I. Introduction

Many economists evaluate Japan’s economy in 1990s as “the lost ten years”. In fact, Japan has suffered a decade of economic stagnation, and is still not on the road to full recovery. In this decade, Japanese government and the monetary authority implemented comprehensive policy packages several times; however, those countermeasures does not seem to have enough impacts in stimulating the economy.

In this paper, we overview Japan's macroeconomic data in 1990s, and then examine some economic problems that may cause the decade recession by applying economic theory. Finally, we present several policy proposals in order to resolve the problems.

II. Overview of Macroeconomic Performance

(1) GDP trend

Figure 1 shows annual real GDP growth rate from 1990 to 1999. As can be seen, GDP growth rate steadily declined from 5.3% in 90 to 0.4% in 93 after the “bubble” economy. After the subsequent nearly zero growth, the growth rate gradually increased up to 3.5% in 96, but this moderate recovery process was followed by recession again. In fact, the growth rate declined again in 97, and in 98 GDP growth rate dropped down to negative 1.1% for the first time after the World War II. Although the growth rate 99 turned out to be positive (0.8%) in 99, the economy seems to be still crawling around zero growth rates. To analyze this GDP growth fluctuation, we next look at the contribution by each factor on GDP growth. As shown in Figure 2, the first sharp drop of GDP growth rate was largely caused by the decrease of investment and private consumption growth. Investment growth turned out to be negative 2.1% both in 92 and 93, and consumption growth also gradually declined from 2.4% in 90 to 1.0% in 93.

In response to this sluggish private demand, the Japanese government increased its spending continuously. Though, the overall growth rate only approached almost zero until 93, in the following three years from 94, positive growth of investment (increased from -0.9% in 94 to 1.5% in 96) and constant government spending supported
gradual recovery

The next two-year consecutive decrease in GDP growth was mainly caused by contractive concretionary fiscal spending and weakened domestic demand, thus GDP growth recorded negative in 98. Indeed, government spending growth was restricted to -0.6% in 97 and 0.1% in 98 in order to rebuild government finance. Private consumption did not grow in 98 partly due to an increase of consumption tax, though consumption normally works as a cushion to economic downturn, and investment growth returned into below zero.

In sum, Japan generally experienced feeble economic growth, less than 2% growth in seven out of ten years. It seems almost certain that the most crucial macroeconomic problem in Japan is how to regain the dynamic economic growth.

(2) Collapse of the “bubble”

When we think about the cause of this sharp decline of the economy, burst of the economic bubble is probably an important key. As shown in Figure 12, two major asset prices, land and stock, commonly has a tendency to decline throughout the decade. For example, land price has fallen by as much as 64% since 90, and it does not seem to bottom out. And stock price also declined by 43% in the decade. This asset price fall might have negative wealth effect on the behavior of consumers and corporate managers. That is, reduced assets price immediately changed asset holders’ behavior; household came to consume less and corporate managers faced financial difficulty as the price of land, which is traditionally an important collateral to borrow money, thus reducing the aggregate demand.

![Figure 3: Price Indices (1990 = 100)](image)

Especially after the year 1997, when the economy also faced various environmental changes such exogenous shocks as Asian currency crisis and financial market liberalization, the number of bankruptcy increased and unemployment rate rose more as can be seen in Figure 4, and all these downward effects seem to reinforce further decline of aggregate demand. This is a vicious cycle.

Many financial institutions now are holding massive amount of non-performing loans and they do not want to take additional risks, and borrowers are still suffering deadweight of debt. This situation bring more depressed economic situation in the country.
Policy Analysis

(1) Fiscal Policy

a. Effect of Fiscal Policy

Throughout this decade of recession, the government implemented the largest scale fiscal packages in historical perspective. It arranged six packages in four years from 1992 and the total budget reached over 70 trillion yen. As a result, government bonds outstanding steadily increased and it amounted to 63% of GDP in 1999 as shown in Figure 5. As mentioned above, Japanese economy recovered after the large-scale fiscal expansion in 1992 – 95, but it lost its energy after the contraction of fiscal policy in 1996 and 1997. This positive relationship between growth rate and fiscal expansion may possibly indicate multiplier effect on GDP. At least as far as the economy was in the recovery stage and business vitality was still weak, the support by the national budget may be essential for preventing more serious downturn.

However, these massive fiscal expenditures seem to be unsuccessful in bringing the economy back on the track to full recovery. This is surely one of the most important macroeconomic problems that Japan has encountered and calls for an argument over the effectiveness of the fiscal policy. To examine this issue, we calculated a multiplier of government expenditures. According to the results, the multiplier of government expenditure is 4.234 over the past 19 years (1982-1999); however, it is remarkable that when we run the same regression using only the data during the recent decade, the multiplier dropped into 1.557. This result may suggest that the fiscal expenditure in the last decade had weaker effect compared to the previous decades.

Based on this calculation, one possible answer to our problem may be the reduced multiplier effect. This less effectiveness may be partly because as the economic situation has so dramatically changed from the developing
period in 1960s that the traditional policy tools of public expenditure for constructing public infrastructure such as roads, ports and bridges has no longer brought much ripple effect. Therefore, even if the amount of government expenditure was set record high, the economy could not have enough fuel to grow autonomously due to the declined multiplier. This may mean that it is high time that the government should stop heavily relying on fiscal policy and revise fiscal tool itself.

b. Tax policy

On the other hand, the effect of tax policy has also been a hot issue over the argument that tax increase has little effect on consumption whereas consumer care much about government expenditure considering the lifetime tax payment, what we call the argument of ‘Ricardian Equivalence’. The recent estimation by Economic Planning Agency Japan (1999) showed that the marginal effect of tax increase on private consumption is –0.236 during the period from 1974 to 1998, and comparing the result of –1.26 during the period from 1957 to 1973 it concludes that “the recent economic situation is relatively likely to be explained by ‘the neutrality theorem’”. Our estimation results over the past 19 years (1982-1999) also showed smaller coefficient of –0.199, however, the regression results using only the data during the depression period showed higher coefficients of –0.659 and we think it does not provide enough evidence to prove this theorem.

(2) Monetary Policy

a. Monetary growth and interest rate

Japanese monetary situation since around the ‘bubble’ period is graphically shown in Figure 6 below. First from the graph we can confirm that money supply changed basically correlated with real GDP, which is consistent with the quantitative theorem equation, $M = P\theta Y$ or $Gm = Gp + G\theta + Gy$.

![Figure 6: Monetary policy and price change](image)

However, we should notice that during the ‘bubble’ period money supply growth had recorded much higher than GDP growth and inflation rate. This may be brought by the rapid increase of money circulation velocity in the overheated economy, possibly due to the much active high value asset trade with price increase. But we think this overexpansionary monetary policy far apart from the real GDP trend must be one of the causes of expansion of ‘bubble’. Such separation from real GDP growth in monetary policy can be also seen in the recession phase after the collapse of the ‘bubble’. The money supply growth drastically dropped from 8.31% in 1990 to 0.41% in 1991 and –1.05% in 1992, which are much lower than GDP growth. This rapid fall, to the contrary, quickly and severely

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2 See appendix 2
invited most serious depression coupled with the drastic fall of asset prices. We think that these monetary policies to the ‘bubble’ economy might be mistakes and that in order to realize stable economic move monetary policy should be closely correlated with the move of real GDP.

Different from the policy approach described above, during the second phase depression after 1997 the money supply data showed increasing growth contrary to the serious decrease of GDP growth rate. This unusual policy trend is closely related with the unusual situation of ‘zero interest rate’, and this unusual monetary situation can also be found in interest rate policy. In practice, interest rate policy is said to be implemented using policy guideline called “Taylor’s rule”\(^3\), which formulates the benchmark rate using the data of GDP gap and inflation gap, and in fact we can find in Figure 7 that past interest rate trend basically follows this benchmark rate. However, in the second depression phase after 1997, though benchmark rate rise overnight call rate fell nearly to zero level, below 0.5% after 1996 and from 0.02 to 0.03% after 1999.

![Figure 7: Overnight Call Rate and Benchmark Rate Based on Taylor’s rule](image)

b. Liquidity Trap

These unusual policy approaches apart from the policy benchmark indicated by macroeconomic data, expansionary money supply and sustenance of zero interest rate, can be thought as prescriptions to the unusual inactive business behavior in this couple of years during the second recession phase after 1997. In this phase, though nominal interest rate is kept nearly zero and money supply keeps growing, savings rate still remains high level, and private consumption and investment behavior did not show significant positive change resulting in hovering of GDP around zero growth level. Among economists this situation is what they call ‘liquidity trap’, where interest rate drops to too low level that monetary policy comes to lose its effect.

In our regression result\(^4\), the exponent of sensitivity to nominal interest rate was calculated as –5.608, quite higher than normal case of around 0.3, and to some extent this result indicates this ‘liquidity trap’ phenomenon where traditional monetary approach has no longer function. In other words, we can interpret the situation as that the economy now faced at the problem how the policy can turn those market minds back into normal regular Keynesian trade-off mechanism. The expansionary money supply and sustenance of zero interest rates are the shocks aiming at this purpose in its struggling process.

It is not easy to measure the effect of present monetary approaches and there is no choice other than keeping these for a while, however when discussing on the recent yen dollar exchange rate using theoretical tools we learned in class, we came to think that there may be other possible options for the government to take as a remedy. In the next chapter we will describe this analysis.

(3) International Financial Policy

\(^3\) See appendix 3
\(^4\) See appendix 4
In Figure 8, the data shows a long-term persistent tendency of appreciation of yen against dollar after the renouncement of Breton-Woods system. On the other hand, in spite of long tendency of yen appreciation, Japan has generated a persistent current account surplus, while the US was “suffered” from a large current account deficit since the 1980s (Figure 9). This “imbalance” didn’t seem to be dissolved by yen appreciation as the US policy makers and businesspeople expected\(^5\), because the inflation gap between the two countries canceled out the effect, thus keeping the real exchange rate constant (Figure 10,11). However, the trade conflicts between the two countries keep raising the pressure of the US expectation toward the ever-higher yen. This expectation was strengthened by “talks” of successive secretaries of the US Treasury\(^6\), and we assume that there set up a fixed expectation of ever-higher yen in the both economies in the long run.

When turning to the interest rates, we find a conspicuous feature in the discrepancy of the long-term interest rate in both countries (Figure 12 below). We can see that Japanese government bond yield was kept consistently about 4 percent lower than the US Treasury bond yield since the 1980s. This fact is consistent with the expectation of the ever-higher yen, deflationary situation in Japan, and inflationary situation in the US. In other words, we can see that purchasing power parity and uncovered interest parity holds, as a result Fisher Effect has been held between two countries.

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i_{\text{JP}} = i^*_{\text{US}} + \frac{S^C - S}{S} = i^* + \pi^*_{\text{JP}} - \pi^*_{\text{US}} \Rightarrow 0 \quad (S^C: \text{AA}/S, \ i_{\text{US}} - i_{\text{JP}} = 4\% \ \text{since the 80s})
\]

\[\leftarrow i^* \downarrow \text{since the 80s,} \quad S^C \downarrow \text{in the long run,} \quad \pi^*_{\text{JP}}(\text{WPI}) \downarrow \text{and} \pi^*_{\text{US}}(\text{WPI}) \uparrow \text{since the 80s}\]

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\(^5\) This seems to mean that the elasticity approach on the relationship between current account and exchange rate is somewhat invalid, since current account must be determined in the context of macroeconomic balances,

\(^6\) 1981-84 (Reagan Administration) and 1995 were exceptions.
The problem is that, now, Japanese short-term nominal interest rate is sticking fast to “around zero” since 1996 (Figure 13 above), as the fall in the long-term interest rate pull it down. However, the expectation of the ever-higher yen and the consequent deflationary situation should require the short-term nominal interest rate to go down further, though it is impossible because it is already zero. This “zero nominal interest rate trap” causes the harmful effect that the real interest rate cannot be lowered enough to stimulate the domestic investment. Furthermore, this expectation of the ever higher yen itself might deteriorate the incentives of domestic investments.

If we succeed in upsetting the expectation of the ever-higher yen, we might be able to get out of the deflationary situation and thus nominal interest rate can also escape form zero. In this process, the real interest rate can go down sufficiently to stimulate domestic investments, and the upset of the ever-higher yen itself will promote the investments. Additionally, upturn of price level might upset the deflationary trend in asset markets in Japan, which should contribute to the settlement of accumulated non-performing loans, the biggest problem of the Japanese economy.

?  Policy Proposal – Grope for the breakthrough –

Based upon the analysis on current economic situation and past policies above, we propose the following policy packages

(1) Fiscal and Monetary Policy

Recent changes in multiplier effect of government expenditure and in the effect of tax reduction require the total revision of fiscal policy package. The government basically has to reduce its weight on fiscal policy, and when it arranges supplementary budget support it should be flexible responding to market demand but not traditional budget allocation. For that purpose the process of budget allocation should be revised as soon as possible.

However, at the same time, as was after 1997, sudden contraction of budget support may give crucial damage
to the economy, therefore in this revision process it needs pay attention to the impact on weakened firms with considering the progress of structural reform in the market.

As for monetary policy, expansionary money supply and zero-interest policy have no reason to be stopped for a while. In that sense, those policies has to play passive roles until the market was stimulated to recover its sound response to those policy.

(2) Off the higher Yen expectation

One possible effective approach may be to blow out the higher yen expectation in order to bring in the inflationary economic situation. Introduction of Fixed exchange rate is the most direct approach, however, when considering the international economic environment fairly it is more feasible to set up a somewhat “soft” monetary accord. That is, the US and Japan agree to set a long-term desirable exchange rate target, using a benchmark parity, and commit and declare a substantial intervention in concert if necessary, though remaining flexibility in the short run.

The point is to blow out the expectation of the ever-higher yen, not necessary to set a rigid goal. However, for this purpose, we also need a commercial compact to prevent unreasonable protectionist pressures that tends to lead to relying on the ever-higher yen in order to settle the trade “imbalance”.

(3) Structural Reforms

Though macroeconomic policy should be also properly implemented as mentioned above, the more severe problem exists in the structure of Japanese economy itself, labor structure, financial structure or more cultural factors. These problems must the core of the recent long recession, especially this liquidity trap situation in this couple of years, and to solve the problem, the government should implement more micro level policies, from reforming legal structure to taking care of individual firm’s financial matter in each market.

Among all, the recovery of financial market stability is the most urgent matter to be solved. The government already set up the special agency to clean up financial system and insolvent banks were temporarily nationalized. The government should accelerate this reform using such tools as 1) pouring more money if another crisis would happen, 2) disclose bad loan status so that adequate policy is executed and 3) restructuring financial business itself; in particular recent merged four financial groups.

References

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<Source of the figures>
Figure 1,2 : Cabinet Office Japan
Figure 3 : Cabinet Office Japan, Fudosan Keizai Kenkyusyo, Nihon Keizaishinbun
Figure 4 : Tokyo Shoko Research
Figure 5 : Ministry of Finance Japan
Figure 6 : IMF, International Financial Statistics Yearbook 2000
Figure 7 : Our calculation using the statistic data and estimation by Economic Planning Agency, Cabinet office, Ministry of General Affairs and Bank of Japan
Figure 8-13 : IMF, International Financial Statistics Yearbook 2000