

## **Did Abenomics' Two Arrows Hit the Bulls?**

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### **Abstract**

Over the past two decades, Japan has been perplexed by a series of problems, like ageing population, deflation, huge public debt and sluggish growth. Shortly after taking his office as the Prime Minister of Japan in December 2012, Shinzo Abe has implemented a package of expansionary economic policies, known as “Abenomics,” to revive the economy. By focusing on the first two “arrows” – aggressive monetary policy and flexible fiscal policy – this paper attempts to evaluate their performance over the past two years. It was found that although the Bank of Japan (BOJ) has successfully made the yen depreciated by around 30 percent and maintained a low interest rate environment, most of the targets are still to be met, and there are full of challenges lying ahead.

**JEL classification numbers:** E32, E52, E62

**Keywords:** Abenomics, Quantitative easing, Qualitative easing, Monetary policy, Fiscal policy

### **1 Introduction**

After winning the parliamentary election in December 2012, Shinzo Abe, then President of the Liberal Democratic Party, became the Prime Minister of Japan again after a three-year hiatus. In order to boost the public confidence and stimulate economic growth of Japan, Abe has advocated and implemented a comprehensive economic policy strategy, dubbed “Abenomics,” in early January 2013. There are three components, known as “arrows” of Abenomics: hyper-easy monetary policy, flexible fiscal policy, and structural reforms.

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There are a few recent studies on the efficacy of Abenomics' different policies. For monetary policy, event studies would be commonly adopted.<sup>2</sup> For fiscal policy, on the other hand, a "descriptive" approach might seem more appropriate. This paper, similar to Hugh (2014) [2], would rather use the latter approach to examine Abenomics' performance. But there are some key differences with this paper: (i) there is literature review, (ii) being focused on the first two arrows (because the third one covers too many deep-rooted structural problems, of which there are no clear benchmarks to assess), (iii) time-series graphical illustrations are laid so that trends can be easily spotted, and lastly (iv) more updated data and information (up to 15 December 2014) are used. The remainder of this paper is organized like this: Section 2 introduces the economic backdrop for Abe administration; section 3 shows the main details of the two arrows and their aims; section 4 evaluates whether the targets have been met (and how) or not; and section 5 summarizes our evaluations and concludes.

## 2 Economic Background

Japan's real GDP had been growing at an impressive average annual rate of about 4.6% in the 1980s. Since early 1990s, the stock market (as measured by Nikkei 225 Index) has plummeted by more than half within three years. The commercial property market (as measured by the Urban Land Price Index) has also dropped by nearly 50 percent within ten years. The country has entered into a prolonged period of economic stagnation, with the term "lost decade" generally referring to that ten-year span. Although there have been some signs of economic recovery in mid-2000s, Japan is still facing the aftermath of the previous recession and the two indices just continued to trend downwards over the period between 2001 and 2010. Because of that, some would call it "another lost decade."

The situation was precipitated by the credit crisis in the US in late 2007. In 2008, the Federal Open Market Committee (FOMC) of the US has launched its "Quantitative Easing (QE)" and "Operation Twist (OT)" programs to inject more liquidity into the markets and lower (long-term) interest rates. The Japanese yen has appreciated by 40 percent in three and a half years. Worse still, the tsunami and Fukushima accident in March 2011 have dragged down Japan's nominal GDP growth rate from 2.39 percent in 2010 to -2.3 percent in 2011. With almost all the nuclear reactors closed, most of the electricity has to be generated from imported coal, fossil fuel or liquefied natural gas (LNG).

Over the past two decades, Japan has been perplexed by the following four acute problems:

### 2.1 Ageing Population (MIC (2014)[3])

Like many other advanced economies, Japan has to face such problems like ageing population, long life expectancy and low birth rate. In 2012, its total population was 127.5

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<sup>2</sup>Joyce et al. (2012)[1] has mentioned one major shortcoming of using event study: "*One of the crucial issues in conducting event studies is the choice of the window size used to measure the reaction of financial prices. Too short, and there is a risk that the full market reaction will be missed; too long, and there is a risk that other factors may be driving the observed response.*"

million. Figure 1 shows Japan's population composition by age groups between 1980 and 2010, where you can see that its population is ageing rapidly. In 1980, only 9.1 percent belonged to the age group of 65 and above. The percentage has more than doubled by 2010, standing at 22.8 percent. Life expectancy is currently around 83 years, one of the longest in the world. Starting from early 1990s, birth rate has fallen to below 10 percent and has been surpassed by rising death rate since mid-2000s. If the problem was not contained, by projection, total population would drop to 97.1 million, with the age group of 65 and above accounting for 38.8 percent in 2050, placing heavy burden on the health care system and the workforce.

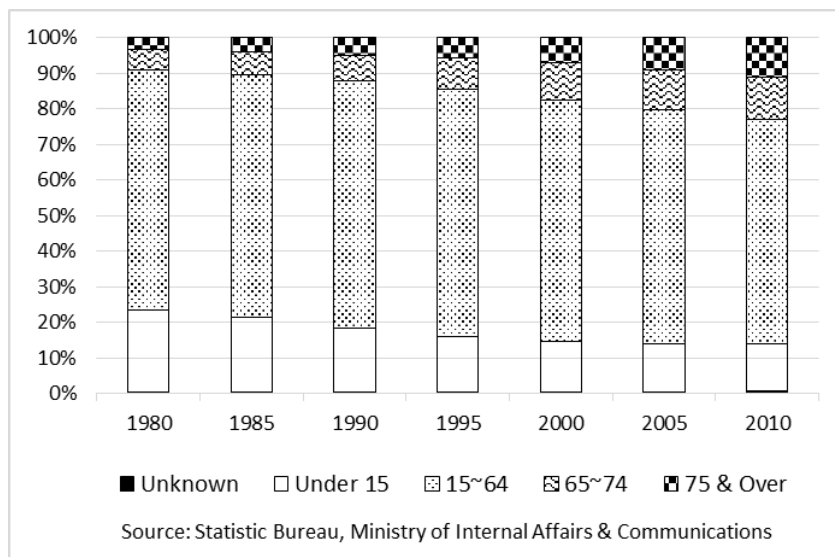


Figure 1: Population by age in Japan (1980-2010)

## 2.2 Deflation

As demonstrated in Figure 2, there had been persistent deflation, with an average rate of 0.23 percent per year, for the past 13 years (1999-2012). Mild deflation, or even zero inflation, is harmful to the economy for at least two simple reasons. It discourages consumers' spending (and thus adversely affects the GDP growth) and leads to falling wages. Nominal GDP had been contracting at an annual rate of 0.36 percent over the same period. That meant a negative real growth rate of about 0.13 percent per year.

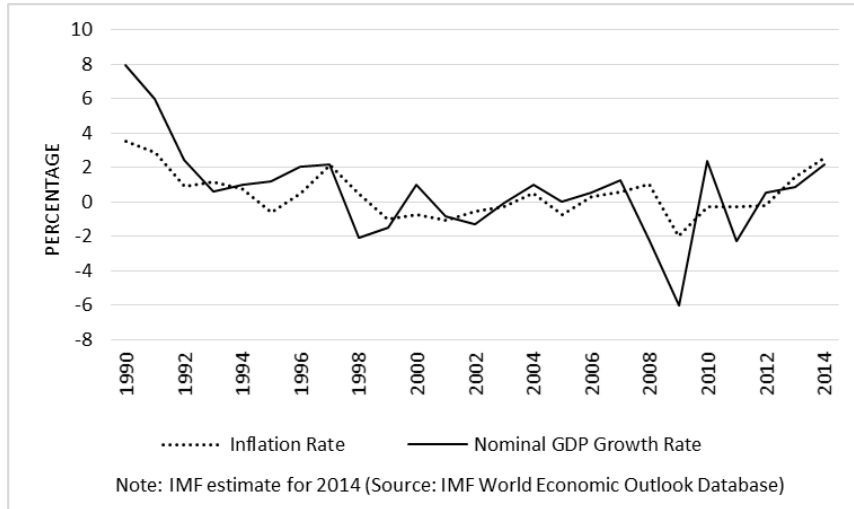


Figure 2: Japan inflation & nominal GDP growth rates (1990-2014)

### 2.3 Massive Government Debt

The Japanese government has been running deficit since 1993 and the situation started to worsen from 1999 onwards. It seemed to have bottomed out in end-2009 (49.0 trillion yen) and began to contract. In 2012 it fell further to 41.3 trillion yen, representing 8.7 percent of GDP. By contrast, the government debts are just mounting steadily. Figure 3 shows that, in 1990, the government debt stood at 301.3 trillion yen, taking 67.0 percent of its GDP. In 2012, the figures have more than tripled to 1,124.5 trillion yen and 237.3 percent respectively. Japan’s debt ratio should be the highest one among many advanced economies.

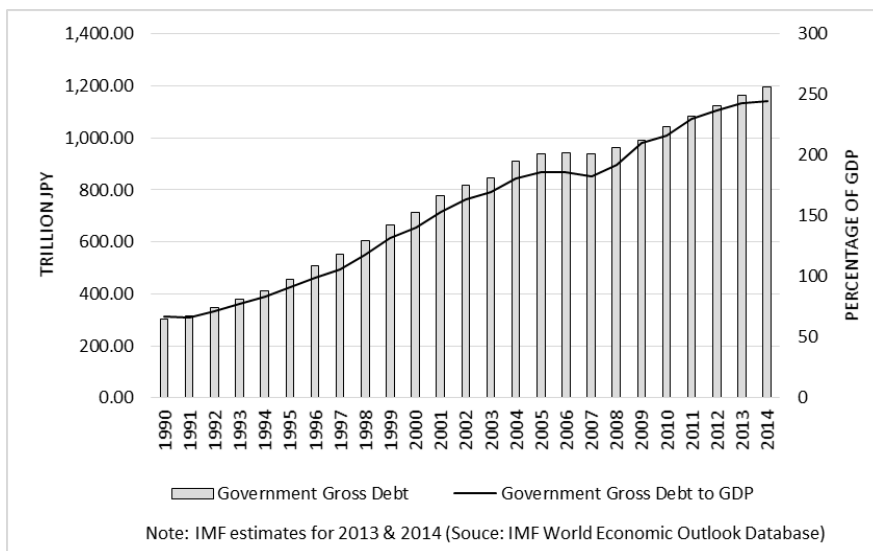


Figure 3: Japanese government debt (1990-2014)

## 2.4 Sluggish GDP Growth

The bursting of the property and stock bubbles in the early 1990s has led to a number of problems. From international perspective, over the “two lost decades,” Japan has achieved only 17-percent growth in its real GDP, the lowest among the G-7 countries (Figure 4). That meant a negligible real growth rate of about 0.8 percent per year (the situation was more or less the same for the period 1991-2012).

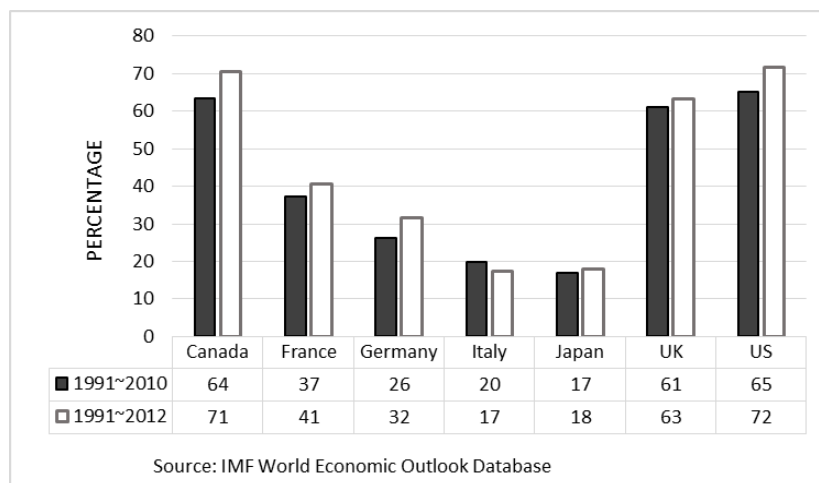


Figure 4: G-7 real GDP growth over different periods

Apart from the huge increase of non-performing loans in the banking industry, the labor market had also been dampened, as reflected by the salary and unemployment levels. For the salary level, the starting salary of male university graduates has been selected as representative, for two reasons. First, data can be dated back as early as 1989 and downloaded easily from the website of Ministry of Health, Labour and Welfare, Japan.<sup>3</sup> Second, the starting salary of university graduates (instead of wages of experienced employees) might be more sensitive to economic cycles. Regular workers can be laid off due to bankruptcies in economic downturns, but the wage level of those still employed may just be frozen. On the contrary, companies would probably stop recruiting new staff, putting downward pressure on the starting salary of fresh university graduates.

Figure 5 clearly demonstrates, as expected, the inverse relationship between the starting salary growth rate of male university graduates and the unemployment rate in Japan, especially for the 1990s. The growth rates have been plunging from 5.6 percent in 1991 to -0.5 percent in 2010, over which the unemployment rates have been climbing from 2.1 percent to 5.1 percent. And even for the later two years 2011 and 2012, there was not much improvement observed. On average, male university graduates could only get tiny annual increase (0.8 percent) with their starting salary over the “two lost decades.” The average unemployment rates of the other six G-7 countries (“G-6”) have also been drawn here. An interesting point here is that, Japan unemployment rates are always lower than

<sup>3</sup>Data for “all employees” (that is, composite of male and female) is not available before 1996. “Male” data is recommended due to Japan’s traditionally low women participation in the workforce (which is one of the structural problems that Abe wants to tackle with the third arrow.)

the G-6 averages, by at least 2 to 3 percentage points.

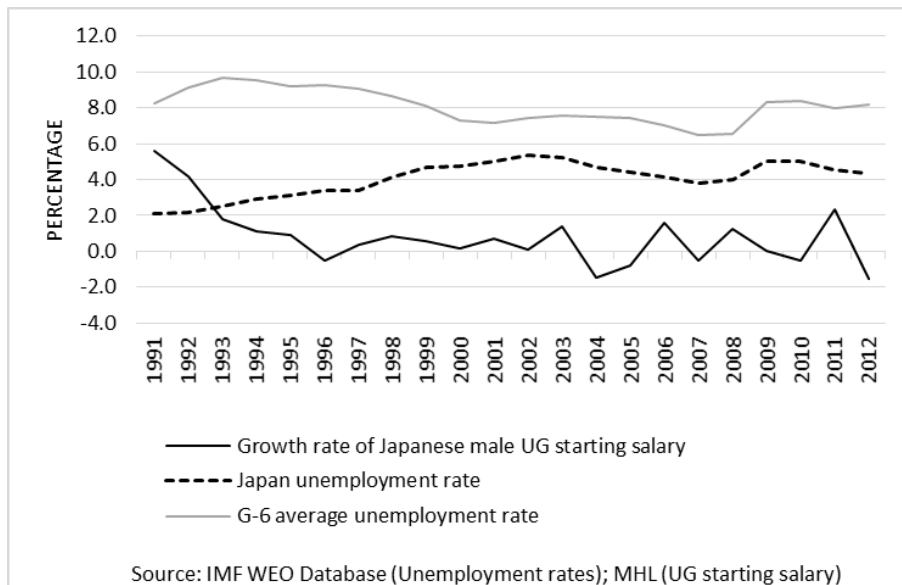


Figure 5: Growth rate of Japanese male university graduate starting salary & Japan vs. G-6 unemployment rates (1991-2012)

### 3 The Two Arrows of Abenomics

In January 2013, shortly after becoming the Prime Minister, Abe has implemented a series of stimulatory economic policies to rescue the economy. The details of the first two arrows and the objectives behind are described as follows.

#### 3.1 Hyper-easy Monetary Policy

On 22 January 2013, the BOJ, the central bank of Japan, has made known its commitment to ending persistent deflation by declaring the 2-percent target inflation rate, to be achieved within two years. This action has been recommended by some economists, like Krugman et al. (1998)[4], who believe Japan has been under its liquidity trap. BOJ finally introduced its “quantitative and qualitative monetary easing (QQE)” programs on 4 April 2013 (BOJ (2013)[5]). The “quantitative” part of QQE basically involves BOJ’s large-scale annual purchases of (i) Japanese government bonds (JGBs) by 50 trillion yen, (ii) exchange-traded funds (ETFs) by 1 trillion yen, and (iii) Japan real estate investment trusts (J-REITs) by 30 billion yen through the open market operations, so that the monetary base can roughly be doubled (from 138 trillion yen at end-2012 to 270 trillion yen at end-2014) in two years. The purchase amounts of (i), (ii) and (iii) have been further expanded to 80 trillion, 3 trillion and 90 billion yen, respectively, upon its later announcement on 31 October 2014 (BOJ (2014)[6]). The “qualitative” part of QQE involves buying JGBs with all maturities (including 40-year JGBs), so that the average remaining maturity of its holdings can be more than doubled from three to about seven years (further extended to about 10 years with that later announcement). As a whole, the

QQE program is, however, nothing new.<sup>4</sup>

### 3.2 Flexible Fiscal Policy

In its previous attempts to reignite economic growth amidst the “lost decade,” the BOJ has cut its basic discount rate to the zero lower bound (below 1 percent) since September 1995. Under such circumstance, according to Krugman et al. (1998)[4], simply expanding the monetary base could have little effect on the economy. And it is where fiscal policy can play its role here by boosting the aggregate demand in order to stimulate the economy. The Cabinet Office has carried out a dramatic fiscal stimulus package worth 10.3 trillion yen in January 2013 (COJ (2013)[7]). Around 3.8 trillion yen has been reserved for reconstructing the areas damaged by the earlier tsunami, and strengthening the country’s infrastructure for better disaster prevention. The remaining amount would be dedicated to encouraging private investments, developing agriculture, education and healthcare systems, and a wide range of revitalization strategies (that were categorized under the third arrow).

On the other hand, with the government debt mounting to more than double of the GDP, the policy also targets at fiscal consolidation. It aims to halve the primary deficit to GDP ratio from 6.6 percent in 2010 to 3.3 percent in 2015, and reach a primary surplus by 2020. To use the Cabinet’s words (COJ (2013)[8]): *“The Government seeks to create a virtuous cycle, in which economic revitalization promotes fiscal consolidation and progress in fiscal consolidation contributes to further economic revitalization, thereby achieving both sustainable economic growth and fiscal consolidation.”* On the expenditure side, it involves slashing social security expenses, cutting and enhancing the quality of administrative services, and prioritizing different projects, etc.. On the revenue side, it mainly involves expanding tax revenues by raising the consumption tax from 5 percent to 8 percent on 1 April 2014 (which it did) and further to 10 percent originally scheduled on 1 October 2015.

Therefore, the fiscal policy under the second arrow is said to be flexible, encompassing both contractionary and expansionary elements. The Japanese government seems to be carrying out an expansionary contraction policy, which in principle might be workable if the public are convinced that the government will cut and maintain their expenditure at low levels permanently, and tax is increased only temporarily so that consumption will be stimulated because of wealth effect (Giavazzi and Pagano (1990)[9]).

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<sup>4</sup>The “quantitative” part is quite similar to the QE by the FOMC since 2008. Both of them involves aggressive buying government bonds, but the FOMC’s QE was larger in scale. The “qualitative” part is, to some extent, similar to the OT, with a view to extending the maturities of government bonds and lowering long-term interest rates. The difference was that OT did not attempt to affect the quantity because it was just buying long-term and, meanwhile, selling short-term US Treasuries with the same amount (so-called flattening the yield curve).

## 4 Evaluation

The fact that we do not use event study in this paper does not mean that we do not face similar problem here. It must be noted that various central banks (e.g., the Federal Reserves, Bank of Japan, Bank of England) have been printing their money in one way or another over the past several years. The timeframes were not the same (e.g., FOMC has already ended its QE in October 2014); nonetheless, there could be leading, coincident or lagging effects on other countries, making our final results biased. Or, it might simply be too early to examine the performance of Abenomics, with just two-year history.

### 4.1 Hyper-easy Monetary Policy

Over the lost decades, there have been several times that Japan attempted to use quantitative easing to assist economic recovery. But they failed for various reasons and had been under heavy criticisms (Bernanke (1999)[10]). Plenty of previous studies, based on different countries' accommodative monetary policies, have been performed to estimate their effects on various financial variables and asset prices.<sup>5</sup> Generally speaking, we can expect that QQE could not only reduce long-term interest rates and reflate the economy, but also induce the depreciation of yen (as suggested by Bernanke (1999)[10]), and also raise asset prices.

#### 4.1.1 Long-term interest rates

Williams (2011)[11] estimates that for a US\$600 billion QE program, the longer-term JGB yield would decrease by 400 basis points.<sup>6</sup> Figure 6 draws the yield curves of JGBs of 10- to 40-year maturities from 3 December 2012 to 28 November 2014. It can be seen that all of them had been falling quite sharply since January 2013 when the 2-percent inflation target was announced, and to their bottoms by early April 2013 when the QQE was about to be embarked on. Of course, the scale of QQE is smaller than US\$600 billion, it is impossible for nominal yields to become negative, though.<sup>7</sup> Even for the longest-term (40-year) JGB, its yield fell by around 80 basis points *only*. The yields seemed to start falling again in early November 2014. This was possibly due to the 31-October announcement of ratcheting up the QQE.

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<sup>5</sup>Examples are Joyce et al. (2012)[1] and Williams (2011)[11]. The latter has made a comparison between Japan, U.K. and U.S. QE programs after renormalizing the effect to a US\$600 billion QE.

<sup>6</sup>Table 1, Williams (2011)[11], p.5.

<sup>7</sup>If we take the USD/JPY rate in April 2013 as around 100 (Figure 8), US\$600 billion would be approximately equal to 60 trillion yen, which is 10 trillion yen higher than the amount for buying JGBs in QQE.



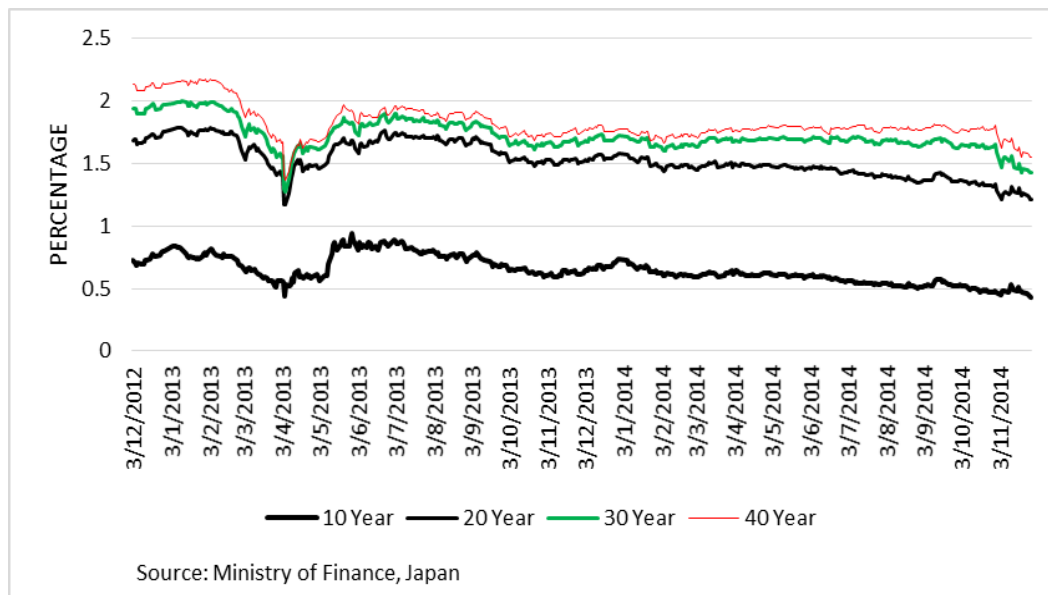


Figure 6: JGB yield curves of different maturities (Dec 2012 – Nov2014)

Anyway, the BOJ seemed to have succeeded in reducing the long-term interest rates. But there are some other underlying factors helping the JGB yields kept at low and stable levels. For instance, as pointed out by Arslanalp and Lam (2013)[12], those factors include ageing population (the elderly generally tend to avoid risk and prefer risk-free assets like JGBs), prolonged current account surplus (around 3 percent of GDP on average over the past two decades), stable investor base (JGBs are held primarily by domestic investors with robust savings), and sustained deflation.

However, there are some imbedded risks that must be noted. Firstly, Japan's current account surplus has trended downwards steadily since 2007 and was estimated by the IMF to drop to below 1 percent of its GDP in 2014 (not shown here). Secondly, Horioka et al. (2013)[13] find that foreign holdings of (especially short-term) JGBs have been rising since 2005, which means more reliance on foreign investors and hence upward pressure on the yields would be expected in future.<sup>8</sup> Lastly, once deflation is ended, the nominal interest rates must be raised; otherwise, negative real interest rates are simply unsustainable in the long run. Given that the 10-year JGB yield is currently standing at about 0.4 percent; how much further can it be reduced is really questionable.

#### 4.1.2 Japanese yen

The value of yen has been hovering around the 80/dollar level for more than a year until late 2012, when Abe won his election (Figure 8). By the time when the QQE was announced in April 2013, it has already depreciated by over 15 percent. Another round of

<sup>8</sup>They also find that since September 2007, the share of foreign holdings of short-term government securities has increased much more rapidly than that of medium- and long-term government securities. In September 2011 the percentage of the former was about 16 while it was only around 6 for the latter. And the wide divergence might be due to the fact that foreign central banks simply "parked" their funds temporarily during the global financial crisis in 2008.

significant depreciation occurred in August 2014, possibly due to the proposed (but not yet announced) expansion of QQE. On the whole, the yen has depreciated by 30 percent since Abe took his office. But the magnitude of depreciation so far might not be large enough to boost its exports (4.2.1).

### 4.1.3 Asset prices

The Nikkei 225 Index has surged by more than 70 percent since Abe became the Prime Minister. An earlier study by Ueda (2013)[14] says, however, that such kinds of large and positive market response might probably not reflect improved economic conditions, but only those speculative trades by foreign investors who are too optimistic about the QQE. The Urban Land Price Index, up to September 2014, was still dropping, but at a decreasing pace. Although there may be some wealth effects for domestic investors, asset price inflation should be distinguished from goods price inflation.

### 4.1.4 Inflation

The core inflation rate started to turn positive from June 2013 onwards (Figure 7). The sales tax hike from 5 to 8 percent on 1 April 2014 has pumped it up to above 3 percent. But because of unsatisfactory GDP growth for the second and third quarters of 2014, the proposed further increase to 10 percent has been postponed for 18 months (4.2.2). It seems that more time is needed before the 2-percent target rate can be reached. Figure 7 also shows the seasonally adjusted unemployment rate during the period, which has fallen by around 75 basis points (in fact, Japan's unemployment rate has rarely exceeded the 5.5 percent level in history).

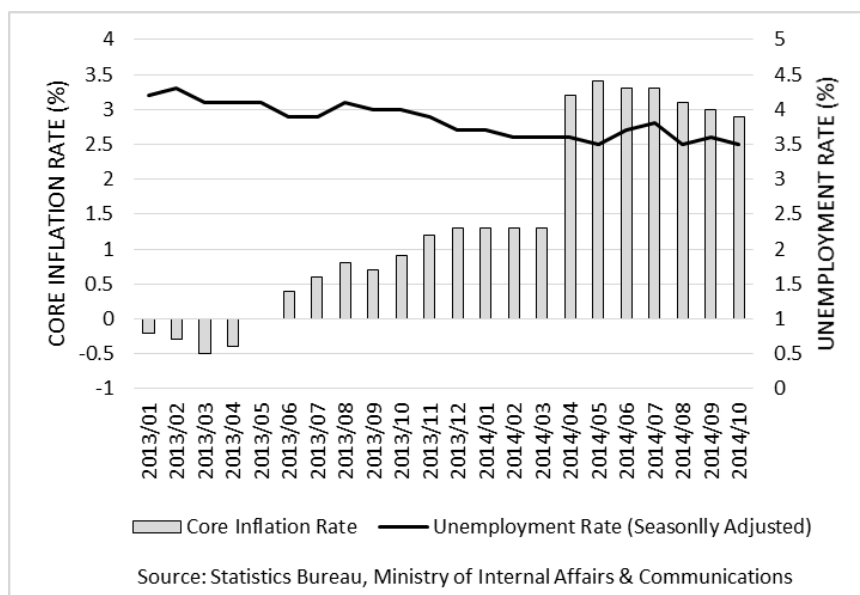


Figure 7: Core inflation and seasonally adjusted unemployment rates (Jan 2013 – Oct 2014)

## 4.2 Flexible Fiscal Policy

As said, it is composed of both contractionary and expansionary components. Perhaps the most controversial act was the sales tax increase in April 2014, because it appeared to have counter effect to the aim of reflation and was put too early. Abe is, however, so determined to have it raised again to 10 percent in April 2017 without further delay. In order to assess fairly the results of fiscal retrenchment, a longer observation period might be needed so that more solid data can be released for examination.

### 4.2.1 Trade balance

The depreciation of yen brings mixed results here. On the positive side, as Japanese goods become less expensive, the number of tourists visiting Japan has doubled from around 600,000 per month in early 2012 to 1,271,700 in October 2014. On the negative side, up to November 2014, the trade balance still remains in deficit (Figure 8). Also, the drastic depreciation of yen brings imported inflation. Prices of imported products (in particular, coal, fossil fuel and LNG) are soaring, which will in turn suppress the private demand.

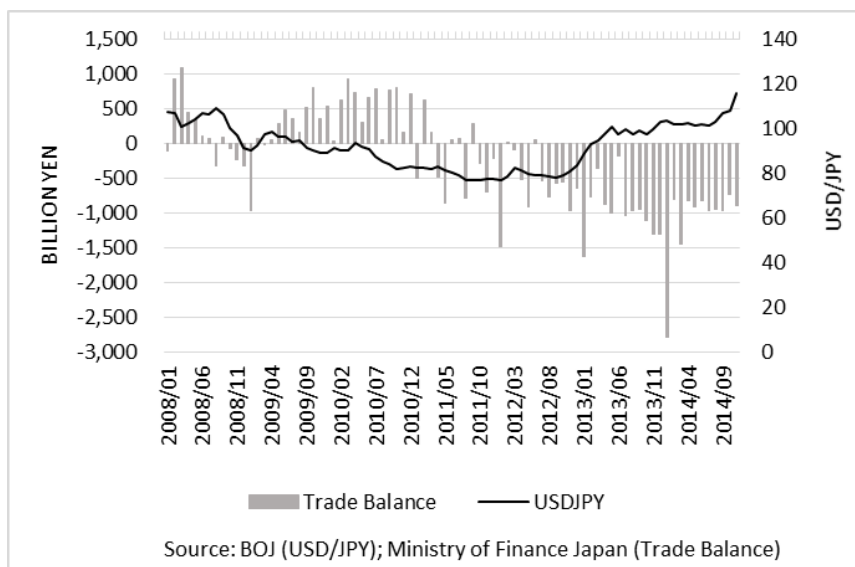


Figure 8: Japan trade balance (Jan 2008 – Nov 2014)

### 4.2.2 GDP growth

The quarterly real GDP growth rates have been very volatile in 2013 and 2014. By comparing the G-7 countries' real GDP growth rates in 2013, Japan's 1.52 percent still ranked the fourth highest (Figure 9). Figure 10 shows some quarterly figures between the first quarter of 2013 and the third quarter of 2014 (COJ (2014))[15]. In the data table, the first three rows list out the annualized quarterly real growth rates of household consumption, business investment, and GDP respectively, after seasonal adjustment. The last row gives the original real GDP growth rates over the same quarter of the previous year. It can be seen that in the first quarter of 2014, Japan has recorded a remarkable real growth, at annualized rate of 5.8 percent, mainly driven by tremendous increase in business investment (27.2 percent) and also advance household consumptions (9.0 percent)

prior to the implementation of the sales tax hike in April 2014. The growth rate, however, plunged to -6.7 percent in the second quarter, where the two aforementioned components had fallen dramatically (by 17.6 and 19.3 percent, respectively; household consumption obviously was dampened heavily by the rise in consumption tax). Even though they became more stabilized in the third quarter, a further fall in real GDP has been recorded (1.9 percent), dragging Japan into recession again. Given the present weak business and consumer confidence, whether it can achieve a real growth rate of 0.89 percent (as estimated by the IMF) for the whole 2014 would be skeptical.<sup>9</sup>

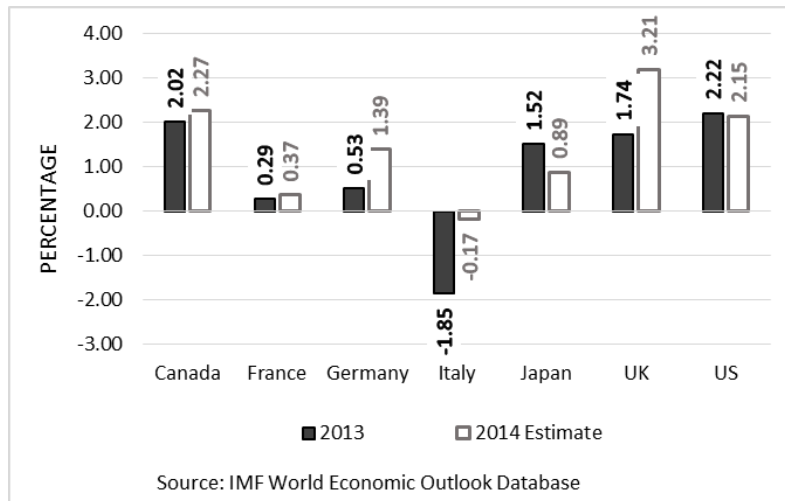


Figure 9: G-7 real GDP growth in 2013 & 2014

<sup>9</sup>By reconciling the numbers between Figure 9 and 10, according to COJ, in 2013, the annual real GDP growth rate would be 1.6% [i.e.,  $(0.5+1.4+2.2+2.3)/4$ ], fairly close to IMF's 1.52%. Hence, if Japan has to achieve 0.89% real growth in 2014, then compared with 2013-Q4, it has to achieve 2.66% real growth in 2014-Q4.

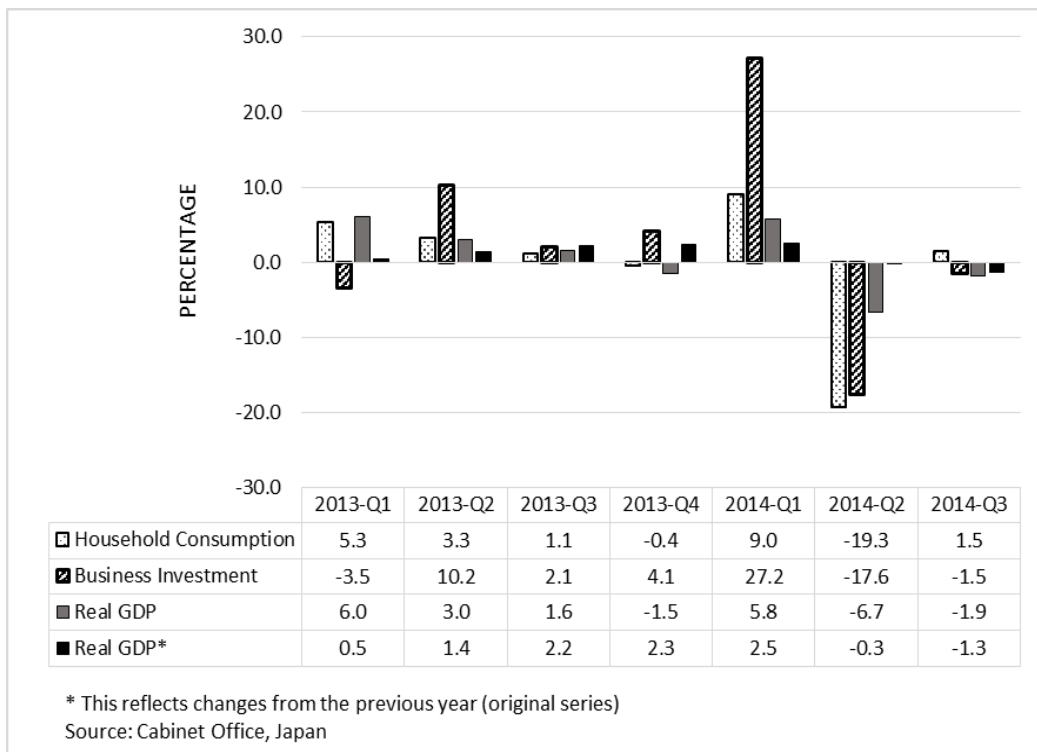


Figure 10: Japan annualized quarterly real GDP growth (seasonally adjusted) (2013 Q1 – 2014 Q3)

### 4.2.3 Government debts

IMF estimated that the government deficits would fall to 39.2 and 34.7 trillion yen for 2013 and 2014, taking 8.2 percent and 7.1 percent of its GDP respectively. For government debts, the situation just continued to exacerbate. The estimated debt amounts for 2013 and 2014 have further surged up to 1,163 trillion and 1,197 trillion yen, accounting for 243 percent and 245 percent of GDP, respectively (Figure 3). More efforts have to be put into the revitalization strategies under the third arrow. If the heavy government debt could not be brought under control over the medium term, doubts would be cast on the government’s credibility and its commitment to carrying out the fiscal austerity program.

## 5 Conclusion

Over the past 20 years, Japan’s economy has been undermined by the problems of ageing population, weak growth, high government debts and entrenched deflation. Shinzo Abe, being the Prime Minister of Japan since December 2012, is highly committed to “bringing back” the economy and restoring public confidence. But there are no quick fixes to all those problems. His three-arrow economic policy package, dubbed “Abenomics,” comprises (i) hyper-easy monetary policy, (ii) flexible fiscal policy, and (iii) structural reforms. There are nothing new by themselves. For (i), it mainly involves launching the quantitative and qualitative easing (QQE) monetary tools to lower (long-term) interest

rates and the value of yen. For (ii), it involves a 10-trillion yen expansionary budget to revive the economy and fiscal retrenchment. And for (iii) it deals with a wide range of structural problems, such as broadening women participation rate in the workforce, enhancing global integrations through the Trans-Pacific Partnership, improving corporate governance, and supporting the agricultural sector, etc.. Hence, the third arrow is a very long-term strategic step for the development of Japan.

This paper, instead, attempts to concentrate on evaluating the performance of the first two arrows. On the whole, BOJ has succeeded in, via the QQE, reducing the interest rates and depreciating the yen within two years. However, the yen might need to be depreciated further in order to boost exports. And the inflation rate is still running far away from the 2-percent target. Even worse, Japan has recorded two consecutive negative GDP quarterly growth rates. As its deficits and debt burden still remain at astronomical levels, the public might start questioning their sustainability and the government's capability to fight for fiscal retrenchment. This might be the main reason why Moody's Investors Service downgraded the Japanese government's debt rating by one notch from Aa3 to A1 on 1 December 2014 (MIS (2014))[16].

Last but not least, how to patch up the exacerbated political tensions with its neighbors would be a big challenge to Abe administration. According to the latest figures from the Ministry of Finance Japan, in the first half of 2014, 18.1 percent of Japan's exports went to China and 21.7 percent of its imports originated from China; 18.4 percent of its exports to the US and 8.6 percent of its imports from the US. Therefore, both China and the US are predominant trading partners of Japan. In the presence of the two largest countries, how to strike a right balance between political and economic interests would be a daunting task to Abe. Although he has won again in the 14-December-2014 parliamentary election, the turnout rate was just 52 percent, 6 percentage points lower than two years ago. This might be an ominous signal of the public's lack of confidence in Abenomics.

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