Will Abenomics Restore Japan's Growth?

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September 6, 2013

Revised: October 12, 2013

* The paper was prepared for Macro Economy Research Conference "Prospects for Growth In the World's Four Major Economies" sponsored by Nomura Foundation and held at Brookings Institution, Washington, DC on September 11, 2013.

1. Introduction

Since Shinzo Abe came back to be the Prime Minister of Japan after the Liberal Democratic Party (LDP) won the majority in the lower house election in December 2012, the rest of the world has been paying more attention to Japan's economic policy. Figure 1 shows how the numbers of articles in the Wall Street Journal and the Financial Times that include "Japanese economy" jumped after the Abe government started. The economic policy pursued by the Abe government, dubbed "Abenomics," has been discussed frequently inside and outside Japan. Many observers of the Japanese economy apparently hope that Abenomics finally ends the economic stagnation and that restart the growth of Japan.

Will Abenomics restore Japan's growth as many hope? That is the question this paper asks. To answer the question, we need to understand why Japan's growth slowed down to start with, why the Japanese economy has stagnated most of the last two decades, and how Abenomics can change these conditions.

The next section starts out by describing the three elements of Abenomics, which are (i) monetary expansion, (ii) flexible fiscal policy, and (iii) growth policy. The section also reviews how much of the Abenomics has been implemented as of this writing (October 2013). Then, Sections 3 reviews major factors that pushed Japan into the long stagnation. The section draws heavily on the policy reports that I wrote with Anil Kashyap for National Institute for Research Advancement (NIRA) (Hoshi and Kashyap, 2011 and 2012). Sections 4 through 6 examine each of the three elements of Abenomics and discuss how (or if) they can benefit the Japanese economic growth. Section 7 concludes.

2. What is Abenomics?

What is Abenomics and what is new about it? Abenomics is the economic policy introduced by the government led by Prime Minsiter Shinzo Abe, who formed the cabinet following the victory of the LDP in the Lower House Election in December 2012. The LDP came back as the leading party after three years when the government was led by the Democratic Party of Japan (DPJ). It was also a comeback for Prime Minister Abe, who followed Junichiro Koizumi to become the prime minister in 2006 but resigned in less than a year.

Abenomics consists of three components, which is referred to as "three arrows." The first "arrow" is expansionary monetary policy. The second is "flexible" fiscal policy, which is supposed to mean fiscal expansion in the short run but fiscal consolidation in the medium run. The third is the growth strategy aimed at increasing the long-term growth rate of the Japanese economy.

Thus, Abenomics is a policy mix of expansionary macroeconomic policy and supply-side policy to stimulate the long-term economic growth. In this sense, there is nothing new about Abenomics It is a standard policy mix to counter a recession and try to stimulate the growth at the same time. Why, then, is it called Abenomics, as if it is a radical new idea?

Political marketing, in which the Abe administration has been more successful than its immediate predecessors, is an important part of the answer, but there is more. Abenomics is a standard economic policy to combat recession, but the standard policy is new in Japan because its monetary policy component differs from the policy pursued in Japan before the Abenomics.

As many observers have noted, the Bank of Japan was reluctant in expanding monetary policy aggressively. This was especially clear after the global financial crisis of 2007-2009: the Bank of Japan was not as aggressive as other major banks in expanding its balance sheet trying to stimulate the economy. Figure 2 shows how the balance sheet sizes for major central banks increased following the global financial crisis. In the figure, the size of each central bank in January 2007 is normalized to be 100. The Federal Reserve's balance sheet was more than doubled in two months in late 2008 and continued to grow. The Bank of England followed by almost tripling the balance sheet in mid-2009. The European Central Bank did not change its balance sheet such drastically, but its balance sheet was more than doubled by the end of 2011. In contrast to these three central banks, the size of balance sheet for the Bank of Japan hardly changed until the late 2010. It started to increase since 2011 but the rate of increase was much lower before the Abe administration.

The BOJ often contested the view that the BOJ was less aggressive in expanding monetary policy compared to the other major central banks. For example, the former BOJ Governor Masaaki Shirakawa points out that the monetary base normalized by nominal GDP for Japan was higher than the U.S. or the U.K. and showed several episodes of increases as remarkable as those for the U.S. (Shirakawa, 2012). Thus, the BOJ did actually more than the Federal Reserve did after the global financial crisis, he argues. Figure 3 reproduces the figure of monetary base normalized by nominal GDP in Shirakawa (2012).

It is problematic, however, to use the ratio of the monetary base to nominal GDP to compare the extent of monetary expansion between Japan and the U.S. First, Japan had higher ratio of the monetary base to nominal GDP even before the financial crisis, perhaps reflecting higher use of cash (rather than personal checks or credit cards) in transactions compared to the U.S. Second, more importantly, the ratio increases sharply when the nominal GDP contracts even if the monetary policy does not turn expansionary. Indeed, the three out of the four episodes of sharp increase of the ratio for Japan in Figure 3 happened when the nominal GDP shrunk suddenly. The nominal GDP growth from the first quarter of 2001 to the first quarter of 2002 was -3.0%; the nominal GDP growth from the first quarter of the first quarter of 2008 to the first quarter of 2009 was -8.8%; the nominal GDP growth from the second quarter of 2010 to the second quarter of 2011 was -3.9%. The only exception that the increase of the ratio may be primarily due to monetary expansion is the increase from 2002 to 2003, when the nominal GDP growth rate was at -1.0%.

Why was the BOJ reluctant to expand monetary policy as aggressively as the Federal Reserve? Hoshi (2011) presents a possible answer by considering a simple game played by the BOJ and the financial regulator (the Financial Services Agency after 2000). The model assumes that both policy makers value structural reform of the economy as well as low unemployment. The structural reform is assumed to be accelerated by the costly effort of the financial regulator but slowed down by inflation. Inflation is assumed to lower the unemployment rate but the effort to advance structural reform increases unemployment. The Nash equilibrium is characterized by the inflation rate and the structural reform efforts lower than the levels that either policy authority considers optimal. Given the extremely low inflation, the government is reluctant to step up the effort for structural reform because that would increase the unemployment rate to too high a level. Given the lack of structural reform efforts by the government, the BOJ is reluctant to inflate the economy because it would further slow the structural reform.

Suggestive evidence that the BOJ has been playing such a game comes from the repeated reference by the BOJ on the importance of structural reform led by the government whenever the BOJ made monetary policy more expansionary. For example, when the BOJ expanded their Quantitative Easing on February 28, 2002 by increasing the target level of the outstanding current accounts balance (CAB; bank deposits at the BOJ) to over ¥15 trillion and increasing the amount of purchase of Japanese government bonds (JGB) to ¥1 trillion per month, the BOJ announced:

> To realize the full permeation of the effects of strong monetary easing, it is essential to strengthen a financial system and ensure its stability by making a swift move to resolve the non-performing loan problem. It is also vital to make progress in structural reform on the economic and industrial fronts through tax reform, streamlining of public financial institutions, and deregulation. The Bank strongly hopes that both the Government and the private sector, in particular financial institutions, will take more determined and effective steps in this regard. ("On Today's Decision at the Monetary Policy Meeting," February 28, 2002)

More recently, on October 30, 2012, when the BOJ expanded the monetary policy by increasing the size of the Asset Purchase Program and newly introduced the Stimulating Bank Lending Facility, which lends long-term funds to financial institutions at low interest rates, the policy announcement was accompanied by a joint statement by the BOJ and the government on "overcoming deflation." The statement starts by clarifying both the BOJ and the government aim at overcoming deflation.

> The Government and the Bank share the recognition that the critical challenge for Japan's economy is to overcome deflation as early as possible and to return to a sustainable growth path with price stability. The Government and the Bank will work together and make their utmost efforts to address this challenge. ("Measures Aimed at Overcoming Deflation," October 30, 2012)

Then, the statement presents the BOJ's understanding of what it takes to overcome deflation.

> The Bank recognizes that the challenge mentioned above will be met through the combination of (i) efforts by a wide range of economic agents to strengthen the economy's growth potential and (ii) support from the financial side. The Bank strongly expects the Government to vigorously promote measures for strengthening Japan's growth potential. ("Measures Aimed at Overcoming Deflation," October 30, 2012)

The document was signed by the BOJ Governor Masaaki Shirakawa, Ministry of State for Economic and Fiscal Policy Seiji Maehara, and Minister of Finance Koriki Jojima. Toward the end of the DPJ government, the government pressure on the BOJ to expand monetary policy aggressively was already mounting. The BOJ agreed to do more if the government promises to do more structural reform as the statement shows.

Thus, the monetary policy part of Abenomics may be new (though not unprecedented) in Japan because the BOJ showed reluctance to monetary expansion as aggressive as other major central banks. The other parts of Abenomics, fiscal policy and growth strategy, are not new even in Japan. Abenomics's fiscal policy, especially fiscal expansion that has preceded any serious efforts to come up with a long-term budget consolidation plan, was what the government (both LDP and DPJ) repeatedly tried in the last two decades. The fiscal policy turned especially expansionary after the global financial crisis, measured by the size of budget deficits.[1]

The growth strategy that includes structural reforms is not a new idea, either. Going back at least to Prime Minister Ryutaro Hashimoto's government (1996-1998), the Japanese government created numerous reform plans and growth strategies. Only few of them were successful in enhancing the potential growth of the Japanese economy. Thus, it becomes important to compare the contents of Abe's growth strategy to those in the past policies and examine if it is different this time.

Before we ask if Abenomics will succeed, let us look how much of the Abenomics have been implemented as of this writing (October 2013).

On monetary policy front, the pressure on the BOJ to do more to stop deflation was already mounting before the LDP recaptured the power in December 2012. The BOJ published a joint statement on overcoming deflation with the government and expanded the monetary policy,

[1] Fiscal expansion in Abenomics would be new in many European countries as Krugman (2013) and Stiglitz (2013) argue.

as we saw above. The Abe administration intensified the pressure, even suggesting a change of the Bank of Japan Act to take away the BOJ's legal independence.

On January 22, 2013, the BOJ introduced the price stability target of 2% CPI (Consumer Price Index) inflation rate. The BOJ had the price stability "goal" (*mokuto*) of the CPI inflation rate between 0% and 2%, which was introduced in February 2012, the word "goal" was replaced by "target" (*mokuhyō*).[2] The BOJ also expanded the Asset Purchase Program by introducing the "open-ended asset purchasing method," in which the BOJ buy a certain amount of financial assets (about ¥13 trillion initially) without any termination date. The policy changes were announced with a new joint statement with the government once again. In addition to the reaffirmation of the BOJ's commitment to the price stability, the statement spells out the commitment on the government side as follows.

> The Government will, in order to revitalize Japan's economy, not only flexibly manage macroeconomic policy but also formulate measures for strengthening competitiveness and growth potential of Japan's economy, and promote them strongly under the leadership of the Headquarters for Japan's Economic Revitalization. Those measures include all possible decisive policy actions for reforming the economic structure, such as concentrating resources on innovative research and development, strengthening the foundation for innovation, carrying out bold regulatory and institutional reforms and better utilizing the tax system. ("Joint Statement of the Government and the Bank of Japan on Overcoming Deflation and Achieving Sustainable Economic Growth," January 22, 2013.)

Thus, the BOJ still seems to be playing the game described above with the government: the BOJ expands monetary policy if the government commits to structural reform.

As Governor Shirakawa's term was ending, Haruhiko Kuroda was appointed to be the new BOJ Governor on March 20, 2013.[3] In the first monetary policy meeting under Governor Kuroda on April 4, 2013, the BOJ introduced "quantitative and qualitative monetary easing" (QQE) and announced the bank will achieve the price stability (2% inflation target) in 2 years.

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[2] The BOJ seems to believe that the word change is significant. "Switching from a "goal" to a "target" reflects an increasing awareness regarding the importance of flexibility in the conduct of monetary policy in Japan. …… The conduct of monetary policy has to be flexible by examining various risk factors, including those related to financial imbalances, in addition to the assessment of current developments and outlook for economic activity and prices, from the perspective of achieving sustainable growth with price stability. …… Over the last year, there has been an increasing awareness of such understanding in Japan as well. In such circumstances, it is judged transparent and appropriate to use the expression, "target," in order to explain the Bank's thinking on price stability." ("The 'Price Stability Target' under the Framework for the Conduct of Monetary Policy," January 22, 2013) In other words, the BOJ avoided use of the term "target" because the Japanese people would have misunderstood it to mean something the BOJ committed to achieve no matter what. Now that the Japanese people know better, the BOJ argues, they can safely use the word "target."

[3] Governor Shirakawa resigned on March 19 before his term would have ended on April 8. Some speculated this as a result of the pressure from the government, but it is probably just to allow the new governors to start at the same time as Governor Shirakawa explained himself, as the terms for the two Vice-Governors were ending on March 19.

The monetary base will increase at a pace of ¥60 trillion to ¥70 trillion a year and the amount will double in two years. The amounts of long-term JGB holdings and ETF holdings will also be doubled in two years. The announcement of the policy ends with the following uplifting sentences.

> The quantitative and qualitative monetary easing …… is expected not only to work through such transmission channels like longer-term interest rates and asset prices but also to drastically change the expectations of markets and economic entities. These effects will support the positive movements that have started to appear in economic activity and financial markets, contribute to a further pick-up in inflation expectations that appear to have risen, and lead Japan's economy to overcome deflation that has lasted for nearly 15 years. ("Introduction of the 'Quantitative and Qualitative Monetary Easing'," April 4, 2013)

This is contrasted to announcements and press conferences of the past BOJ governors, which often undermined the expectation channel by stressing that monetary expansion alone cannot end the deflation.

The shift of the monetary policy under Governor Kuroda has completed the implementation of the first arrow of Abenomics so far. The BOJ has not changed the monetary policy stance in any significant way since (as of this writing). **Update on the size of balance sheet.**

On the fiscal policy front, the first move was to increase the government spending. The Abe government quickly put together a supplementary budget for fiscal year 2012 (April 2012 to March 2013) and submitted it to the Diet on January 15, 2013. The supplementary budget, which passed the Diet on February 26, amounted to spending of ¥13.1 trillion. The majority of spending went to public works in the name of reconstruction (after the earthquake, tsunami, and nuclear disaster of 2011) and disaster prevention (¥3.8 trillion) and growth policy (¥3.1 trillion, which includes ¥946 billion of farm and SME subsidies). More than half of the budget (¥7.8 trillion) was financed by issuing government bonds.

The budget for fiscal year 2013, which received final approval on May 15, 2013, was also expansionary. The total spending amounts to ¥92.6 trillion, which is ¥2.3 trillion larger than the budget for fiscal year 2012 (without including the supplementary budget). The amount of new bond issues is ¥42.9 trillion, according to the government, which is slightly below the expected tax revenue (¥43.1 trillion). The government figure, however, does not include the amount of Special Case Bonds for Pensions, which is used to finance the transfer from the central government to the social security account and amounts to ¥2.6 trillion. If we add this to the new borrowing, the Japanese government still expects to borrow more than the tax revenue in fiscal year 2013.

The second arrow of Abenomics is “flexible” fiscal policy, which is supposed to mean expansionary fiscal policy to lift the economy in the short run but reduction of budget deficit in the medium run to be fiscally responsible. The plan for the medium run fiscal consolidation, however, has been slow to be developed. On August 8, 2013, the government finally published the Medium-Term Fiscal Plan, which aims at reducing the budget deficits by a half by fiscal year 2015 (compared to fiscal year 2010) and eliminating the deficits by fiscal year 2020. The government also published “Trial Calculation Concerning the Economy and Public Finance in the Medium to Long Term,” which examines whether the fiscal plan can achieve the goals. The scenarios used for calculations assume the consumption tax rates will be raised from 5% to 8% in April 2014 and then to 10% in October 2015 as planned. If the Japanese real growth rate recovers to average 3.4% per annum between fiscal years 2013 and 2022, the government can achieve the goal of reducing the budget deficits by a half by fiscal year 2015, but cannot eliminate the deficits by fiscal year 2020. The debt to GDP ratio will stop rising and but will not fall. If the economic recovery turns out to be weaker and the economy grows at 1.3% per annum on average between fiscal years 2013 and 2022, the government will miss the goal of halving the budget deficits by 2015 as well. In this case, the government debt to GDP ratio is expected to continue to increase.

The Abe government was a little bit faster in coming up with the growth strategy, which is the third arrow. On June 14, 2013, the Cabinet of Abe government approved a growth strategy titled “Japan Revitalization Strategy: JAPAN is BACK.” The strategy aims at achieving (i) 3% average annual nominal growth, (ii) 2% average annual real growth rate, and (iii) increase of nominal national income per capita by ¥1.5 million in the next 10 years. The major components of the growth strategy are three “action plans” called (1) Industry Revitalization Plan, (2) Strategic Market Creation Plan, and (3) Strategy of Global Outreach. We will look into each action plan more in details below to evaluate the likelihood of success for Abenomics.

3. Why Did Japan Stop Growing?

The stated goal of Abenomics is to overcome deflation. The deflation in this context is not limited to its narrow definition of persistent decline of the price level. It also refers to the general economic stagnation that Japan has experienced for most of the last twenty years. Thus, it takes both aggregate demand policy (the first two arrows) and supply side policy (the third arrow) to overcome deflation.

To examine if Abenomics is likely to succeed in overcoming deflation in this broad sense, we need to understand why Japan entered a long period of stagnation to start with. Drawing from Hoshi and Kashyap (2011 and 2012), this section identifies the major factors that started and prolonged the stagnation of the Japanese economy.

The Japanese economy used to grow very rapidly. From 1955 to 1973, the average real growth rate was over 9% per year. The real growth rate fell below 4% from the mid-1970s to 1990. The growth during the last two decades has been especially dismal. The average real growth rate from 1994 to 2012 was only 0.9%. Japan also suffered from deflation during this period, so the nominal GDP in 2012 was actually 4.1% lower than that in 1994.

Why did Japan stop growing? In part, it was simply a result of convergence. After the World War II, Japan started from the level of economic activity and the state of technology much lower than those of more advanced economies such as the United States. Over time, Japan grew rapidly and substantially closed the gap with the advanced economies. Thus, the growth rate of the Japanese economy had to come down from the extremely high level.

When Japan was still at the catch-up phase of the growth, Japan was able to grow by importing and imitating the technology of more advanced economies. It was relatively easy to see which are likely to be the growing industries by looking at the experiences of the advanced economies. Relatively young and growing population contributed to high growth rate as well. Once the economy started growing rapidly, the young population structure meant high household saving rate, which helped to finance growing capital investment without relying on foreign borrowing. Stable international financial regime with fixed and somewhat undervalued yen also made it possible for Japan to adopt export-led growth strategy.

Around the mid-1970s, all of these favorable conditions for Japan's economic growth started to disappear. The rapid economic growth closed the gap between Japan and the advanced economies, making it difficult for Japan to grow by just imitating the technology abroad or steering more resources to promising industries. Rapid fall in fertility rate and increase in longevity combined with restrictive immigration policy started to make Japan's demographic composition skewed to the old more quickly than the advanced economies. This aging of the population lowered potential growth rate of Japan by reducing the growth of (quality adjusted) labor input. Finally, Bretton Woods system, which supported the fixed (and somewhat undervalued) yen exchange rate, gave way to the floating exchange rate system. This made Japan's export-led growth strategy difficult to continue.

Even without the collapse of Bretton Woods system, Japan's export-led growth strategy would have become ineffective. When an economy is small relative to the rest of the world, it may be possible for the economy to grow rapidly by relying just on external demand. As the economy grows bigger, however, it becomes increasing harder to find the markets for larger exports. In addition to this difficulty, the export-led growth strategy often involves protection of domestic firms from market forces so that they can develop organizational capacity to compete in the international market, as Rajan (2010) points out. This retards development of market forces within the economy, which plays a critical role in reallocating resources from inefficient production arrangements to more efficient production arrangements and in raising productivity in mature economies.

What Japan needed to respond to these challenges was economic structural reform. To continue to grow in the post catch-up phase, Japan needed to move away from the export-led strategy supported by industrial policies and to encourage development of market forces. Industrial policies, in which the government intervenes in the markets and steer resources to promising industries, may have worked during the catch-up phase of Japan's growth. After Japan reached the technological frontier in many areas, it was impossible for the government (or anyone else) to accurately identify the promising industries or products of the near future.

To maintain growth in aging economy, productivity needs to increase. Thus, Japan faced a difficult challenge of increasing productivity growth at the time when the productivity growth became more difficult as Japan's catch-up phase of economic growth came to an end. Since a major part of productivity growth in mature economies is achieved through reallocation of resources from inefficient production units to more efficient production units by market forces, encouraging market forces would have been an effective response for Japan. Other reforms to counteract negative impacts of aging on economic growth include those to increase the participation, especially that of female workers, who were traditionally underutilized in Japan. Relaxing the immigration policy to attract workers from abroad would have been useful, too.

Since the 1980s, the Japanese government often mentioned necessity of economic structural reforms. For example, Maekawa Report, prepared for Nakasone government in 1986, was one of the earliest public documents that called for a shift away from the export-led growth strategy, although the main concern of the report was reduction of Japan's trade surplus rather than economic growth. Many governments that followed talked about structural reforms, but many of them lacked in actions. Even when the reforms are actually tried, most comprehensively under the Hashimoto administration in the mid-1990s and the Koizumi administration in the early 2000s, they were incomplete. To this day, Japan has not succeeded in responding to the fundamental growth challenges that emerged in the mid-1970s.

To make matters worse, the Japanese government often chosen some policies that ended up further reducing Japan's growth rate. Hoshi and Kashyap (2011) identify three such policy mistakes.

First, the government encouraged banks to assist their troubled customers by ever-greening the loans and/or giving interest concessions. In return, banks were allowed to carry those loans on their balance sheet without recognizing the likely losses. Many of those customers are likely to have been "zombie firms," which would have been forced to exit the markets or shrink drastically if the normal market forces had been working. Caballero, Hoshi, and Kashyap (2008) estimate a sharp increase of the prevalence of zombie firms in Japan from the mid-1990s to the early 2000s, especially in non-manufacturing industries. As they have shown, protection of zombie firms ends up hurting productivity growth because it slows down the process of economic restructuring where inefficient production units are replaced by more efficient production units. The zombie problem is costly not only because resources are wasted to support zombie firms but also because the congestion generated by zombie firms discourages more efficient competitors from expanding and new firms from entering the market.

The intention of the policy to protect troubled firms was presumably to help the firms whose profitability was temporarily hurt during the cyclical downturn after the bubble economy in the late 1980s. The policy was successful in limiting the number of corporate failures and job losses, although unemployment rate gradually increased in the 1990s into the early 2000s. A serious unintended consequence, however, was to hurt economic growth by interfering with the process of creative destruction.

Japanese government once again stepped up on the efforts to protect troubled firms after the global recession that followed the global financial crisis of 2007-2009. This time, the focus was on the protection of small and medium enterprises (SME). The SME Financing Smoothing Act of 2009 strongly encouraged banks to restructure the loans to troubled SME customers when they apply for such restructuring. The banks were allowed to classify the loans that were restructured following this law as normal loans (rather than troubled debt restructuring) to avoid accumulating loan loss reserves, as long as those firms planned to come up with restructuring plans. Although the law expired at the end of March 2013 (after a couple of extensions), Japan's Financial Services Agency (FSA), the bank regulator, still encourages the banks to continue assisting those firms by giving extra credit for those efforts during their bank examinations.[4]

Second, the Japanese government continued many regulations that end up limiting new entrants or increasing costs of introducing new products and services. Some regulations are necessary to ensure safety and soundness of business or products, but some regulations are legacy of industrial policies that would be removed by a serious structural reform. There were occasional attempts to lift those regulations. The Hashimoto administration in the late 1990s was the first government that called for a comprehensive effort to advance deregulation. Hashimoto government indeed removed many regulations, but the process soon slowed down. Examining the indices of licensing and approval regulations compiled by the Cabinet Office (2006), Hoshi and Kashyap (2011) find that the speed of deregulation slowed down especially for non-manufacturing industries.

Government regulation, such as entry restrictions, can have a effect similar to allowing zombies to survive. By protecting incumbent firms, the regulation discourages entries of new firms that are often more efficient, and end up harming the productivity growth. Moreover, heavy regulation can make it easier for the government to protect zombies. It is not a coincident that protection of zombies in Japan was tasked to the banking industry, which is one of the most heavily regulated industries.

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[4] "Japanese Banks Urged to Lend in Fight against Deflation," *Wall Street Journal (Japan Real Time)*, May 2, 2013. (http://blogs.wsj.com/japanrealtime/2013/05/02/japanese-banks-urged-to-lend-in-fight-against-deflation/)

The third area of the policy mistakes in Japan is macroeconomic policy. As we saw above, the Bank of Japan was often reluctant to expand monetary policy. The monetary policy was expansionary in the traditional sense, because the BOJ reduced the target interest rate eventually to zero in the 1990s and kept it at zero during the most of the last 20 years. The BOJ, however, was hesitant to go beyond that by expanding the balance sheet of the central bank as fast as the other major central banks did after the global financial crisis. In this way, the BOJ allowed the deflation (in the narrow sense of persistent decline in the price level) to continue. Without structural reform, more expansionary monetary policy would not have fully restored the economic growth, but the reluctance of the BOJ to expand slowed down the recovery of aggregate demand and failed to produce economic conditions more conducive to structural reform.

Fiscal policy was better in stimulating the aggregate demand. With a notable exception of fiscal policy mistake in 1997, the fiscal policy was often expansionary. In 1997, the government phased out income tax cut, increased the consumption tax rate, and raised the premium for national health insurance at the same time, and the economy went back into recession. Even this mistake is somewhat understandable given the circumstances. The economy in 1996 showed a clear sign of recovery. The real growth rate for fiscal year 1996 was estimated to be 2.5%, and even with the impact of fiscal tightening, the growth rate for fiscal year 1997 was forecasted to be 1.9% (Ministry of Finance Policy Research Institute 1997). It must have seemed to be a good opportunity to start reducing the budget deficit, which was as large as 7.3% of GDP, and slow down the accumulation of government debt, which was approaching 50% of GDP. With hindsight, it was a mistake, but the policy decision did not look reckless *ex ante*.

More serious problem of fiscal policy was that the spending was allocated to the areas that did not contribute to enhance the growth capacity of the economy. For example, Hoshi and Kashyap (2011) examine the allocation of public works spending, which explained the majority of government expenditure increase in the 1990s. They find that close to 90% of the public works spending went to the areas such as roads, airports, and agriculture-related public capital, whose productivities already declined to very low levels by the beginning of the 1990s according to the estimates by Doi and Ihori (2009).

In the 2000s, the proportion of public works declined, and the social security related expenditures (such as pension benefits and medical expenditures) became the fastest growing expenditure category. Since the social security related expenditures are essentially income transfers, they are not growth enhancing, either. More growth friendly way of government spending during this period would have been to finance policies to support the reallocation of labor that would result from economic restructuring. That would have reduced the need to rely on zombie firms to protect employment.

Fiscal policy in Japan in the last two decades failed to enhance the growth potential. It may have helped stimulating the demand, but it led to an enormous increase in the government debt. The (gross) debt to GDP ratio now exceeds 230% and the budget deficit is around 9% of GDP. The situation is much more serious than the one in 1996. Many recent research papers conclude that the current fiscal situation in Japan is not sustainable. For example, Doi, Hoshi, and Okimoto (2011) find that a large tax increase and/or spending cut are necessary to stabilize the debt to GDP ratio. They estimate an immediate and permanent increase of the tax revenue by about 9% of GDP would stabilize the debt to GDP ratio. To achieve that just by increasing consumption tax rate hike, the tax rate would have to rise from the current 5% to 23% even if we ignore the impact of tax rate hike on the tax base. Hoshi and Ito (2013) argue that the expectation in the financial market that the Japanese government would make a drastic move to stabilize the debt (increasing taxes and/or cutting expenditures) has allowed Japan to accumulate the debt with very low interest rates. They warn, however, the expectation can change quickly and it is important for the Japanese government to put together a credible fiscal consolidation plan.

In summary, Japan's stagnation was a result of the failure to respond to several growth challenges that started to emerge when the catch-up phase of growth ended. The problem was then exacerbated by policy failures during the last two decades. Can Abenomics correct the past trend and restore the economic growth for Japan? Let us take up this question in the next three sections, each of which focuses on one of the three "arrows" of Abenomics.

4. Will Quantitative and Qualitative Easing Work?

Under QQE, the Bank of Japan plans to increase the monetary base to ¥270 trillion by the end of 2014. This is ¥132 trillion more than the level at the end of 2012 and ¥182 trillion more than the level of January 2007. Even if we assume the money multiplier is one, this increase in the monetary base will increase the size of the BOJ balance sheet to 259% of the level of January 2007. The level is comparable to the level the Federal Reserve and the BOE reached during the initial stage of their Quantitative Easing in the late 2000s.

On the assets side, the BOJ plans to increase the BOJ holding to ¥190 trillion by the end of 2014. This is ¥101 trillion more than the end of 2012 and ¥138 trillion more than the January 2007 level. Together with increases of ETF and J-REIT holdings, this will increase the size of the BOJ balance sheet to 224% of the level of January 2007.

Thus, QQE of the BOJ will expand its balance sheet at the speed comparable to the QE conducted by the Federal Reserve and the BOE. Whether the QE in the U.S. and in the U.K. have succeeded in stimulating the economies is still debated. Both countries, however, have successfully avoided deflation. There are also evidences that the QE contributed at least to the reduction of the long-term interest rate. For example, Christensen and Rudebusch (2012) find the QE in the U.S. and the U.K. contributed to declines of the government bond yields, although they point out the mechanisms were different between two countries.

For Japan's QQE, the policy seems to have been successful in increasing inflation expectation in the financial market. As Bank of Japan (2013b, Chart 28) shows, the break even inflation rate calculated from inflation-indexed JGB yields has increased from below 1% to above 1% and came close to 2% at one point. The market participants and economists have also revised their inflation expectations upward. The same chart also shows many consumers adjusted their inflation expectations upward following the start of Abenomics.

As Mandel and Barnes (2013) point out, a potential problem of using the break even inflation rate for inflation-indexed JGBs is that the market is thin and the price may not be reliable. Mandel and Barnes (2013) propose another way to calculate the inflation expectation for Japan using the break even inflation rate for the U.S., which has a thick market for inflation-indexed government securities, and yen-dollar swap rates, assuming the purchasing power parity. Their measures also show that the inflation expectation climbed after the Abenomics was introduced.

Actual inflation rate also seems to be rising. Figure 4 shows the inflation rates for (1) general CPI, (2) CPI excluding fresh food, and (3) CPI excluding food (other than alcoholic beverage) and energy. The second definition of the inflation rate (excluding fresh food) is called "core inflation" in Japan and it is what the BOJ targets. The last definition (excluding food and energy) is comparable to the core inflation rate in the U.S. and it is called "core-core inflation") in Japan. Figure 4 shows that all of these inflation rates bottomed out around March of 2013.

The inflation expectation, however, has not shown up in wage increases, yet. Figure 5 shows the annual growth of employee earnings (excluding bonuses and overtime pays). The wage continued to decline even after Abenomics and has not shown any sign of recovery. The *shunto* in 2013, where major Japanese companies negotiate labor contracts with their labor unions every spring, did not show any effects of rising inflation expectations. The average increase of contracted wages was 1.80%, which was not much different from 2012 result (1.78%) or 2011 (1.83%).[5]

Thus, Abenomics's first arrow seems to be moving in the right direction. At least in the financial market, the inflation expectation has been increasing. The actual inflation rate also seems to have started to rise. These signs make the prospect of achieving 2% inflation rate by the end of 2014 promising. The higher inflation expectation, however, has not shown up in the wage determination.

[5] Ministry of Health, Labor, and Welfare, "Heisei 25 nen Minkan Shuyō Kigyō Shunki Chinage Yōkyū Daketsu Jokyō (The status of major private companies' demands for wage increase and settlement in Spring 2013)" (in Japanese) (http://www.mhlw.go.jp/stf/houdou/0000013192.html)

5. Is Flexible Fiscal Policy (a part of) the Answer?

The second arrow of Abenomics is called flexible fiscal policy that is supposed to combine short-term fiscal stimulus with medium-term fiscal consolidation. As we saw above, the government was quick to implement the short-term stimulus part, but started formulating the fiscal consolidation plan only recently.

Expansionary fiscal policy can be a useful tool in a recession. It is especially useful when the effectiveness of monetary policy is constrained by the zero bound for nominal interest rate. In Japan, however, fiscal stimulus was already applied repeatedly during the last two decades. Unlike Europe today, fiscal austerity was not a major problem in Japan.

On the contrary, a major risk for the Japanese economy comes from the large government debt, which resulted from the expansionary fiscal policies. As mentioned in Section 3, many recent research papers conclude that Japan's fiscal situation is unsustainable. The tax revenue needs to be increased and/or the government spending needs to be cut. Very high inflation may help reducing the real value of the outstanding government debt. As Doi, Hoshi, and Okimoto (2011) show, however, the majority of Japan's fiscal problem comes from the future expected deficits, which cannot be wiped away even by very high inflation.

Financial market so far has allowed Japan to accumulate public debt without demanding high interest rate because it expects the Japanese government to consolidate the budget before it is too late, as Hoshi and Ito (2013) argue. Then, increasing government spending without a credible plan of fiscal consolidation in the medium-term can be interpreted by the market as a signal that the government does not really plan to reduce the budget deficit in time. Thus, starting the second arrow of Abenomics with just fiscal stimulus and without clear commitment to fiscal consolidation runs the risk of causing the government bond yields to jump suddenly.

Fortunately Japan has dodged the problem so far. Figure 6 shows the movement of 10-year JGB yield. It showed a jump in May, but subsequently came down to very low level.

On August 8, 2013, the Medium-Term Fiscal Plan was finally disclosed, but the size of fiscal consolidation in the plan is not sufficient to stabilize the government debt. Even the simulation done by the government shows that the goal of eliminating budget deficit by fiscal year 2020 cannot be achieved even when the economy grows at 2.1% (real term) on average between 2013 and 2022.

At the same time, the government is reconsidering the timings of consumption tax rate hikes that are scheduled to take place on April 1, 2014 (5% to 8%) and October 1, 2015 (8% to 10%). Prime Minister Abe has been reported to be growing sympathetic to the idea of increasing the consumption tax rate more gradually or delaying the hikes, so that the mistake of 1997 is not repeated. The experience of 1997 suggests that the economy can respond to a consumption tax hike more negatively than expected. Delaying or slowing down consumption tax hikes, however, increases the risk that the market interest rates for government debt jumps, which may force the Japan's government to make immediate actions to reduce the deficits. **Update**

An additional problem of a potential increase in the market interest rate is the effect on the banking sector. Japanese banks hold a large amount of JGBs on their balance sheet, and a small increase in the interest rate would reduce the market value of bank assets substantially. As of the end of March 2012, Japanese banks held about ¥180 trillion of government bonds (including local government bonds). This amount was 21% of the total assets and 4.6 times of the bank capital. Bank of Japan (2013a) reports the average remaining maturity (which should be very close to duration under the low interest rate environment) of bond holdings (including some non-government bonds) as of the end of December 2012 was 2.5 years for major banks and 4 years for regional banks. If we assume the duration for the government bonds for the banking sector is 3 years, 2% increase in the interest rate will generate the loss of ¥10.8 trillion, which is 28% of the bank capital.

So far Abenomics has not caused a sudden jump of the government bond yields, but the risk exists until the government comes up with a credible plan for fiscal consolidation. The Medium-Term Fiscal Plan of August 2013 is not sufficient. In this sense, the second arrow of Abenomics is still incomplete.

In order for the second arrow of Abenomics to restore the economic growth, stimulating the demand without causing the government bond yields to jump would be still insufficient. The content of the government spending has to be growth enhancing. As we saw in Section 3, the majority of public spending in the past was used in the ways that are not likely to increase the growth capacity. This was also the case for the supplementary budget for fiscal year 2012, which represented the first installment of the second arrow; the majority of spending used for public works and subsidizing farms and SMEs. In order to promote growth, the spending part of the second arrow must be tied to a well-designed growth strategy, which is the third arrow of Abenomics.

6. Will the Growth Strategy be Successful?

As discussed in Section 3, Japan's economic stagnation is not just a cyclical downturn that followed the global financial crisis, Japan's own banking crisis in the 1990s, or the collapse of speculative bubbles. There have been structural problems at the roots of the stagnation, and those structural impediments must be removed in order for Japan to regain the growth. Thus, the third arrow of Abenomics becomes important. Even if the first and the second arrows succeed in stimulating the aggregate demand and stopping deflation in the narrow sense, the sustained economic growth would not be achieved without structural reforms.

Japan Revitalization Strategy of June 2013 describes the third arrow of Abenomics.[6] The strategy aims at (i) 3% average annual nominal growth, (ii) 2% average annual real growth rate, and (iii) increase of nominal national income per capita by ¥1.5 million in the next 10 years. There are four basic approaches that tie together various policies included in the strategy, according to the document. First, the strategy tries to rely on private sector initiatives. Thus, the emphasis is put on economic restructuring and encouraging venture firms. The strategy also includes deregulation to allow private entities to enter the areas that were traditionally limited to public entities (such as healthcare, nursing, and childcare). Second, the strategy seeks wider participation of Japanese population. Thus, various policies try to improve the support for women with children so that they can work. Some policy reforms aim at creating more opportunities for the young as well as the old. The strategy also includes measures to make the Japanese young internationally competitive. Third, the strategy attempts to create new frontier. A major stated objective here is to revive high technology industries in Japan. The policies in the strategy also assist international expansion of Japanese firms and promote foreign direct investment (FDI) into Japan. Finally, the strategy pursues the growth that benefits all the people. Some policies try to accomplish fair distribution of benefits of economic growth among diverse people and regions.

The document claims that the strategy will be implemented with “unprecedented” speed. A key tool to implement the strategy is the framework of National Strategic Special Zones, which “serve as a gateway for the execution of bold regulatory reform and other measures.” The National Strategic Special Zones are supposed to be different from special zones that were established in the past, most notably under Koizumi government.

> Under the system of National Strategic Special Zones, the Government, municipalities, and the private sector will work as one rather than in conflict with each other. The system will be applied only to projects which have a big enough impact to attract foreign investment and will be implemented in a timely manner. This is an impact which could not be expected from the special zones that have been established to date. (“Japan Revitalization Strategy: JAPAN IS BACK,” pp.10-11)

The growth strategy also introduces targets and Key Performance Indicators (KPI) for many reforms and stresses the importance of PDCA (Plan-Do-Check-Act) cycle.

The Japan Revitalization Strategy consists of three “action plans”: 1. Industry Revitalization Plan, 2.Strategic Market Creation Plan, and 3. Strategy of Global Outreach. Each action plan consists of several programs (or themes in Strategic Market Creation Plan), and each program include several reform areas. Finally, each reform area includes several reform policies at lower level. Tables 1 to 3 show the programs and their reform areas that are included in each action plan. Some of the reform areas show selected reform policies that are in each area.

[6] English version of the strategy document is found at http://www.kantei.go.jp/jp/singi/keizaisaisei/pdf/en_saikou_jpn_hon.pdf.

One immediately notices that the action plans cover many reform areas. There are 13 reform programs and 52 unique reform areas. If we count the number of individual reform policies, we can count no less than 170 unique policies.

Given the large number of reform ideas, it is easy to find some promising ones that are likely to have direct positive impacts on Japan's growth capacity. For example, encouraging corporate restructuring and increasing new entries and exits (in a. Emergency Structural Reform Program in Industry Revitalization Plan) are good ideas. The Japanese growth suffered from protection of zombie firms that slowed down economic restructuring. Any reform to encourage economic restructuring would lead to higher economic growth by increasing the growth rate of total factor productivity (TFP), because a significant part of TFP growth in a mature economy comes from economic restructuring.

Moving away from the policy of employment stability to labor fluidity (in b. employment system reform) would also increase economic restructuring and increase TFP growth. Similarly establishing a system "which enables challenges to frontiers being free from anxiety" (in a. Emergency Structural Reform Program) would also increase TFP growth by encouraging innovation. Promotion of advancement of women in the job market, promotion of employment of the young and the old, and more use of high skilled foreign workers are all good ideas to counter the negative impact of aging on labor supply and restore the growth. Deregulation of IT industries, improving communication infrastructure, and promoting cyber-security (in d. creation of the world's leading IT society) can stimulate the capital investment in the private sector and contribute to the growth.

There are, however, many ideas that may enhance the growth only indirectly or are not likely to contribute to the economic growth. For example, developing human capital capable of operating globally (in b. employment system reform and m. improve infrastructure concerning funds and human resources to support economic growth in Strategy of Global Outreach) is probably a good thing and may contribute to growth indirectly, but it will take a long time to observe any visible impacts.

Worse, Strategic Market Creation Plan is mostly an old-fashioned industrial policy where the government tries to help promising industries to develop in Japan. As we discussed in Section 3, such industrial policy may have worked during the catch-up phase of the Japanese economy, when it was relatively easy for the government to identify promising industries in the future. Now that Japan has finished the catch-up phase, nobody can be sure which industry to promote.

Strategy of Global Outreach includes reforms to open up Japan to the rest of the world such as promotion of free trade areas. Such a reform will allow more Japanese companies to face global competition, which gives them more incentive to increase productivity and eventually increases the economic growth by raising TFP growth. Strategy of Global Outreach, however, also includes pure export promotion through industrial policies. Such a policy is more likely to end up just distorting the resource allocation across industries with little contribution to overall economic growth. For example, successful export promotion of Japanese alcoholic beverages (in promotion of Cool Japan) may concentrate more resources (physical capital and human capital) to *shōchū* companies, but the impact on the economy wide growth would be minimal.

There are some reform areas that sound promising but the individual policies listed in those areas are not likely to achieve the goals. For example, increasing entries and exits of SMEs (in f. SME reform in Industry Revitalization Plan) sounds growth enhancing, but the policies listed include only subsidies and other support for SMEs to enter new markets. Policies to increase exits of failing firms are not discussed at all.

Perhaps the most important problem of Abe's growth strategy is the lack of focus. There are too many reform areas and proposed policies. Implementing an economic reform takes political capital because the government would face resistance from the people who benefit from the current institution (and hence would lose the benefits if the reform was carried out). It would be politically difficult to implement reforms in all 52 areas. Trying to win the supports for all the reform areas would run the risk of failing in most areas. Focusing on several priority areas that are directly useful for economic growth would increase the probability of success of the third arrow.

6. Conclusion

The paper has reviewed Prime Minister Abe's economic policy called Abenomics, and examined whether the policy is likely to succeed for each of the three "arrows." The first arrow (monetary policy) seems to be flying toward the target. The BOJ expanded the monetary policy substantially and the inflation expectation (at least in the financial market) seems to be rising. The direction of the second arrow (fiscal policy) is not entirely clear. The fiscal stimulus part has been implemented, but the government does not yet have a credible plan for budget consolidation. The Medium-Term Fiscal Plan of August 2013 is not enough to eliminate the budget deficits in the medium term, as the government's own calculation shows.

Even if both the first and the second arrows hit the target and the deflation in the narrow sense ends, Japan may not be able to restore the growth. The key will be the third arrow (growth strategy). Japan Revitalization Strategy disclosed in June 2013 includes some promising ideas but it also includes some ideas that would not contribute to growth or outright counter-productive ideas. The most serious concern is its lack of focus. In order for Abenomics to truly succeed in restoring growth, the government will have to come up with more focused version of the growth strategy.

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Table 1. Industry Revitalization Plan

a. Emergency Structural Reform Program (to encourage economic restructuring)
   1.Stimulate business investment
   2.Establish a system which enables challenges to frontiers being free from anxiety
   3.Increase new entry and exit of firms to 10% (from the current 5%)
   4.Encourage corporate restructuring
   5.Encourage globalization of Japanese companies
b. Employment system reform
   6.Shift from policy of employment stability to labor fluidity
   7.Use private sector employment/recruitment agencies
   8.Diversification of employment contracts
   9.Promote advancement of women in the job market
   10. Promote employment of the young and the old
   11. University reforms
   12. Strengthen development of human capital capable of operating globally
   13. More use of high skilled foreign workers
c. Promotion of scientific and technological innovation
   14. Strengthen the Council for Science and Technology Policy's functions as headquarter
   15. Establish the Strategic Innovation Program
   16. Innovative Research and Development Support Program
   17. Enhance function of national research institutes
   18. Funding of research support stuff at research institutes
   19. Public-Private Joint Research and Development
   20. Improve intellectual property and standardization strategies
d. Creation of the world's leading IT society
   21. Deregulation in IT industries
   22. Allow private sector to use public databases; Online public administrative services
   23. Government projects to use IT to achieve safety and convenience
   24. Develop the world's top-level communication infrastructure
   25. Promote cyber-security measures
   26. Develop human capital with IT skills
e. Improve Japan's international competitiveness as a business hub
   27. Establish National Strategy Special Zones
   28. Utilize Public Private Partnership and Private Finance Initiative
   29. Invest in industrial infrastructure such as airports and harbors
   30. Improve the competitiveness of cities
   31. Invigorate financial and capital markets
   32. Reform on public pension funds management
   33. New energy policy; reformulate environmental policy
f. Small and Medium Enterprises Reform
   34. Network and brand strategies for under-utilized resources in regional economies
   35. Increase entries and exits of small and medium enterprises
   36. Support for SMEs that enter the growth markets
   37. Support for SMEs that expand internationally

Table 2. Strategic Market Creation Plan

g. Lengthen the nation's healthy life expectancy (target healthcare services, elderly care, pharmaceutical, medical equipment, senior housing industries): (the market size and employment goals for 2020 and 2030 are specified)
    38. Enhance effective preventive care services and health management (Policies include promotion of digitization of medical and nursing care information, online distribution of non-prescription drugs, introduction of an identification number system)
    39. Promote medicine-related industries (Policies include establishment of a Japanese version of the NIH, acceleration of assessment procedures for advanced medical treatment, promotion of global deployment of Japanese medical technologies and services)
    40. Establish access to better medical care and nursing care (Policies include enhancing provisions of lifestyle services and housing to the elderly, building communities where people live and work in waling distances, development of nursing care robots)
h. Realize clean and economical energy demand and supply (reproducible energy, high efficiency generators, battery, next generation device/material, energy management system, next generation cars, energy saving home appliances, energy saving housing: (the market size and employment goals for 2020 and 2030 are specified)
    41. Promote supply of clean and economical energy (Policies include regulatory reform to introduce renewable energy, promotion of offshore floating wind power generation, development of maritime resources such as methane hydrate)
    42. Support efficient distribution of energy through competition (Policies include Electricity System Reform, technology development and international standardization for storage batteries, commercialization of next generation devices)
    43. Promote wise consumption of energy (Policies include expansion of Smart Communities and establishment of energy management industry, introduction of energy-saving standards for housing and buildings, support for next generation automobiles)
i. Build safe, convenient and economical next-generation infrastructure (infrastructure management, safe driving support system, space infrastructure): (the market size and employment goals for 2020 and 2030 are specified)
    44. Provide safe and resilient infrastructure at low cost (Policies include formulating basic plan for longer life of infrastructures, constructing IT-based inspection and diagnosis systems for infrastructures, development of new materials)
    45. Build safe and comfortable transportation system for people and goods (Policies include development of driving safety support and self-driving system, creation of traffic information system using big data, improving distribution system)
j. Build regional communities that use their unique local resources to appeal to the world (agriculture and tourism): (the market size and employment goals for 2020 and 2030 are specified)
    46. Promote production of world's best quality agricultural, forestry and fishery products and food produce (Policies include development of "AFFrinnovation (the sixth industry)," export promotion of Japanese agricultural, forestry, and fishery products, consolidation of farmland to motivated entities)
    47. Use each region's potential to invite many tourists from the rest of the world (Policies include relaxation of visa requirements for tourists, Visit Japan Promotion, inviting large scale international events)

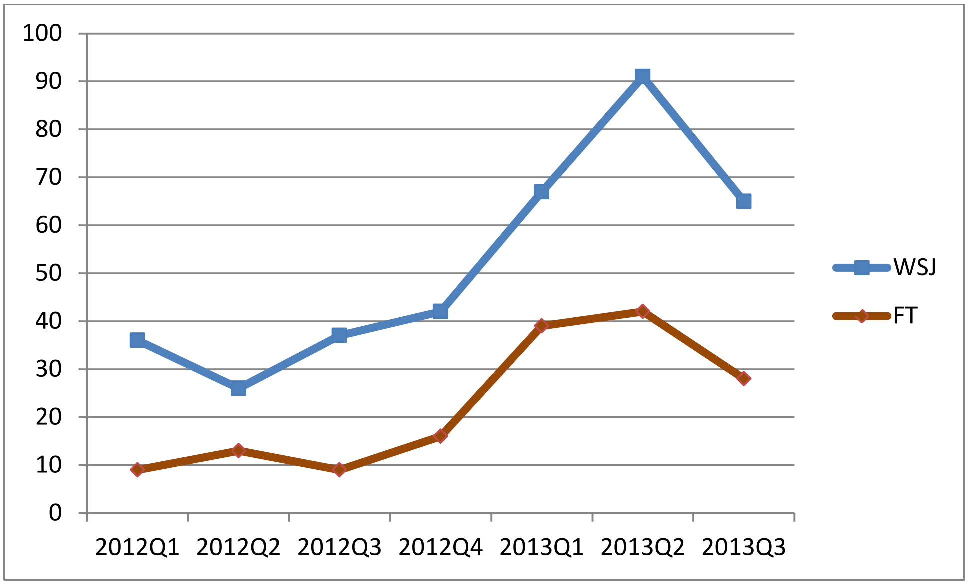
Table 3. Strategy of Global Outreach

k. Build strategic trading relations and promote economic partnership (TPP and FTA)
    48. Promote economic partnerships such as TPP and FTAs (Policies include economic partnership negotiations that benefit Japan, reform of investment agreements and tax treaties, accepting more foreign nurses and care workers)

l. Strategic initiatives for obtaining overseas markets
    49. Export infrastructure and secure natural resources (Policies include sales pitch by Prime Minister and other government leaders, strategic implementation of ODAs, support for Japanese companies' overseas advancement in new areas)
    50. Support potentially international SMEs (Policies include establishment of "one stop overseas consultation offices," government-assisted program to send Japanese employees to overseas as an advance team, dispatch of senior government officials with international skills to SMEs)
    51. Promote Cool Japan (Policies include government-led information dissemination by Cool Japan Promotion Council, establishment of Japan Brand Fund, promotion of exports of Japanese alcoholic beverages)

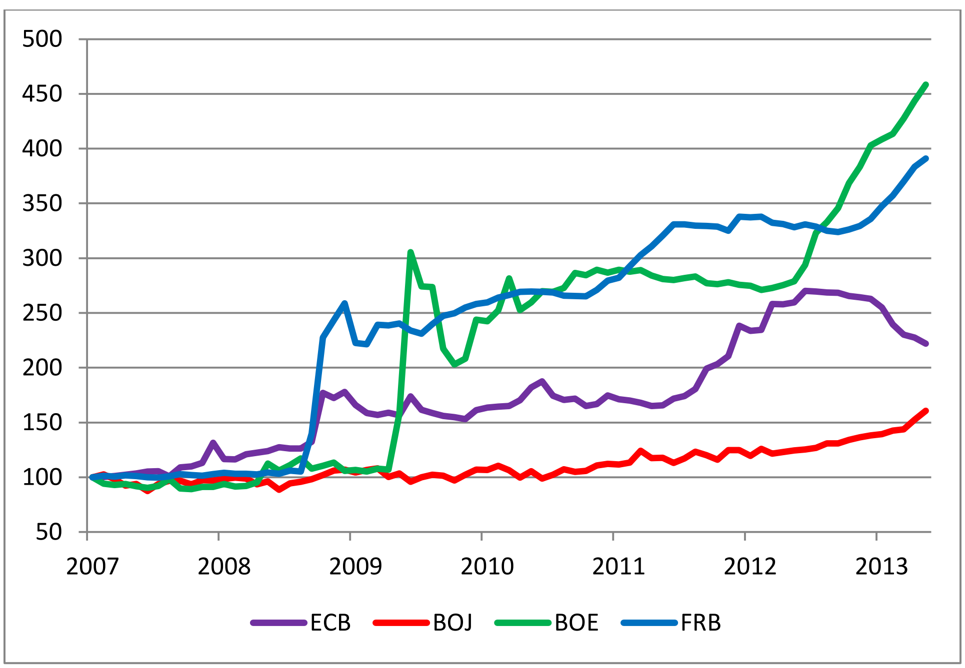
m. Improve infrastructure concerning funds and human resources to support economic growth
    52. Promote inward FDI
    53. Strengthen development of human capital capable of operating globally (Same as 12)

Figure 1. Number of articles that include "Japanese economy" on wsj.com and ft.com



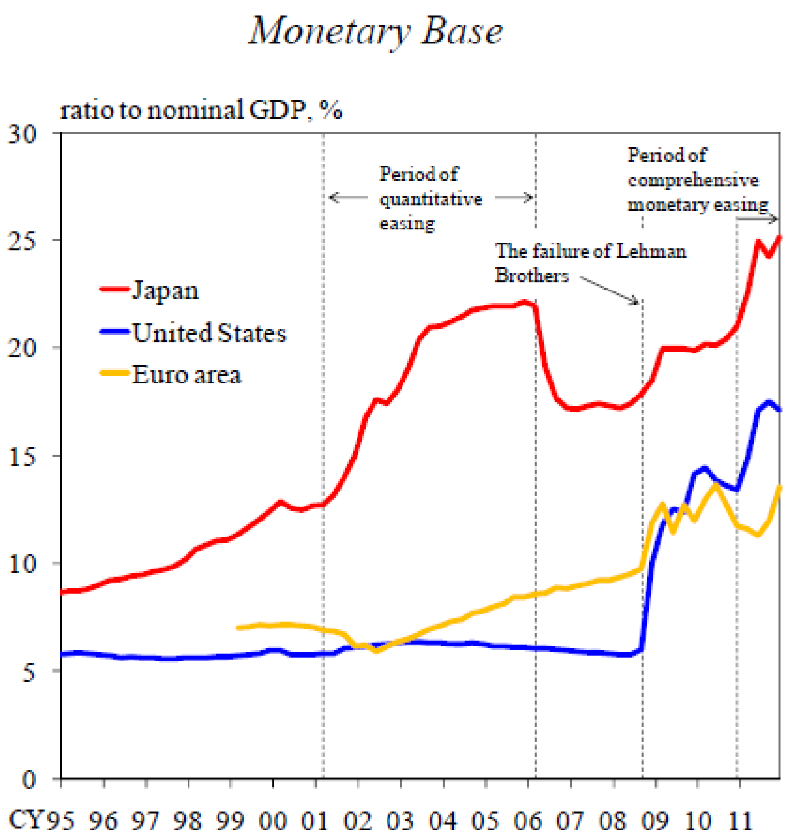
Source: www.wsj.com and www.ft.com. Author's calculation.

Figure 2. Central Bank Assets (January 2007 = 100)



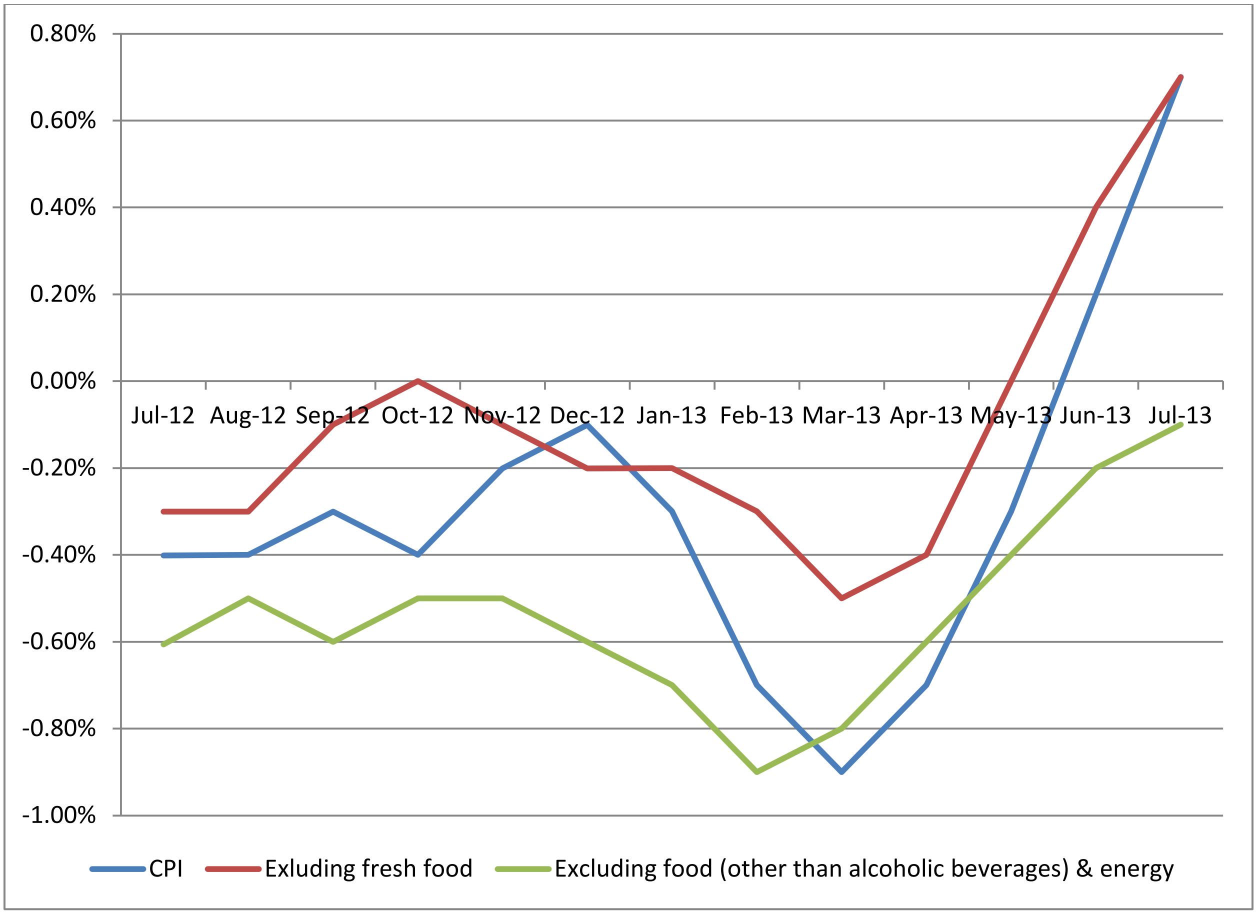
Source: Federal Reserve Bank of St. Louis (http://research.stlouisfed.org/fred2). Author's calculation.

Figure 3. Monetary Base in ratio to Nominal GDP



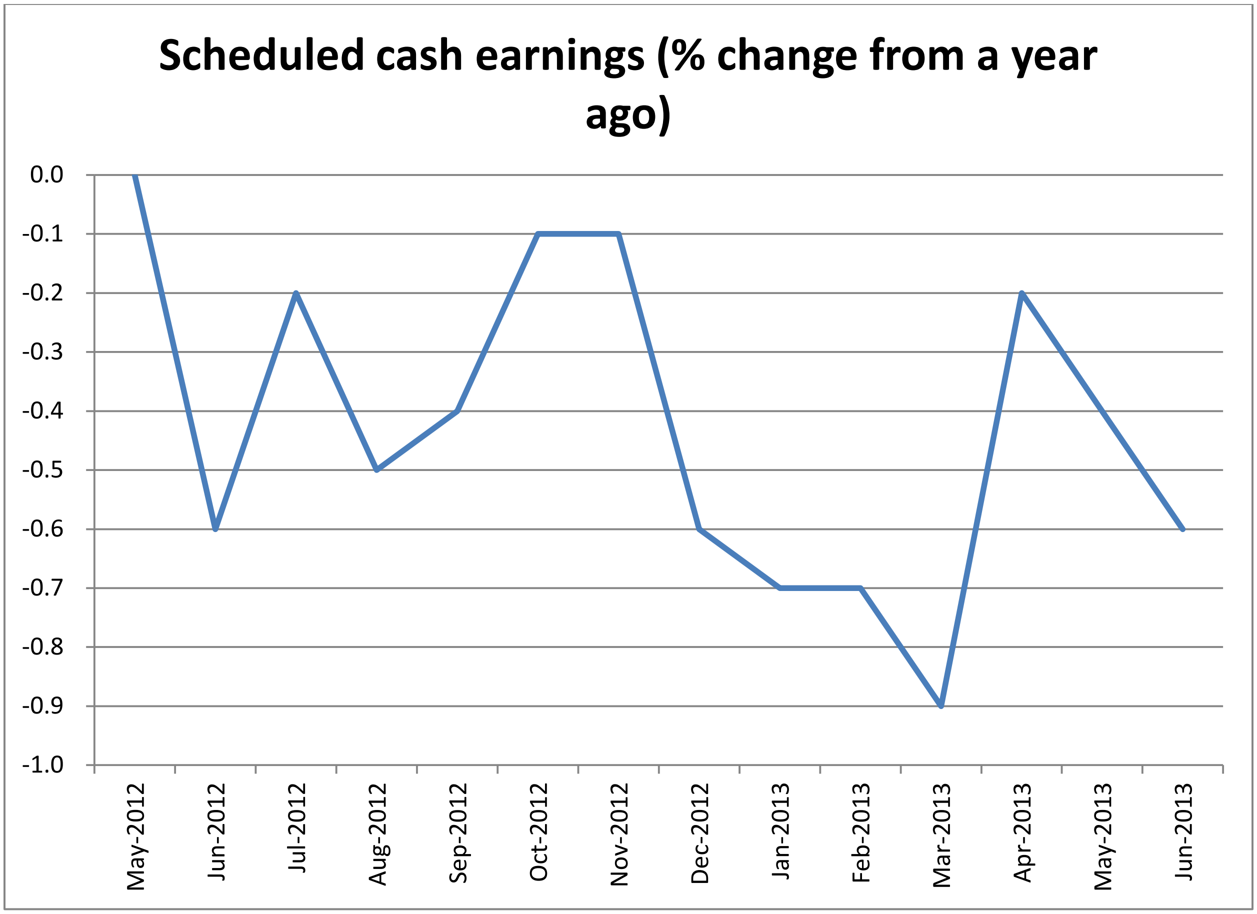
Source: Shirakawa (2010)

Figure 4. CPI Inflation: July 2012 – July 2013



Source: Statistics Bureau, Ministry of Internal Affairs and Communication (http://www.stat.go.jp/data/cpi/index.htm).

Figure 5. Wage Inflation in Japan: May 2012 – June 2013



Source: Ministry of Health, Labor, and Welfare, *Monthly Labor Survey*.

Figure 6. JGB Yield: July 2012 to August 2013

Source: Ministry of Finance (http://www.mof.go.jp/jgbs/reference/interest_rate)