to deal with remaining issues such as the full operation of the Single Resolution Mechanism (SRM) charged with the resolution of failed financial institutions and the expeditious recapitalization of undercapitalized banks will make good progress. Meanwhile, on the monetary policy front, the ECB has stressed from an early stage the risks associated with a potential decline in inflation expectations. In fact, the ECB has responded very proactively, being the first among major central banks to introduce a negative interest rate policy and combining it with asset purchases.

There is also perceived to be a need to redouble efforts to drive ahead with structural reforms to raise the potential growth rate. However, this too is clearly recognized, as indicated in President Draghi's observation that low interest rates are not the consequence of monetary policy but a symptom of low growth and low inflation. I am convinced that the risk of a Japanization of the euro economy is small, given that European policy makers are aware of the issues and are responding appropriately.

Conclusion

In my speech today I tried to look back at Japan's Lost Decades and consider potential lessons for the current economic situation in Italy and Europe. Naturally, there are many other aspects in which Japan and Italy can learn from each other, not only with regard to finance and the economy. Looking at the OECD's Better Life Index, which measures happiness across countries based on various indicators such as education and the living environment, both Japan and Italy rank in the middle of OECD countries; interestingly, however, individual indicators suggest that whereas Japan ranks favorably in terms of labor market conditions and education, Italy ranks highly in terms of work-life balance and health (Chart 11).

It is said that Japan became widely known in Europe when the Venetian-born merchant Marco Polo in his 13th century travel diary introduced Japan as "Zipangu, the Land of Gold." Since then, as countries with a long history and long traditions, Italy and Japan have continued to learn from each other. Let me close this speech by saying that although our two countries are currently facing a number of similar problems, I am convinced that by overcoming these problems through cooperation, our bonds will continue to grow over the next 150 years and bring a golden future for our two countries, even without the Zipangu's gold.

Thank you.

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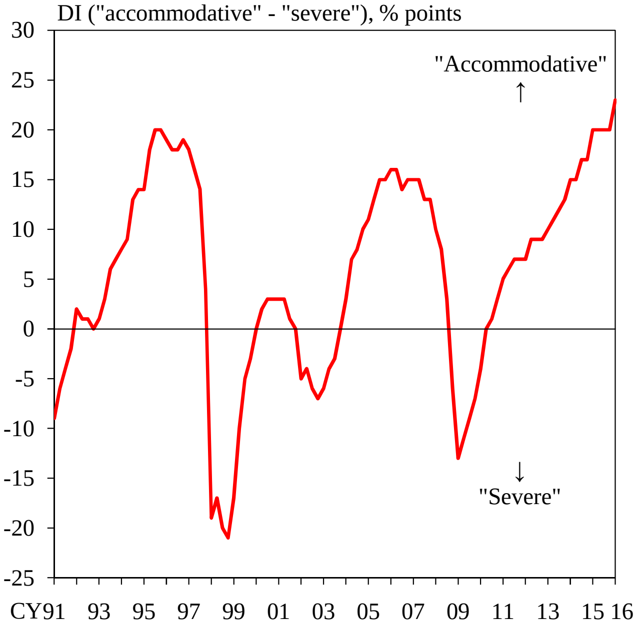
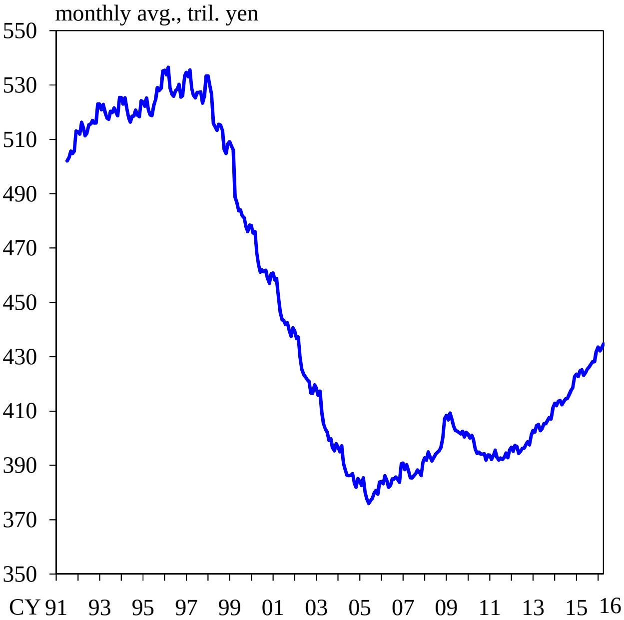
Chart 1

Deleverage at the Banking Sector in Japan

Tankan: Lending Attitude of Financial Institutions



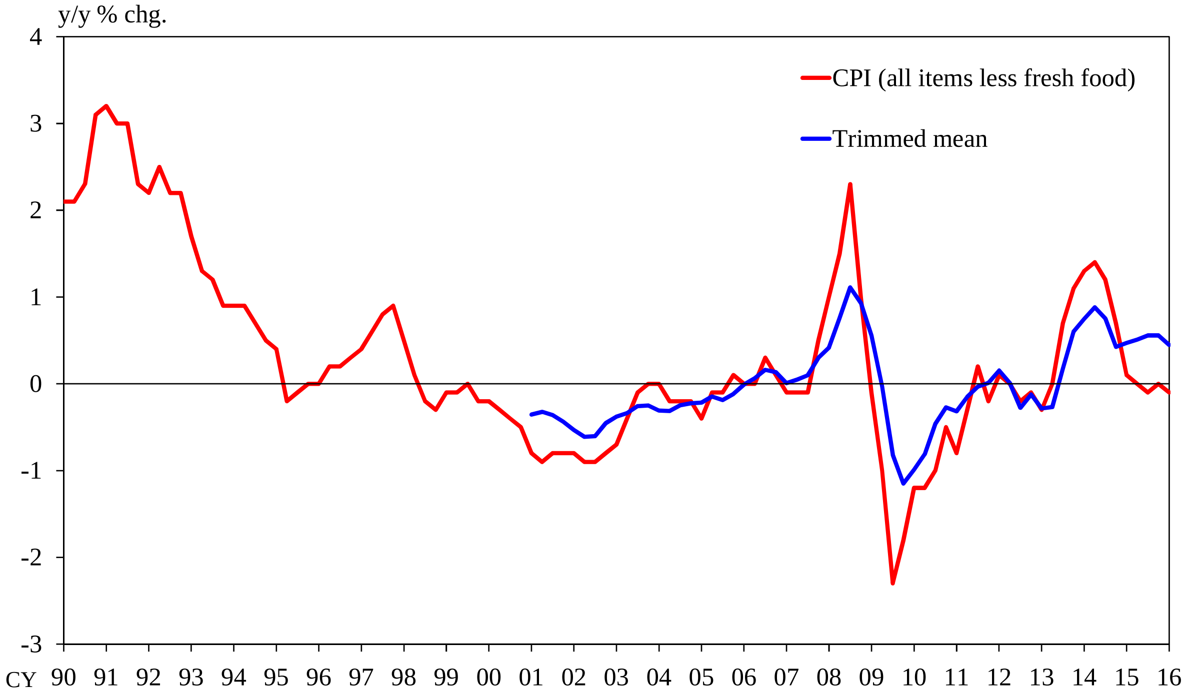
Amount Outstanding of Bank Lending



Source: Bank of Japan.

Chart 2

Consumer Prices



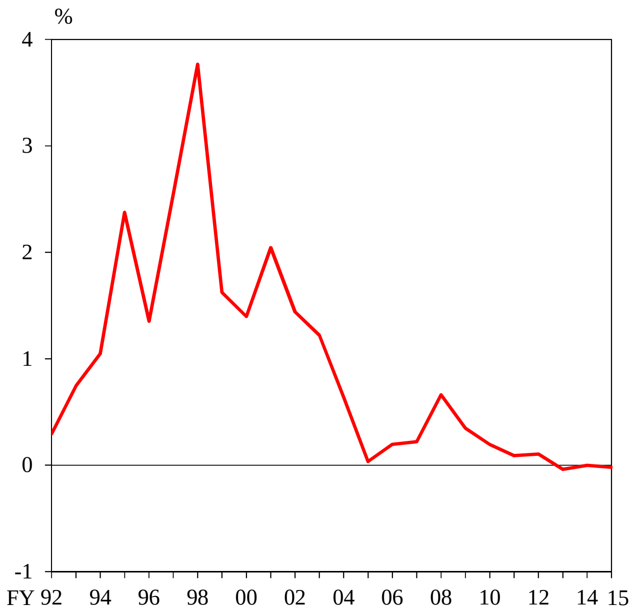
Notes: 1. Figures are adjusted to exclude the estimated effects of changes in the consumption tax rate.
2. Figures for the trimmed mean are the weighted averages of the year-on-year price changes in all individual items making up the CPI. Items are arranged in ascending order of their year-on-year rate of price change and those falling into the upper and lower 10 percent tails by weight are trimmed.

Source: Ministry of Internal Affairs and Communications.

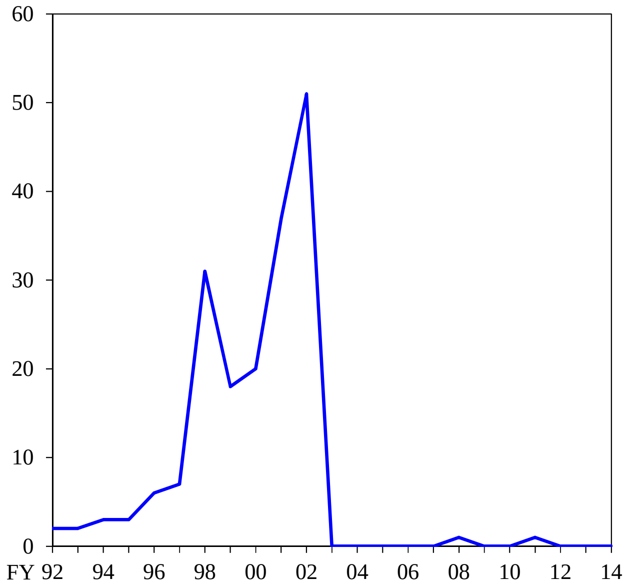
Chart 3

Developments in the Financial System

Credit Cost Ratio of Banks



Number of Failed Financial Institutions



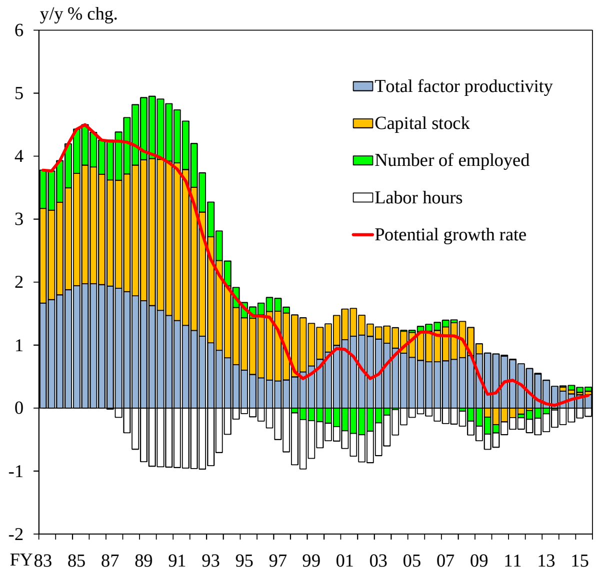
Notes: 1. Credit cost ratio for fiscal 2015 is as of the first half of fiscal 2015 (annualized).
2. The number of failed financial institutions is the total number of failed banks, *shinkin* banks, and credit cooperatives. Figures are based on the date when final measures for resolution, such as financial assistance by the Deposit Insurance Corporation of Japan, were implemented.

Sources: Bank of Japan; Deposit Insurance Corporation of Japan.

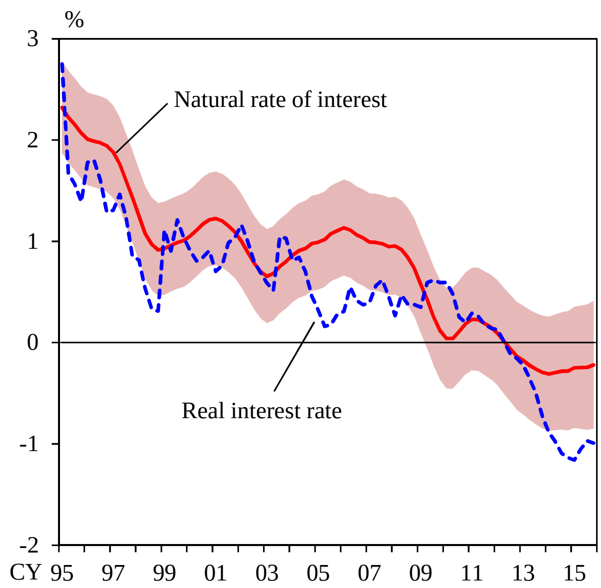
Chart 4

Japan's Potential Growth Rate and Natural Rate of Interest

Potential Growth Rate



Natural Rate of Interest



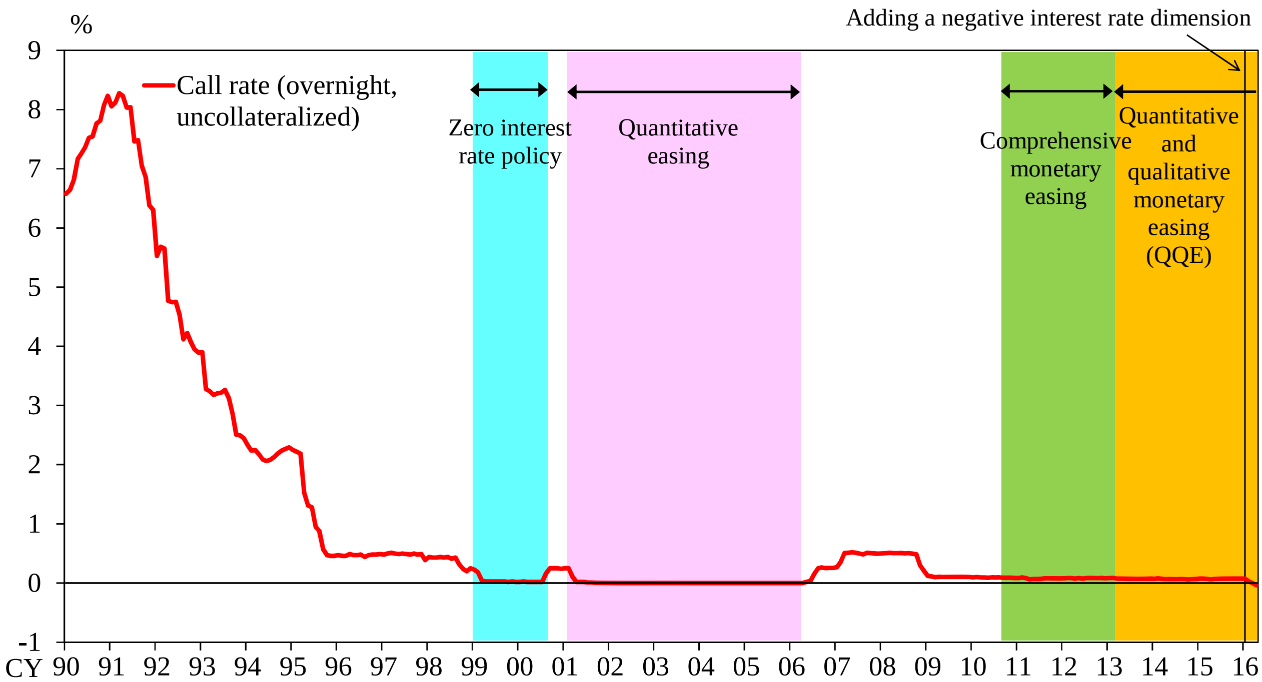
Notes: 1. The potential growth rate is estimated by the Research and Statistics Department, Bank of Japan. Figures for the second half of fiscal 2015 are those of 2015/Q4.

2. The natural rate of interest and real interest rate are calculated based on 10-year government bond yields. The shaded area indicates the 95 percent confidence interval for the natural rate of interest. For details of the estimation procedures, see Imakubo *et al.* (2015), "The Natural Yield Curve: Its Concept and Measurement," Bank of Japan Working Paper Series, 15-E-5.

Sources: Cabinet Office; Bank of Japan; Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare; Ministry of Economy, Trade and Industry; Research Institute of Economy, Trade and Industry; Bloomberg.

Chart 5

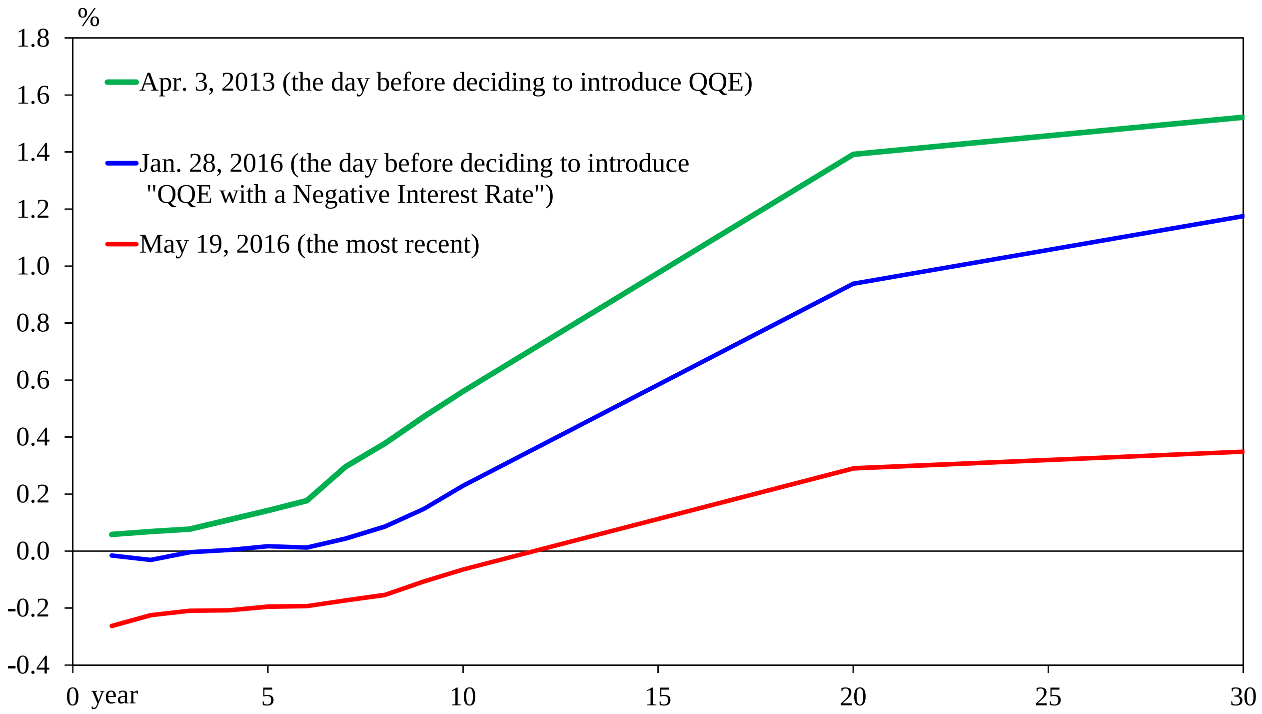
Monetary Policy since the 1990s



Source: Bank of Japan.

Chart 6

JGB Yield Curve

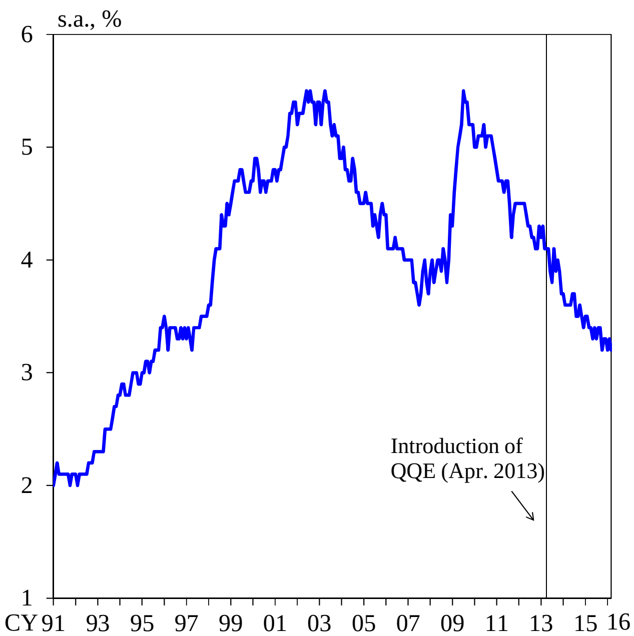


Source: Bloomberg.

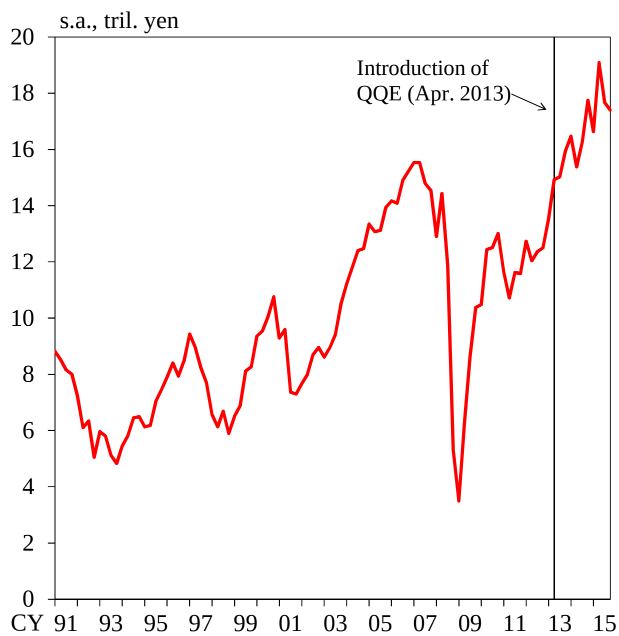
Chart 7

Labor Market Conditions and Corporate Profits

Unemployment Rate



Current Profits

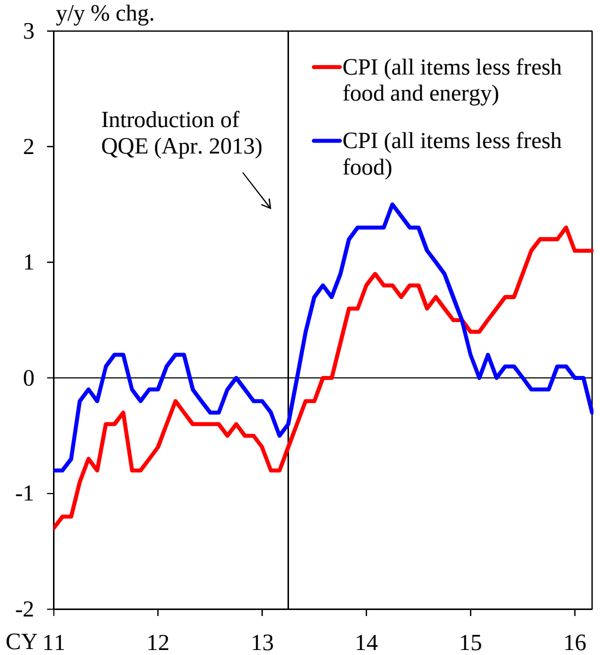


Sources: Ministry of Internal Affairs and Communications; Ministry of Finance.

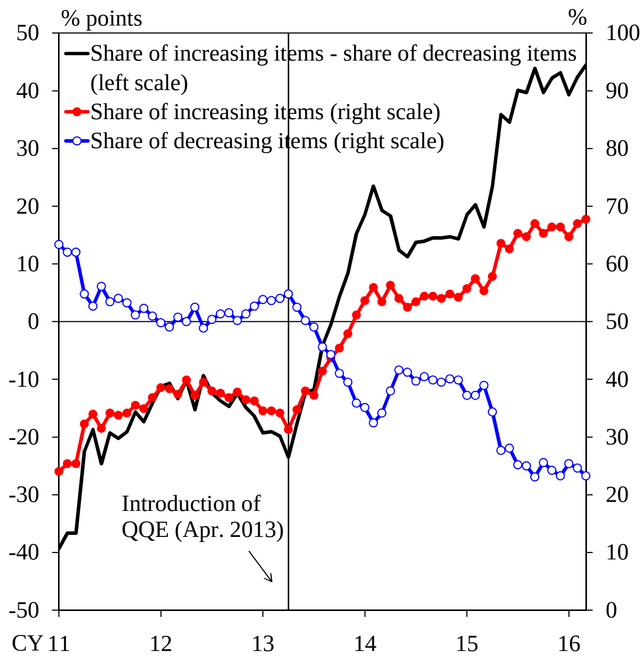
Chart 8

Price Developments

Consumer Price Index



Share of Increasing and Decreasing Items



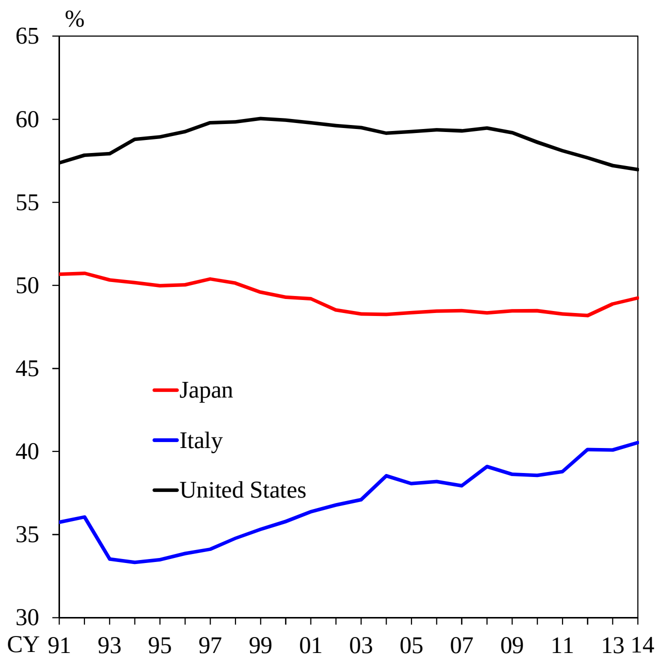
Notes: 1. Figures are adjusted to exclude the estimated effects of changes in the consumption tax rate.
2. Figures for the CPI (all items less fresh food and energy) are calculated by the Research and Statistics Department, Bank of Japan.
3. The share of increasing/decreasing items is the share of items in the CPI (all items less fresh food) whose price indices increased/decreased from a year earlier.

Source: Ministry of Internal Affairs and Communications.

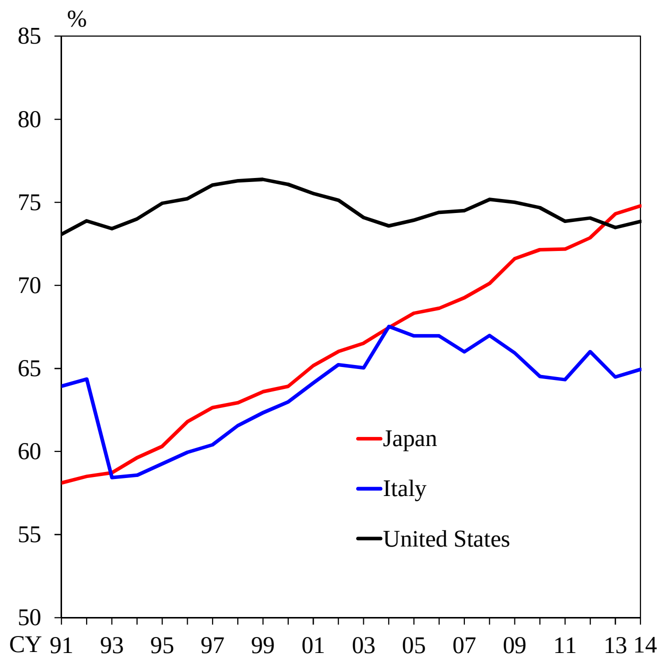
Chart 9

Labor Force Participation Rate of Women

Total



Aged 25 to 34



Source: OECD.

IT-Related Sector and Labor Productivity

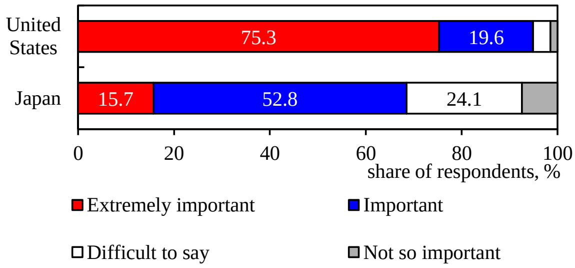
Growth Rate of Labor Productivity

annual growth rate from CY 1998 to CY 2013, % chg.

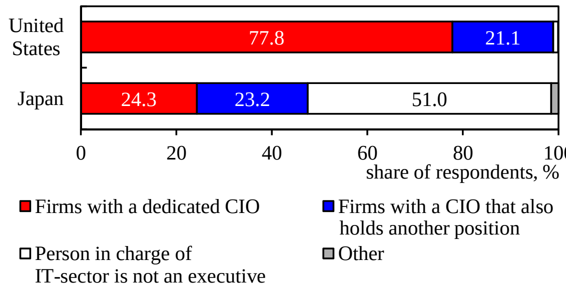
IT-producing sector		IT-using sector	
Japan	United States	Japan	United States
+ 7.5	+ 9.3	+ 0.7	+ 1.2

State of IT Management

IT-Users' Perception of IT Investment



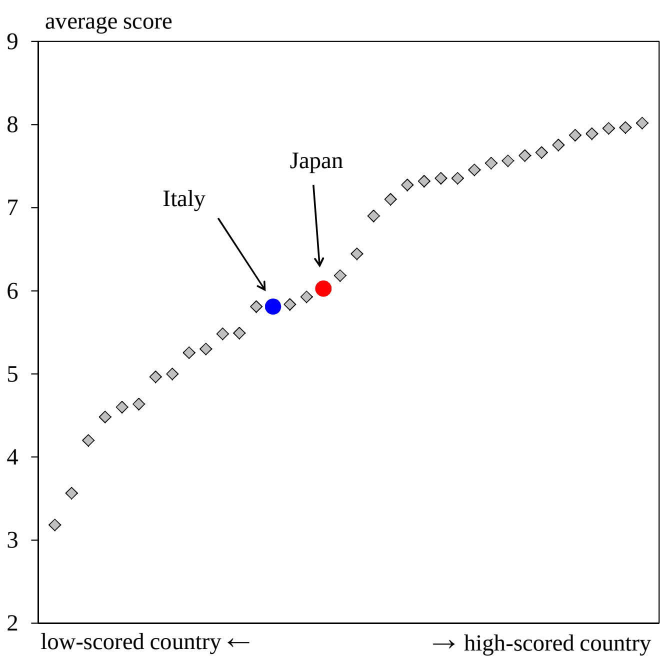
Whether Firms Have a CIO



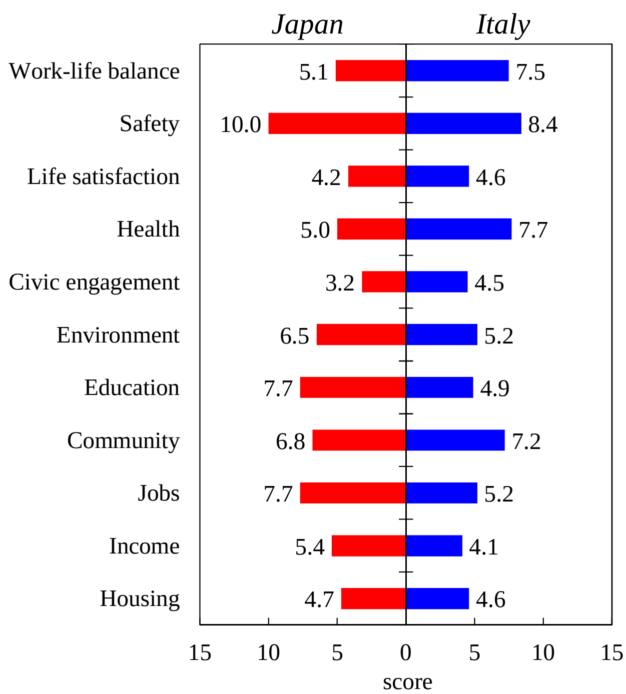
Notes: 1. IT-producing sector consists of "electrical machinery, equipment and supplies," "machinery," and "precision instruments."
IT-using sector consists of "wholesale and retail trade," "information and communications," and "service activities."
2. Figures on the "state of IT management" are based on a survey conducted by JEITA and IDC Japan in June and July 2013.
The figures are taken from conference material presented by JEITA at the CEATEC JAPAN 2015 (with some adjustment by the Bank of Japan).
CIO stands for chief information officer.
Sources: Cabinet Office; Bureau of Economic Analysis; Japan Electronics and Information Technology Industries Association (JEITA); IDC Japan.

Better Life Index

Average Scores for OECD Countries



Score of Each Topic for Japan and Italy



Notes: 1. The average score for each country is the average of scores of eleven topics that comprise the Better Life Index (2015 edition).
2. Countries in the left chart include Brazil and Russia other than OECD countries.
Source: OECD.