It is often argued that Japan needs to implement aggressive structural reforms to achieve sustainable and robust recovery. The line of argument is typically as follows: first, a substantial portion of Japanese industry (domestic manufacturing and services such as food processing, real estate and distribution) is either tightly regulated and/or highly subsidized, with absolute productivity that is very low and stagnant. In order to reactivate these sectors, drastic deregulation and/or reduction of subsidies is necessary. Alternatively, attention is focused on confidence factors and fiscal consolidation and/or balance sheet adjustments of the private sector as means to improve consumer and business confidence. These assertions sound plausible but often lack empirical verification, although there have been some case studies\(^1\) on the micro level. Neither have the analyses been framed in the macro context in relation to the effectiveness of fiscal or monetary policies.

One macro analysis that has been advanced by some, including Paul Krugman, is that the Japanese economy is in a liquidity trap rendering monetary policy ineffective.

In what follows, we argue, based on the empirical analysis, that the major reason for the ineffectiveness of monetary policy is not the liquidity trade but rather interest insensitivity of investment in a recession. Also, effectiveness of fiscal policy dramatically declined due to regional misallocation of public investment which has been politically motivated. The public investment multiplier declined sharply from around 2.5 to only about 1 percent in recent years.

Banks still dominate Japanese financial markets receiving approximately 60 per cent of individual savings. Because of continuous pressure from NPLs (non-performing loans) on bank balance sheets, bank lending has continued to decline.

significantly despite an easy monetary policy. Although banks have traditionally been quite conservative, the decree of risk aversion by banks seems to have increased after the banking crisis and pushed the LM curve downward. Thus, although there has been some positive shift of the IS curve to the right, the LM curve continued to shift downward pushing downward pressure on private investment, or consumption.

1. Brief History of Japanese Economy

The Japanese economy was noted for its success after WWII. The following four important reforms were undertaken right after World War II.

1. Land reform --- Large farmers lost their land and small farmers were given their own land
2. Education reform --- 6, 3, 3, 4 years of education which created basic study skills for children
3. Workers proper wage conditions rights which set up the minimum wage rate for workers.
4. Abolishment of large corporate conglomerate (Zaibatsu)

These four reforms were undertaken without social disorder and created the basis for our economy.

The table A1 shows a summary of basic economic indicators of Japan demonstrating economic performance. (Appendix~Table1)

<table>
<thead>
<tr>
<th>Table A1</th>
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</table>

Columns 1 and 2 are the rates of inflation, WPI (=wholesale price index) and CPI (=consumer price index). WPI was rather stable until 1973 when the first oil crisis hit Japan. The price of oil went up more than three times thus both WPI and CPI went up approximately 20% in 1974. During early 1970s easy monetary policies were taken, as can be seen in columns 3 and 4 where the growth rate of high powered money and money supply increased more than 20%.

The Japanese economy grew very rapidly from 1956 to 1970. Average real growth rate was about 10% (column (6)) until the Japanese economy was hit by the Nixon shock in 1971. The exchange rate was fixed with the US dollar until 1970 at 360 yen/$. However, the Nixon shock forced the yen to fluctuate with the US dollar and the yen began to appreciate. The Japanese government and the central bank worried about appreciation of the yen. It was thought that the export oriented Japanese economy would shrink due to appreciation, raising prices in dollar terms and causing Japanese export to suffer. Expansionary fiscal policy and easy monetary policies were undertaken and the growth rate of money supply went up 24% in 1971 and continued its high growth rate until 1974 (column (4)).

In this environment, the first oil crisis hit Japan, where the money supply growth rate was very high. The high oil price together with easy monetary policy brought on a very high rate of inflation in 1973 and 1974 (Columns (1) and (2)). After the first oil crisis, various measures to save energy and expansionary fiscal policies were undertaken.
The second oil crisis hit Japan in 1979. However, due to the energy saving investments by companies, the impact of oil shock to real economy was much less compared with the first oil crisis in the 1973-74 period. At the same time, the monetary policy did a much better job, such that the growth rate of money supply was 11% in 1979 and 1980. The Japanese yen has been appreciating continuously since 1971, yet Japanese exports continued to grow due to quality improvement and cost saving by manufacturing industries.

The Plaza Accord in September 1985 forced Japan to increase imports in order to reduce the balance of payment surplus. Easy monetary and fiscal policies were taken. The discount rate in column (9) fell to 2.5% in 1987 and 88 and the growth rate of high powered money went up more than 10% in the 88-90 period. Yet the rate of inflation was very stable (in columns (1) and (2)) mainly due to high appreciation of the yen, since import prices fell and oil prices were kept stable during this period.

However, the stock price (column (7)) went up to 34,967 yen (yearly average) in 1989 which was more than 3 times as much as that of 1984 (11,060 yen). The land price index also went up more than 3 times between 1984 and 1990 (from 33 to 104).

The period of high stock price and the high land price in Japan was known as the “bubble economy”. Private banks used land as collateral. High land price raised the collateral value and loans were expanded to real estate, construction companies, and non-bank finance companies. Since large corporations started to raise their funds from the capital market and from overseas, long term credit banks (including Nippon Credit Bank and the Long-term credit bank) and trust banks lost their good customers. At the same time, they were competing with their own market size in order to continue collecting deposits. They started to lend money to real estate, construction companies and non-bank financial companies.

Tight monetary policy and credit regulation were introduced in 1989. The discount rate went up to 6 % in 1990 from 2.5% in 1988. The amount of loans from banks to real estate, construction and non-bank finance companies were restricted, even though its effectiveness was questioned due to over due loans.

Before the bursting of the bubble economy at the end of the 1980s, the financial system, along with Japanese management system and employment practices, was considered a key factor behind the country's rapid economic rise. Principal features of that system were: (1) high levels of household saving; (2) market segmentation in financial system by function, maturity, region, and source of funding; (3) the predominance of indirect finance and main banks’ system; and (4) a wide range of government-guided mechanisms to allocate savings and investment and provide stability to Japan’s gosousendan (convoy system), including direct control over 30% of savings deposits through the postal savings system, regulatory controls, non-market determined interest rates (by the Ministry of Finance), branch licensing (by the MOF), administrative guidance (by various Ministries), window guidance (by the Bank of Japan), and, until 1980, restrictions on capital inflows and outflows. The bursting of the bubble has cast doubts in the
minds of even the most staunch supporters in the viability of the system in today's global marketplace.

2. Reasons for current stagnant economy
   <Overall macroeconomic policy>

   The Japanese economy has been in a downturn since 1991, except for a slight recovery in 1995 and 1996. Paul Krugman argues that the current Japanese economy is in a liquidity trap where monetary policy cannot lower interest rates. Therefore monetary policy is ineffective. However, our econometric model shows a different view for the Japanese economy.

   Investment in Japan is interest-rate insensitive. It is often so when the economy is in recession as is shown in Table BB where the interest rate sensitivity for investment becomes zero whenever Japanese economy faces with recession. Therefore the low interest rate policy of the Bank of Japan cannot accelerate private investment. Furthermore, the level of private investment has declined much more due to the credit crunch caused by NPL (Non-performing loans) and failures of large financial institutions. The private investment in Japan (as is shown in Appendix Table BB) does depend on land price especially after 1985 until 1998 where t-value is 3.24.

   This shifts the IS curve to the left, as shown in Figure 1. In such circumstances, fiscal policy should be used in order to shift the IS curve back to the right so that the economy can recover. Despite the huge increase in government investment, the IS curve has not shifted enough to the right. (Appendix ~ Figure 1.)

   This is because public investment has been used to create jobs in various regions of the country rather than increasing private investment into the regions. The multiplier of public investment has declined sharply from about 2.5 to only about 1 in recent times. Public investment cannot bring about a recovery of the Japanese economy. It only increases budget deficits.

   Sudden tight monetary policy in 1990 pushed land and stock prices down about 1/3 from their peak level. Real growth rate of the economy went down except for the period of slight recovery in 1995 and 96. The unemployment rate (column (10)) went up to 4.6% and is expected to rise much more. There are several factors to explain current stagnant economy of Japan.

   (1) The level of consumption is slowed down due to the fall of propensity to consume mainly because of an unforeseen employment future. Secondly, the fall of asset prices lowered consumption including in the corporate sector due to the wealth effect.

   (2) The level of private investment has declined. Japanese economic fluctuations were mostly explained by the movement of private investment recently. The income sensitivity of investment is quite small and private investment does not respond to low interest rates. Despite low interest rates in Japan, private investment does not
grow due to future uncertainty and excess capacity created in the late 1980s. Further falling land prices made private banks reluctant to grant loans due to the fall of collateral value. At the same time, the early warning system introduced in 1998 for bank examination and the BIS capital requirement rule forced banks to reduce their loans which lowered the level of private investment.

(3) The impact of public investment on rural areas is much smaller than that on urban areas, and public investment in the agricultural sector shows much less effectiveness compared to public investment in the industrial sector and the service sector.

(4) The capital inflow and outflows became more interest rate sensitive than before. The lower interest rate in Japan pushes financial investment in the US and other countries. These factors lowered the impact of public investment on the GDP to much less than before. The multiplier effect of public investment fell from about three to one by my estimate.

3. Effects of Infrastructure on Regional Productivity

The effects of social capital on regional productivity are summarized in Table 2. (Appendix ~ Table 2) and Figure 2. (Appendix ~ Figure 2)

(i) The effect of infrastructure on the regional productivity in the agricultural sector shows the lowest direct and indirect effects, where the direct effect is the impact caused by the infrastructure itself and the indirect effect is the impact of the social capital through an increase in the private activities, such as increases in the private investment and private employment in the region.

(ii) The effect of infrastructure in the service sector shows the highest impact on regional productivity both through directly and indirectly.

(iii) The effects of infrastructure in the industrial and service sectors show higher impact in the South Kanto region (where Tokyo is located), the Tokai region (between Tokyo and Osaka) and the Kinki region (where Osaka is located).

(iv) Variations in the effect of social capital show relatively small diversification in the service sector, since the social capital is spent on populated areas in each region and would accelerate private investment and private employment.

These results suggest that the infrastructure should be invested in the South Kanto region, the Tokai region and the Kinki region by concentrating on the service sector and the industrial sector as far as productivity is concerned.

4. Allocation equation of Government Investment to various regions in Japan

(Regression Analysis of the Government Investment Equation in Japan)

The estimated results are shown in Table 3. (Appendix ~ Table 3)
Allocation of government investments in various regions show that the Agriculture and Land conservation have strong positive relations to the political power. On the other hand, the improvement of the living standard has negative correlations with the political power in Japan. As we have seen in the trans-log production function, the economic effect is highest in the social capital in the living standard.

However, recent survey on current state of the economy in various regions in Japan shows that the construction industries in rural area are much less depressed than urban area which also supports the Japanese allocation of the public investments are not related with productivity.

where:
Yp: prefectural income per capita
Sp: the prefectural size per capita
Rp: the number of lower house representatives per capita
Dummy1: dummy variable, "1" for Tokyo and "0" for other regions
Dummy2: dummy variable, "1" for Okinawa and "0" for other regions
: government investment in the Agricultural, Land Conservation, Industrial, and Living Improvement sectors

5. Non-performing loans and the Japanese Financial Sector

MORE than 60% of household financial assets in Japan are either deposited in banks or in the postal savings system. Savings-type life insurance is also popular, accounting for a further 20% of household financial assets. Why do Japanese save in financial institutions rather than purchasing stocks, bonds, or mutual funds? Table 4 summarizes the main allocation of household financial assets among major countries.(Appendix ~Table 4)

***Table 4***
The figures for 1975 show that time and savings deposits accounted for roughly 60% of household financial assets in Germany and Japan. Today, currency and ordinary deposits account for about 12%, time and savings deposits 49%, of Japanese household savings. Japanese still tend to deposit money in banks and post offices, whereas Germans have lessened their bank deposits. There are several reasons why Japanese prefer to save and have bank deposits and postal savings.

1. Convenience. Many banks and post offices are located near the house or

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Sakakibara Eisuke, Why the Japanese Economy is not Growing: micro barriers to productivity growth, McKinsey Global Institute, Washington D.C., July 2000,
Yoshino Naoyuki, Widening Households Savings Portfolio, Look Japan, July 1999,
work place. As the interest rate on small denomination time deposits was regulated until 1993, and until 1994 for ordinary deposits, the Japanese selected their bank for its location, rather than yield.

2. The credibility or safety of the financial institutions. This has been a particularly important factor since Yamaichi Securities and the Hokkaido Takushoku bank went bankrupt in the fall of 1997. (Appendix Figure 3)

In the past, the "convoy" financial system meant that a Japanese bank was not allowed to go bankrupt. The Ministry of Finance and the Bank of Japan managed problem banks through mergers or arranged absorption by a healthy bank so that depositors did not suffer any losses. The postal savings system is 100% guaranteed by the government, which has extended the guarantee on deposits at private banks until March 2002. Customers are soothed by the perceived safety of a financial institution.

3. Yields. People today are more concerned about the yield of financial products, especially those people living in large cities. Despite the fact that the convenience factor still dominates, the rate of return is becoming an increasingly important factor. The BOJ's savings survey supports the increasing importance of the yield factor. (Appendix Table 5)

4. Fragility of the financial institution. Despite the government's guarantee of monetary deposits until March 2002, there is some concern regarding the fragility of financial institutions. Three main factors have contributed to the fragility of financial institutions, despite their good performance history. They are:

   i. The monetary policy of the late 1980s and early 1990s. Following the Plaza Accord agreement of September 1985, Japan was pressured to reduce its trade surplus. Active encouragement of the domestic economy and increasing imports were considered the ways to achieve this. As the fiscal deficits accumulated, pressure mounted to ease monetary policy. The discount rate had been lowered for more than two years between 1987 and 1989, when it was finally raised in 1989. The easing of the monetary policy increased the high-powered money which, in turn, increased deposits to the banks. In the late 1980s, many large corporations started to raise funds from the capital market, rather than borrowing from the banks. The banks were still competing to maximize their market share by absorbing deposits from customers in Japan. There was a strong belief that land prices would never fall. Banks were using land as collateral and were expanding their loans to various sectors, including real estate, construction companies, and non-banking financial institutions.

   ii. Management of banks and the lack of internal auditing. Japanese banks competed among themselves for market share, rather than focusing on profitability. Most of the banks and bankers were watching how other banks were behaving without paying much attention to the possibility of future losses.

   iii. Fall of land prices and in collateral value of the land. Japanese land prices had increased over most of the post World War II period except during the first oil crisis in 1973-74. There was a strong belief that land prices in Japan would never fall. Banks were using land as collateral when they made loans rather than focusing on the expected future rate of return.
of an asset. However, land prices fell after the Bank of Japan adopted a tight monetary policy in 1989. The value of land fell by more than 50% in the large cities. The decline in the collateral value of the land increased the non-performing assets of banks. The number of bank failures increased sharply after 1995, as is shown in Table 6 (Appendix ~Table 6)

****Table 6****

6. What is needed in Japan?

The government should embark upon a policy to change the allocation of public investment from rural regions to urban regions by encouraging more private investment and consumption. As already explained, public investment in recessionary periods was dispersed widely to various regions for job creation purposes. Public investment has to enhance private investment and private consumption in the region, rather than being used as a form of unemployment compensation. Many people say that it is impossible to keep a tight fiscal policy and reignite the Japanese economy. However, what is needed in Japan is to keep the budget tight and to change the makeup and regional allocation of public investment. The role of the politicians in various regions in Japan should be to select an appropriate public investment that will enhance the productivity of the private sector. The performance of public investment should be evaluated by how much private investment and private consumption it encourages.

In order to do this, the political regime or structure of vested interest politics needs to be changed. Some dramatic changes seem to be taking place now because of the revolt of the electorate in the rural area, which has been the net recipient of political favors. Even for those in the rural area, because of the extreme ineffectiveness of public investment, costs have, in some cases, become unbearable or inequitable distribution of benefits politically unacceptable.

ITEMS FOR REFORM As for reform of the financial sector, the following is required: (1) greater transparency of the banks' operation and decision-making procedures; (2) improvement of the supervision and bank examination by the FSA and BOJ; (3) stricter corporate governance of financial institutions and corporations; (4) enhancement of competition among financial institutions an easy entry and easy exit policy; (5) cleaning up of the non-performing loans; (6) changes in the accounting standard from the book value to the market value; (7) adoption of consolidated bookkeeping between a holding company and its affiliated financial institutions; and (8) financial risk management, such as credit risk, market risk, exchange rate risk, and liquidity risk by financial institutions and corporations.

The full guarantee of deposits is mistakenly believed to be needed in Japan since the customer can make deposits without much concern about the health of the financial institution. However, the full guarantee of all deposits means that people can continue to make deposits in any kind of bank including weak banks with a low credit rating. Banks with poor credit risk analysis capability tend to keep on accumulating NPLs. Taxpayers' money will have to be continuously injected to liquidate banks by guaranteeing all the depositors. Superficially speaking, all deposits are fully guaranteed in Japan. However, more taxpayers' money is needed to protect all depositors. If the depositors are able to
recognize the problem banks much earlier, taxpayers will fund what will be saved when problem banks are closed at a much earlier stage. A specified minimum amount of deposits (up to 10 million) should be guaranteed by the government so that people can use the account for day-to-day financial needs. As mentioned above, in Japan, deposits and insurance amount to about 80% of all household savings. All of these products have been 100% guaranteed by the government.

On the liability side, banks have a 100% guarantee for their depositors; on their asset side, however, there are no such guarantees. Banks must take risk in lending to businesses, venture capitalists, and others.

Thus the development of mutual funds and other financial products are needed in Japan. Since Japanese often select a bank or branch solely on the convenience factor, it would be better if financial products, including deposit services and insurance, but also mutual funds, stocks, and bonds were sold by financial institutions, including post offices and agricultural cooperatives. These products are not guaranteeing their principal therefore they could be invested in venture capital and various other riskier businesses.

This would widen the portfolio allocation of households. At the same time, it is important that each financial product be carefully explained to prospective buyers. Otherwise customers may be deceived and dismayed by the losses caused by purchasing certain kind of financial products. Former Prime Minister Hashimoto Ryutaro initiated the "Big Bang" process of financial reform in 1997. His objective was to enhance competition among financial institutions by raising efficiency. The primary purpose of the Japanese Big Bang should not be forgotten.

Direct disposal of banks' NPLs has been advocated in the emergency economic measures recently announced by the Japanese government. However, it is not quite clear from the document whether measures are intended to enhance structural reforms of inefficient sectors and the financial system or to again delay reforms by rescuing ineffective sectors through write-offs. Reactivation of stagnant industries, which account for 90 percent of Japanese employment, by introducing competition among financial institutions, as well as companies in these industries, is being urgently called for.
# APPENDIX

Table 1: Allocation of Public Infrastructure in Japan: (Pooled data, 47 prefecture)

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Explanatory Variables</th>
<th>Agriculture Land Conservation</th>
<th>Industrial Infrastructure</th>
<th>Improvement of living Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\alpha_0$</td>
<td>Constant</td>
<td>-35.44 (-10.46**)</td>
<td>-34.26 (-11.32**)</td>
<td>52.32 (8.00**)</td>
</tr>
<tr>
<td>$\alpha_1$</td>
<td>$Y_p$ (Income)</td>
<td>0.01 (7.21**)</td>
<td>0.01 (13.18**)</td>
<td>0.02 (17.99**)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.036 (25.86**)</td>
</tr>
<tr>
<td>$\alpha_2$</td>
<td>$S_p$ (Area Size)</td>
<td>4970 (28.47**)</td>
<td>2090 (13.40**)</td>
<td>3855 (14.39**)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2730 (8.10**)</td>
</tr>
<tr>
<td>$\alpha_3$</td>
<td>$R_p$ (Political Power)</td>
<td>8280 (16.88**)</td>
<td>7274 (16.60**)</td>
<td>10956 (14.55**)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-7434 (-7.85**)</td>
</tr>
<tr>
<td>$\alpha_4$</td>
<td>Dummy1</td>
<td>-23.21 (-6.69**)</td>
<td>-34.27 (-11.23**)</td>
<td>-59.81 (-5.50**)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-36.85 (-5.50**)</td>
</tr>
<tr>
<td>$\alpha_5$</td>
<td>Dummy2</td>
<td>27.43 (9.26**)</td>
<td>-1.65 (-0.62)</td>
<td>65.87 (14.48**)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>66.89 (11.70**)</td>
</tr>
</tbody>
</table>

Adj. $R^2$  | 0.675                  | 0.486                         | 0.458                      | 0.527                          |

(1) ( ) denotes t-value
(2) ** is significant with 99.0% level,