Analysis Of Japan's Economy (Based On 2014) From Macroeconomics Prospects

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Abstract: Japan is the world's third largest economy. But currently economic situations of Japan are not stable. It is not increasing as expected. Since 2013 it was world second largest economy but Japan loosed its placed to China in 2014 due to slow growth of important economic indicators. By using the basic Keynesian model, we will provide a detailed analysis of the short and long run impacts of the changes for Japan's real GDP, rate of unemployment and inflation rate. We demonstrated a detailed use of the 45-degree diagram or the AD-IA model and other economic analysis of the macroeconomic principles that underlie the model and concepts. Finally we will recommend the government with a change in fiscal policy what based on the analysis by considering what might be achieved with a fiscal policy response and the extent to which any impact on the stock of public debt might be a consideration

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Introduction

The Japanese is one of the earliest nations in Asia to industrialize. During the Meiji restoration period in the mid-19th century, the Japanese government actively pursued Western-style reforms and development – hiring more than 3,000 Westerners to teach modern science, mathematics and technology to Japan. Japan is the world's third largest economy. The currently economic situations of Japan are not stable. It is not increasing as expected.The government's budget deficit increases as tax revenue collapses. The outstanding government debt rises more quickly than in the recent past. The rising government deficit supports a recovery in real GDP growth. The conservatives start shouting that the government will run out of money that interest rates will soar and inflation surge and life as we know will end. The government raises the sales tax and cuts back spending. Real GDP growth collapses, tax revenue falls and the deficit and debt ratio continue to rise. Japan's economy suffered its worst contraction since 2011 in the second quarter as consumer spending on big items slumped in the wake of a sales tax rise.

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- *Over the following five years, the government forecasts spending will grow at a rate three times the annual increase in tax revenue. The big expense: Japan's rapidly aging population. In 1995, 14% of Japan's population was at least 65 years old, while social security and related expenditures took up 17% of the budget. In 2010, seniors were 23% of the population—while senior-related spending ate up 29.5% of the budget. Absent radical change in entitlement programs, Japan's demography is on track to swamp its finances.*

Japan's consumption tax was increased to 8% in April in a bid to improve the country's fiscal position. If needed, the government has the option to implement an additional increase to 10% by 2015. Earlier in the year, consumers responded in a big way, bringing forward big purchases — and all the extra shopping contributed to the strong first quarter numbers. But now that the sugar rush is over, economists had expected Japan's growth rate to return to Earth in the second quarter. The government must decide whether to raise Japan's sales tax to 10 percent next year after an April increase plunged the economy into its deepest contraction in five years. It would note that even though the budget deficit grew in the mid-1990s, it remains true that the Japanese government was overly cautious with respect to the provision of fiscal policy stimulus. They initially adopted an expansionary role which delivered modest real GDP growth. But, over this period they were constantly harassed by the likes of the IMF and OECD (and the host of commentators who choose to repeat the propaganda coming out of those institutions). Japan's outstanding debt now equals 214% of its gross domestic product, according to the Organization for Economic Cooperation and Development(OCED). Prime Minister Shinzo Abe – set to encourage private investment and end persistent deflation. But while Abenomics is likely to revive and boost the economy in the near future, it fails to address significant long-term economic challenges: A huge government debt (the highest debt to GDP ratio in the world), a shrinking and aging population and weak consumption are problems that continue to weigh heavily on the economy. Japan has so far been spared the bond-market punishment facing the beleaguered euro zone. But fears of contagion from Europe and warnings from credit raters of further downgrades, pushed Japanese politicians to set aside their usual fractiousness. Decision-making paralysis has prevented them from addressing a number of challenges, from boosting a long-slumping economy to crafting a new energy policy following the sharp loss of nuclear power after the Fukushima Daiichi accident.

Methodology

By using the basic Keynesian model, we will provide a detailed analysis of the likely impact of the changes described above for Japan's real GDP and rate of unemployment. First of all we will use basic Keynesian model to describe **PAE** (Planned Aggregate Expenditure) or

AE (Aggregate Expenditure) which is **Y**(Gross domestic product, GDP) in terms of **C^d**(domestic consumption),**I^p** (planned investment), **G** (government expenditure), **X** (Export) and **I^u**(Inventories). By using the Aggregate demand-inflation adjustment (AD-IA) framework, we will provide a detailed, theoretical analysis of the short and long run impacts of the changes for Japan's real GDP, rate of unemployment and inflation rate. We need to demonstrate a detailed use of the 45-degree diagram or the AD-IA model and other economic analysis of the macroeconomic principles that underlie the model and concepts. We will also explain equilibrium and disequilibrium situations; and the consequences of panned injections (**J^p**) and withdrawals (**W);** and contractionary output gap. To estimate the effect of contractionary output gap on unemployment we need to recall the Okun'slaw of relationship between GDP and unemployment. Finally we will recommend the government with a change in fiscal policy what based on the analysis by considering what might be achieved with a fiscal policy response and the extent to which any impact on the stock of public debt might be a consideration.

Analysis the Japan's Economy:

Before going into the deep analysis let us consider the following situations of Japan's current economy: g

- **First:** The OECD has downgraded its projections for Japan's economic growth in 2014 and 2015, acknowledging that the country has slipped back into recession in the wake of the April 1, 2004 consumption tax hike**.** The OECD has cut its economic forecast to 0.9 percent in 2014 for Japan.The government data showed that the economy(GDP) shrank by an annualized real 1.6 percent in the three months through September 2014 (July-September), contracting for the second straight quarter, after plunging 7.3 percent in the April-June period of 2014.

- **Second:** Japan logged a 948.5 billion yen ($8.7 billion) trade deficit in August 2014, the 26th straight month of red ink, as slack demand from China and the U.S. stymied exports.Exports fell 1.3 percent from a year (August, 2014) earlier (August, 2013)to 5.71 trillion yen ($53.3 billion) while imports dropped 1.5 percent to 6.65 trillion yen ($62.1 billion). A weakening in the value of the Japanese yen has so far failed to spur a rebound in exports, despite a recovering U.S. economy.

- **Third:** Japan's economy suffered its worst contraction since 2011 in the second quarter as consumer spending on big items slumped in the wake of a sales tax rise. Recovery is being undermined with household spending falling in the four months since April to August 2014, output sluggish and exports unable to provide an engine for growth.

- **Fourth:** Public investment grew up an annualized 6% in the first quarter of 2014 but second quarter the growth almost downed to zero; and also privateinvestment growth downed to an annualized 4% in the second quarter of 2014 compare to 12% growth in the first quarter of 2014.

By considering the above four important points let us analyze the Japan's real GDP on the basis of Keynesian model. In basic Keynesian model, **PAE** (Planned Aggregate Expenditure) is the key, which is can be written in terms of **AE** (Aggregate Expenditure), **Y** as

Y=AE=PAE + unexpected changes in inventories
=C^d + I^p + G + X + I^u
Where C^d(domestic consumption),**I^p** (planned investment), **G** (government expenditure), **X** (Export) and **I^u**(Inventories)

Assumptions: It is assumed that households, government and foreigners always have their plans realized.

Equilibrium: In short run equilibrium, **Y=AE=PAE,** that is there is no unexpected changes in inventories, so **I^u**= 0.

Disequilibrium: Whereas in short run disequilibrium, **PAE>Y,**firms unexpectedly decrease inventories or **PAE<Y,**firms unexpectedly increase inventories.

In the case of disequilibrium firms get signal to change their production so that the economy is in equilibrium under the following assumption.
**Assumptions:** Firms adjust production in response to unplanned changes in inventories.

From the above conditions (Supported by **First** situation) Japan's economy can be described is in short run disequilibrium as **PAE<Y**. This can be explained as Japan's economy is in a position where the products produced by the firms were not all consumed by the domestic market as well as foreign market. (Supported by the **Second** and **Third** situations) In this case (for Japan's economy) firm unexpectedly increased the inventories, that is **I^u**would increase. According to the assumption firms got signals to adjust the production to be in equilibrium where the expected demand (**PAE)** and production will be equal. To cope with the of situation of Japan's economy, the firms would decrease the production in response to unplanned increase in inventories (**I^u).**

If firms decreased the production how it will affect the economy?

Since firms cut downed the production as the demand is less than expected (**PAE),** Japan's economy would produce less than its potential GDP (**Y***). So firms cut down expected(planned) investment (**I^p**) Let us assume that all the components of economy remain unchanged only the firms would cut down their planned investment (**I^p**) to produce less to adjust the down ward expected or planned aggregate expenditure (say, **PAE$_1$**). This would create a contractionary output gap and the economy might fall into recession. In other words, as the firms planned investment ((**I^p**) would be less, the panned injections (**J^p**) line would fall to downward as a consequence the planned aggregate expenditure (**PAE**) would also fall down (say, **PAE$_1$**) so that the economy rest in a new equilibrium, where in the new equilibrium production (**Y^e**1) will be below its potential production (**Y***). The decreases in export (**X**) will also yield**J^p** to downward. This is illustrated in the following graph-1:

Graph-1
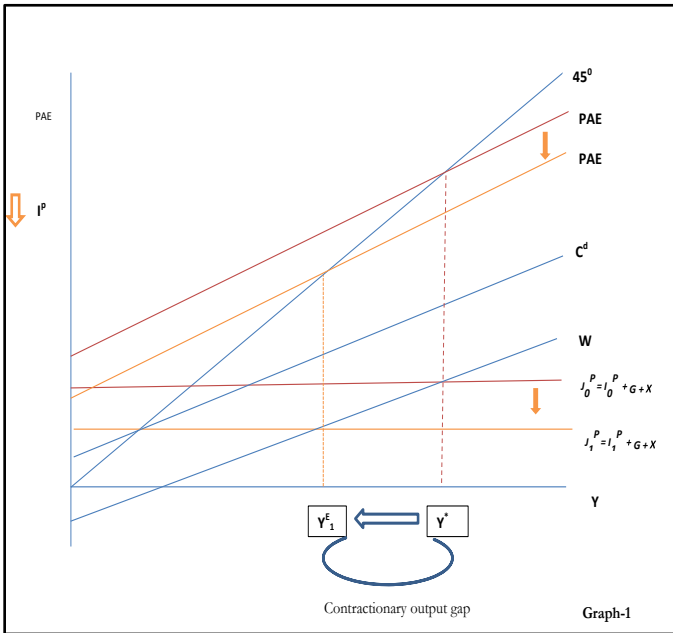
Effect of less consumption: It is observed from the Japan's economy that the domestic consumption had decreased drastically (**Third** situation) which lead to a downward movement in **C^d**line. As the consumption is less, it will increase in saving (**S**). On the other hand import (**M**) has increased consecutively (**Second** situation). Increasing both **S** and **M** lead to enhance withdrawals (**W= M+S+T**) and **W** schedule will go up. It has to mention that change in withdrawals **W**respond systematically to income (**Y**). Thus downward turn in **C^d**will also result downwardto **PAE** (say, **PAE$_1$**) which lead to output (**Y$^e_1$**) less than its potential (**Y***). This would create a contractionary output gap and the economy might fall into recession. The above analysis is shown in the following graph-2:


Graph-2
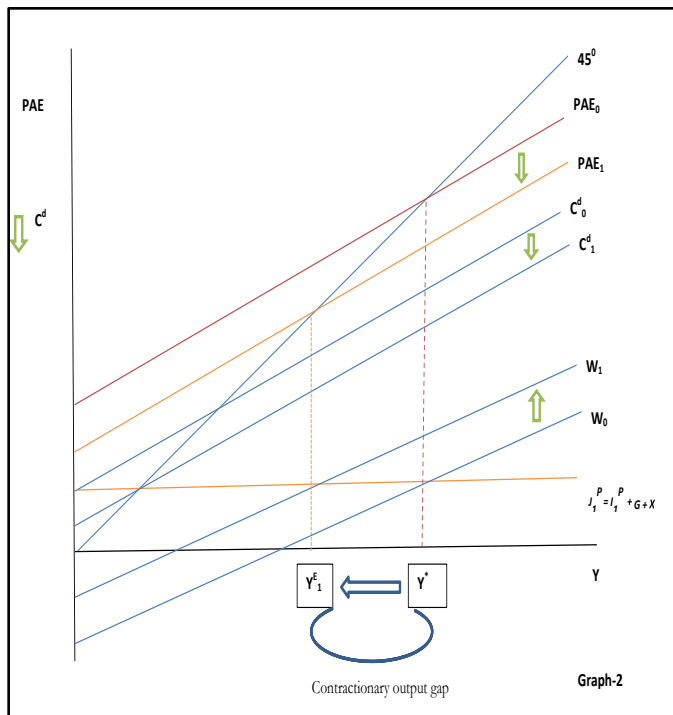
It has to be mentioned that according to assumption, it is endogeneity of economic equilibrium, Y^E_1 as it is inside the model whereas the potential output of the economy, Y^* is the exogeneitythat is outside the model. Since the firms are producing less, it has multiple effects in economy. Small changes in exogenous variable lead to large output changes. In other words the changes in output (Y) will be greater than the changes in **J^P**or changes**C^d**.Thus the equilibrium output is the summarization of the effects of changes in exogenous expenditure.

Effect on Unemployment: To estimate the effect of contractionary output gapon unemployment we need to recall the Okun's law of relationship between GDP and unemployment.

$$100 \times (y - y^*)/y^* = -\beta(u - u^*)$$

According to this law when there will be contractionary output gap, $u > u^*$. This means he actual rate of unemployment u will more than the natural rate of unemployment u*. This will create cyclical unemployment, which is associated with the business cycle. As a result economy will fall into a recession. As much as contractionary output gap increases, cyclical unemployment also increases. Together with the natural rate of unemployment u*, cyclical unemployment will create huge pressure on economy and the recession will further deepen.

(b) Japan's economy is in recession. The actual GDP temporarily is in a new equilibrium point (**Y$^E_1$**) which isless than its potential (**Y***) shown in graph-3


Graph-3
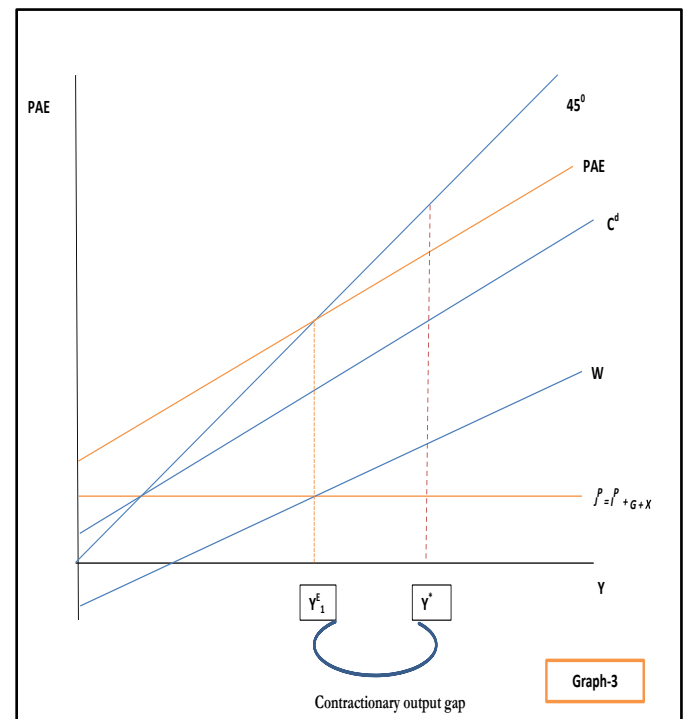
There is a contractionary output gap. As an economist my suggestion to Japan's will be to fill up this contractionary output gap so that economy gets pace to comeback in its normal position where it can produce according to its

potentiality and at the to ensure that the produced goods are consumed by the consumers.

Recommendation: To cope up with the current situations

We would recommendthe government about the changes in the economy which we found out in the above discussion in fiscal policy.

(i) As the economy below its potential level that is it can produce more but there is downward turn in domestic demand (C^d) as well as foreign consumption (X). In this case government can play a significant role to increase the GDP. We know that injection, $J^p(J^p = I^p + G + X)$is an important part of Keynesian model. When the government exogenously increased its expenditure **G,** the injection, J^p goes upward and the **PAE**goes to upward as injection, J^p is a part of **PAE.** As **PAE** increases, the firms increase their productions according to **PAE** and thus the contractionary output gap is filled up is shown in graph-4:

Graph-4
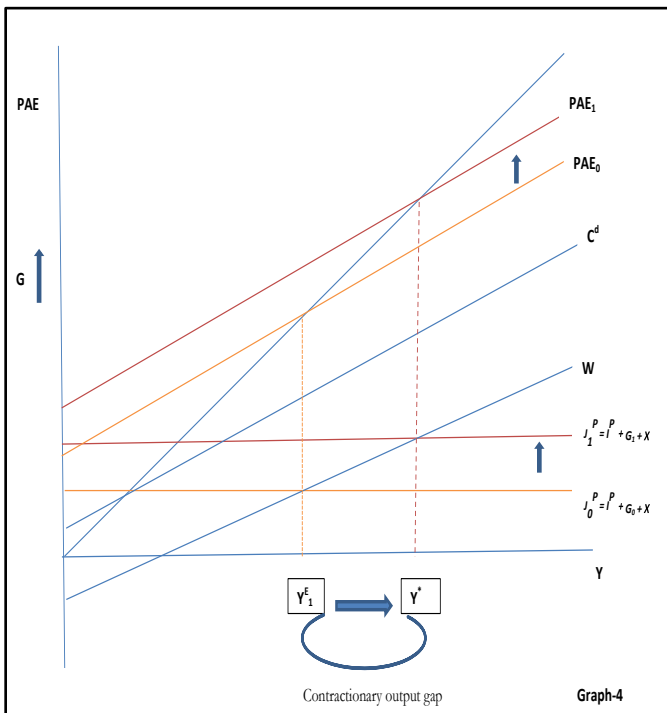
It has to be remembered that the change in Y will be higher than change in G, as there is effect of multiplier.

Conclusion

As the economy of Japan moving very slowly specially GDP, export and consumption, the government's economic policy can play an active role. The government needs to inject in the economy. When the government exogenously increased its expenditure**,** the Planned Aggregate Expenditure (**PAE)** goes to upward and the firms increase their productions according to **PAE** and thus the contractionary output gap is filled. On the other hand to increase expenditure government needs finance. The sources of government finance are taxation (T) and borrowing. In this situation government

might increase expenditure through borrowing by issuing bonds or securities. But borrowing might increase the stock of public debt. When the economy is in contraction, it would be better for the government not to increase the tax, it might decrease the consumption. As a result PAE might again fall down and lead to cut down firm production. So the stock of public debt might not be a consideration in that extent.

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