Japan’s Fiscal Policies in the 1990s

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by

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Abstract

This paper first summarizes Japan’s fiscal policies in the 1990s. Then, we investigate the macroeconomic impact of government debt and the sustainability problem. We find that the Keynesian fiscal policy in the 1990s was not effective and fiscal sustainability may become a serious issue. We also estimate the optimal level of deficits and evaluate fiscal reconstruction movements. It is shown that the actual deficit has exceeded the optimal level in the late 1990s. We then inspect fiscal reconstruction movements in the Hashimoto Administration in 1997 and find that the major factor of recession in 1997 was not fiscal consolidation. An important lesson from Japan’s fiscal policies in the 1990s is that the long-run structural reform is more important than the short-run Keynesian policy.

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1. Introduction

Japan's fiscal situation in the 1990s was the worst of any G7 country, having deteriorated rapidly with the collapse of the 'bubble economy' in 1991 and the deep and prolonged period of macroeconomic recession which ensued, and from which recovery has been slow and modest despite the implementation of counter-cyclical Keynesian policy. In order to evaluate the recent movement of fiscal policies in Japan, it would be useful to consider the following points. How did the counter-cyclical Keynesian policy such as raising public expenditures and reducing taxes matter in the 1990s? Has fiscal sustainability become a serious issue? Is it really necessary to reduce fiscal deficits? How much was the optimal deficit in the 1990s? Did the fiscal reconstruction movement in 1997 cause the recession? Why did it fail? This paper will address these issues.

In this section let us summarize briefly the recent movement of fiscal deficits and fiscal reform in the 1990s. After the "bubble economy" was broken in 1991, the resulting tax decreases reduced revenue. At the same time the politico-economic pressures for larger expenditure budgets and counter-cyclical packages of fiscal measures intensified. Responding to them, MOF (The Ministry of Finance) employed several measures for stimulating aggregate demand. However, as shown in section 2, these counter-cyclical Keynesian measures were not so effective, resulting in an increase in the fiscal deficit.

The planned bond-dependency rate rose from a low-point of 7.6% in FY 1991 (initial) to 18.7% in FY 1994 (initial). The reality was still worse. The implementation of counter-cyclical fiscal policy through supplementary-budgets in-year led to further borrowing still, and the actual bond-dependency rate was
more than 22% in FY 1994.

The state of the national finances deteriorated rapidly throughout FY 1995 and FY 1996. MOF was forced to borrow 22.0 trillion to finance a deficit swollen by the large fiscal stimulus in September 1995, resulting in a bond-dependency ratio of 28.2%, its highest level since 1980. In FY 1996 the planned issue of 10.1 trillion of special deficit bonds exceeded all previous experience. Despite the gravity of the fiscal situation the initial budgets for FY 1996 and 1997 nevertheless provided for further increases of expenditure, of 5.8% and 3.0%, respectively. Not only were fixed costs for prior commitments rising, those for discretionary expenditures continued to rise as well. The servicing of that debt absorbed more than a fifth of the total general account budget.

The FY 1998 initial budget was drawn up making utmost efforts to deal with the macroeconomic and financial situation within the framework of new fiscal austerity. The Fiscal Structural Reform Act, which was implemented in November 1997, had three targets to be achieved by FY 2003.

(i) the elimination of special balanced bonds
(ii) the reduction of general government debt-GDP ratio to 60%
(iii) the reduction of general government deficit-GDP ratio to 3%

General expenditures were down 1.3% over the FY 1997 initial budget, the largest decline in history. However, as explained in section 5, in the light of the severe economic and financial situation, the Fiscal Structural Reform Act was revised in May 1998, so that income tax reductions could be easily implemented. Furthermore, since the LDP lost the upper house election in July 1998, new PM Obuchi changed the target of fiscal policy. Namely, further tax reductions and
increases in public works were implemented to stimulate aggregate demand, following the traditional Keynesian counter-cyclical policy. In FY 1998 the issue of special deficit bonds was 21.7 trillion yen due to several fiscal policy measures. By the end of FY 1999 the accumulated debt was total 327 trillion, equal to 65% of GDP. The deficit on the general government financial balance in FY 1999 was 10.0% of GDP, with a gross debt of over 108%. The Fiscal Structural Reform Act is not regarded as a legal constraint any more.

2. Evaluation of the Keynesian Effect

2.1 Method of Analysis

Based on the above discussions, we first analyze the macroeconomic effects of fiscal policy empirically. There exist competing arguments on the efficacy of fiscal policy in the 1990s. One hypothesis is that the effects of fiscal policy were very large and hence recession would have deepened without fiscal expansion. On the contrary, alternative is that fiscal policy did not have an expansionary effect enough to push up the macroeconomic activity and hence unlimited public expenditures simply made the fiscal crisis worse. These opposing arguments, which lead to different policy implications, are mostly due to different understanding of the macroeconomic analytical framework. Namely, the former hypothesis is based on the conventional Keynesian model of liquidity-constrained agents, while the latter is based on the neoclassical model of rational agents.

Although there have been a lot of controversial arguments on the effectiveness of fiscal policy in the 1990s, statistical evaluation has not been done well. Due to limited availability of time series data concerning Japan's fiscal policy
in the 1990s, it is difficult to estimate quantitatively how the Keynesian fiscal policy was really effective during the period. In order to evaluate empirically the effect of counter-cyclical fiscal policy, it is useful to decompose the relevant macroeconomic and fiscal data into trend and cyclical components. Since the trend component reflects a long-term change, we can treat it as the structural change. We then consider how Japan’s fiscal policy actually stabilized cyclical components of the macroeconomic variables in the context of a VAR analysis.

There are several popular filtering methods to decompose time series data into trend and cyclical components such as the Hodrick-Prescott filter (HPF) and the Band-Pass filter (BPF). First, we decompose time series data using these filters. Then, we examine the impact of fiscal variables of the cyclical component on macroeconomic activities by using vector-auto regression (VAR) and impulse response functions. Since this paper aims to clarify the impact of fiscal policies without prior information, we adopt non-structural VAR estimation.¹ The variables used are private consumption (CP), private investment (IP), public investment (IG), and tax revenue (GR), export (EX) and import (IM). To decide the order of the lags, we use the SBIC criterion.

2.2 Results

The estimated impulse responses are shown from Figures 2-1 to 2-4.

Since the results in the BPF case are almost the same as these in the HPF case, we do not show the BPF case explicitly in the following figures. The results in the 1990s are different from these in the pre-1990 period. A 1% increase of public investment decomposed by the HPF (or BPF) case would marginally stimulate private consumption in the 1990s but depress private consumption before the 1990s.\(^2\) (See Figure 2-1). Figure 2-2 suggests that the crowding-out effect on private investment became larger in the 1990s.

We then estimate impulse responses of tax increase. The impact of tax revenue in the 1990s was smaller than before. As shown in Figure 2-3, a 1% increase of tax revenue raised private consumption for the following quarter before the 1990s, while it had little effect in the 1990s. The effect on private investment was not significant. Actually, the effect was sometimes positive (see Figure 2-4).\(^3\)

In short, increasing public investment in the 1990s crowded out private investment to some extent and did not increase private consumption much. It seems that the Keynesian effect was not observed strongly in the 1990s. Moreover

\(^2\) Ihori and Kondo (2001) estimate the effect of public capital on consumption by incorporating public capital into the utility function and point out that it was getting lower since 1965. Kato (2001) estimates the effects of government consumption and public investment based on the structural VAR and points out that they became very low after 1985.

\(^3\) Ramaswamy and Rendu (2000) point that slowdown of private investment was the main reason of recession in the 1990s and fiscal expansion did not have much effect in spite of its scale.
the adverse (non-Keynesian) effect was often observed in the recent years. The overall policy implication is that the Keynesian fiscal policy in the 1990s was not effective.

Bayoumi (1999) shows that fiscal policies have generated limited effects on output in Japan. Namely, tax policies did not have a stronger effect than changes in government expenditure. Furthermore, the effect of fiscal policies was too marginal to recover macroeconomic activities, which is consistent with the main results obtained in this section.

3. Fiscal Sustainability

3.1 Method of Analysis

By the end of FY 2001, the long-term debt outstandings of central and local governments are projected to soar up to 675 trillion yen or over 130% of GDP. The steep increases in government debt give rise to the concern of its future burden. Namely, the resulting increase in government deficits seriously raises doubt about the long-run sustainability of fiscal policy. In this section we investigate whether the cumulative accumulation of deficits could be consistent with long-term government solvency.

A simple way to evaluate the fiscal sustainability problem is to focus on the Japanese government bond (JGB) market. If creditors fear that the government is going to be in a debt trap, the long-term interest rate begins to rise, reflecting an enlarged credit risk. In this regard, despite its weakening credit ratings, the 10-year JGB nominal yield of about 1.5% in 2002 remains lower than the U.S. bond yield of about 1.8% registered during the Great Depression. So far the myth that
JGBs are risk-free has been somehow propagated. This episode may imply that Japan’s government solvency is not a serious issue right now.

However, we also have to pay attention to the possibility that the performance in the JGB yield may not accurately reflect its credit risk. The Japanese banking sector continues to purchase JGBs simply because short-term capital gains from JGBs have been an easy option to offset the existing stock losses. The low level of bond yields may be in themselves ‘bubbles’.

In this section we will attempt an alternative approach to test the fiscal sustainability condition, using the methodology of Hamilton and Flavin (1986). We conduct the empirical analysis outlined in Appendix for the Japanese fiscal data from 1957 to 1999. To conduct the test, the values for the nominal growth rate, \( n \), and the nominal interest rate, \( r \), must be specified. Our strategy here is to set various values for \( r-n \) and to check whether the results are sensitive to the values chosen.

3.2 Results

The results for each sample period are given in Table 3-1. The estimated results in columns (1)-(4) imply that the null hypothesis cannot be rejected at a 5% significance level, suggesting that government solvency was not a serious problem until FY1996. On the contrary, the result for the period 1957-1997 (column (5)) rejects the null hypothesis when \( r-n \) is above 0.05, and the results for the period 1957-1998 and the period 1957-1999 (column (6) and (7)) also reject the null hypothesis when \( r-n \) is above 0.04. These observations indicate that fiscal

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4 For a recent analysis of Japan’s government solvency, see also Ihori and Sato (2002).
sustainability may become a serious issue. The longer the sample period, the more likely we face the fiscal crisis. It follows that further fiscal expansion will cause the public debt crisis to occur in the near future.

4. Optimal Budget Deficits

4.1 Method of Analysis

Even if the accumulation of public debts may still be sustainable, the expansionary fiscal policy in the 1990s has another problem. Prolonged excessive budget deficits are harmful for the economy in the sense that excessive deficits today mean higher marginal tax rates tomorrow, which results in higher deadweight welfare losses of taxation in the long run.

To assess whether budget deficits are excessive, we can employ the theory of tax smoothing originated by Barro (1979). The idea is as follows. Since tax collections are distorting, a benevolent government should choose tax rates to minimize the present discounted value of the welfare loss. If the excess burden of taxation is a convex function of the tax rate, an optimal fiscal rule is to smooth tax rates over time and to finance the resulting differences between government expenditures and tax revenues by debt issuance. Using this analytical framework, we compare the actual deficit with the optimal one.

4.2 Results

Figure 4-1 plots the optimal deficit and actual one (as a fraction of GDP) in terms of the optimal primary budget surplus, $s^*$, and the actual primary budget surplus, $s$. As explained in section 1, the actual deficit has grown sharply due to a
series of fiscal expansions since FY1992. The optimal deficit has also gotten in step with the actual one, reflecting the prolonged economic downturn. Figure 4-1 suggests that the overall fiscal policy in Japan was implemented in consideration of the tax-smoothing hypothesis.

However, it should also be stressed that the actual deficit in the late 1990s was not desirable. The actual deficit has exceeded the optimal level in most of the late 1990s. For instance, the actual deficit was larger than the optimal one by 1% of GDP in FY1999. This implies that the Japanese government should have raised tax revenue of about 5 trillion yen from the viewpoint of tax-smoothing consideration. As shown in section 2, tax increases would have scarcely dampened macroeconomic activities. Such tax increases would have improved the long-term economic welfare.

As shown in section 3, the ballooning public debt brings a sustainability crisis. The tax-smoothing hypothesis is meaningful only if the sustainability condition is satisfied. Moreover, in this section we focused on the tax policy, leaving public spending policy intact. It is well recognized in Japan that government expenditure, especially spending on public works, becomes more wasteful as budget deficits become larger. Thus, considering these factors, the

5 There are many empirical studies on the productivity effect of public capital in Japan. See Iwamoto (1990), Asako et al. (1994), Mitsui and Ohta (1995), Yoshino and Nakano (1996), Doi (1998), Ihori and Kondo (2001), and Ihori and Sato (2002). They commonly conclude that public capital was productive but its productivity has declined much in recent years.
optimal level of government deficit may well be much smaller than the result shown in Figure 4-1.

5. Fiscal Reconstruction Movements under Hashimoto Administration

5.1 Fiscal Reconstruction in 1997

Fiscal reconstruction movements under the Hashimoto Administration have been pointed out as the main cause of the recession in 1997. In this section, we inspect the impact of fiscal consolidation from 1996 to 1998 on macroeconomic activities by chronologically using relevant data. The behavior of the various indexes of business cycle data suggested that the beginning of recession was May 1997. It, therefore, turned out that the timing of fiscal consolidation was not correct. However, this fact of timing does not necessarily mean that fiscal consolidation causes the recession in 1997.

There are four possible causes of the recession in May 1997: (1) The consumption tax rate was raised from 3% to 5%, special income tax reductions ended, and the patient co-payments under the national health insurance for the workers and the elderly increased. (2) Spending on public works reduced. (3) The financial sector crisis occurred in autumn 1997. (4) The overall productivity growth reduced.

As explained in section 1, cutting government spending was one of the main targets of fiscal reconstruction movements started by "Fiscal Restructuring Targets" in 1996. The fiscal structural reform conference was organized in January 1997 and discussed the specific reduction targets for major expenditure. But, three weeks after the Fiscal Structural Reform Act was enacted, Prime Minister
Hashimoto announced a special income tax cut. And the total economic measure, which aimed at the Keynesian fiscal policy, was scheduled when the budget requests for fiscal 1997 were approved. Under these circumstances, the Fiscal Structural Reform Act was suspended in practice. So, it is inappropriate to say that fiscal reconstruction movements had actually negative effects on Japan’s economy.

Based on the data decomposition in section 2, we can observe the impacts of consumption tax increase and expiration of special income tax cut in April 1997 on macroeconomic activities. We found that the trend component of private consumption (growth rate of consumption) began to decline since the 1st quarter of 1996. It recovered slightly just before the 1st quarter of 1997 and declined rapidly in the 2nd quarter of 1997. Overall, it did not have a distinctive effect on consumption during this period. It suggests that the negative impacts of fiscal reconstruction were partial. The behavior of cyclical component shows this conjecture more clearly; private consumption sharply recovered in the 2nd quarter of 1997. Although private consumption front-loaded and then reduced in early 1997, it went back the usual trend. In addition, several indexes of productions and employment did not get worse. Watanabe et. al (1999) show that the impact of permanent tax increase on consumption was very large. Our result indicates that the impact of raising consumption tax rate from 3% to 5% in 1997 was a temporary

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6 In the 3rd quarter of 1997, the real growth rate was 6.9%.
7 Meredith (1998) also points out that the impacts of demand stimulus policy from 1990 to 1996 by 5% of GDP were to increase GDP by 3%, while the fiscal consolidation policy from 1996 to 1997 by 2% of GDP decreased GDP only by 1.25%.
shock.

On the side of fiscal policy, we found that the growth rate of public investment began to decline since the 4th quarter of 1996. Additionally the trend component of public investment declined by early 1990s, but it was stabilized after 1997. On the other hand, the cyclical component fluctuated since 1995, which reflected instability in the fiscal management. We also found that the growth rate of tax revenue began to decline from the 3rd quarter of 1995 and became negative in the 1st quarter of 1997. The cyclical component of tax revenue turned positive in the 2nd quarter of 1997. It indicates that the negative effects of fiscal reform lasted for a very short time. These findings suggest the discretionary fiscal expenditure did not have a strong effect on macroeconomic activities.

In November 1997, several big financial companies were bankrupt and consumption decelerated its trend. Simultaneously, most of indexes of productions and employment got worse at that time. At that time, exports decreased. Under these circumstances, uncertain prospects of firms and bad condition of exports made private investment decline. To summarize the results, as far as we look at several important indexes on macroeconomic activities, the major factor of recession in 1997 was not the fiscal reconstruction movement.

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8 Fear of the financial system crisis arose as follows: The Sanyo Securities went bankrupt in November 3. The Hokkaido Takushoku Bank transferred own business to the Hokuyo Bank in November 17. The Yamaichi Securities, which was the third major securities, announced bankruptcy in November 24.

9 Hayashi and Prescott (2001) suggest that economic stagnation in the 1990s was not
5.2 Failure and Political Factor

Why did the fiscal reconstruction movement in 1997 fail? Certainly, the bad macroeconomic situation contributed to the failure. In addition to this, we would like to mention the political factor.

When the government debt becomes large and the fiscal crisis becomes serious, it would be much difficult to induce all interest groups to cooperate. In words, the later the fiscal reconstruction movement begins, the more likely we would have unsuccessful outcome. The free-riding problem in the fiscal reconstruction process is aggravated when players’ choices are conditional on the observable collective variables. Ihori and Itaya (2001) compared the open loop solution and the closed loop solution for fiscal reconstruction. They found that without commitment higher existing privileges and higher government debt are made relative to the enforceable commitment case. When the political leadership is weak under the coalition government, it is difficult to control the free-riding behavior of interest groups. As shown in Doi et. al. (2000) and Ihori et. al. (2001), this factor cannot be ignored in Japan.

When the program of fiscal reconstruction is too flexible in the sense that it allows each interest group to reconsider the predetermined policies such as subsidy cuts at each point in time when the outcome of fiscal reconstruction is revealed, it is highly likely that fiscal reconstruction ends finally in much failure.

attributed to a breakdown of the financial system but to a declining productivity growth rate.
The Fiscal Structural Reform Act in 1997 had weakness in that it allowed for much room for reconsidering the fiscal reform. Allowing such possibility would straighten an incentive of each group to free ride.

In order to realize successful outcome, therefore, we have to stick to the long-term program for fiscal reform that has been agreed at the beginning of planning period. In practice, one of effective means is to enact legislation for fiscal reform, which does not permit much room for reconsidering or revising the fiscal reconstruction plan. In terms of intergovernmental financing, the central government needs to restrain lobbying activities of local political groups. Reforming the local allocation tax system so that each local government has to collect taxes to finance its own spending is also useful.

6. Concluding Remarks

It is true that the current macroeconomic situation in 2002 is still severe. But, it would be also true that we would face more difficult economic problems in the future since the speed of aging is very rapid and the Japanese market system is behind the ‘global standard’. Even if it is needed to stimulate the aggregate demand, the traditional Keynesian policy seems ineffective, as examined in section 2. Furthermore, when the fiscal situation becomes very serious, fiscal reconstruction may stimulate private consumption and investment due to the ‘non-Keynesian’ effect. Results in section 2 suggest that the ‘non-Keynesian’ effect has some relevancy in the 1990s. When the fiscal situation becomes very serious, fiscal reconstruction may stimulate private consumption and investment due to the ‘non-Keynesian’ effect.
Public opinion concerning the role of government has changed significantly in Japan. The number favoring small government has become predominant among business people. This change is probably caused by the fear that further increases in fiscal burdens would result in bankruptcy of the Japanese government, as suggested in section 3. This concern is a background for the fiscal reconstruction and structural reform movement by the current Koizumi Administration.

There are some attempts for such reform. For example, an effort is being made to put an additional priority on infrastructure investment to improve the people's lives and the environment in urban area. At the same time, seeking to enhance both efficiency and transparency, the efforts to reduce costs and to utilize cost-benefit analysis have been complemented by a new re-assessment system. These changes are desirable but the speed of structural reform is not so high. Further determined efforts are needed to reform public spending and taxation in a more efficient way. The most important policy's lesson from fiscal policy in the 1990s is that the long-run structural reform is more important than the short-run Keynesian policy.

References


Appendix

Hamilton and Flavin (1986) develop the idea of verifying whether the intertemporal budget constraint of public sector would be satisfied. The budget constraint at time $t$ can be written as

$$T_t + B_{t+1} = G_t + (1+r)B_t$$  \hspace{1cm} (3-1)

where $B_t$ is the stock of government debt at the beginning of period $t$, $G_t$ is government expenditure, $T_t$ is tax revenue, and $r$ is the fixed nominal interest rate.

Dividing (3.1) by GDP yields

$$t_t + b_{t+1} = g_t + (1+r-n)b_t$$ \hspace{1cm} (3-2)

where lowercase letters denote corresponding variables expressed as a fraction of GDP and $n$ is the fixed nominal growth rate.

By recursive substitution towards, (3.2) may be rewritten as

$$b_t = \sum_{i=1}^{T} (1+r-n)^i (t_{t+i-1} - g_{t+i-1}) + (1+r-n)^T b_{t+T}$$ \hspace{1cm} (3-3)

Government solvency implies that the last term of the right-hand side of (3.3) be zero when $T \rightarrow \infty$;

$$\lim_{T \rightarrow \infty} (1+r-n)^T b_{t+T} = 0$$ \hspace{1cm} (3-4)

A general class of solutions to (3.2) can be written as

$$b_t = \sum_{i=1}^{T} (1+r-n)^i (t_{t+i-1} - g_{t+i-1}) + \beta (1+r-n)^t$$ \hspace{1cm} (3-5)

Thus, the sustainability condition is satisfied if the null hypothesis $H_0: \beta = 0$ is rejected.

When the assumption of perfect foresight is dropped, an expectation operator conditioned on the information set available at time $t$ is generally added to (3.5). This yields
where $s_t$ is the primary surplus at time $t$ ($s_t = t - g_t$). If expectations of future budget surpluses are conditioned on past budget surpluses, $s_{t-i}$, and past government debts, $b_{t-i}$, then (3.6) takes the following form:

$$b_t = E \left[ \sum_{i=1}^{T} (1 + r - n)^{t+i} s_{t+i-1} \right] + \beta (1 + r - n)^t$$  \hspace{1cm} (3.6)$$

Therefore we can test the fiscal sustainability condition by estimating (3.7) and checking whether the null hypothesis $H_0: \beta = 0$ can be rejected.

The data of central and local governments are used in the following estimation. All data are annual series. The data on tax revenues are constructed as total revenues minus government bond issues; the government expenditures as total expenditures minus interest payments on government debts; the data on debts as the stock of government bonds.
Figure 2-1
Impulse Response of 1% impact of Public Investment on Private Consumption

Figure 2-2
Impulse Response of 1% impact of Public Investment on Private Investment
Figure 2-3
Impulse Response of 1% impact of Revenue on Private Consumption

Figure 2-4
Impulse Response of 1% impact of Revenue on Private Investment
Figure 4-1
Actual and optimal budget surpluses
## Notes:

a. In parentheses below each coefficient are the p-values for the null hypothesis.

b. r-n = nominal interest rate-nominal growth rate.