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PERSONAL SAVINGS RATE:
A COMPARISON OF JAPAN, THE U.S. AND EUROPE

by

Atsushi Maki

I. Introduction

The high level of Japan's personal savings rate has attracted attention both at home and abroad. This paper focuses on why the personal savings rate in Japan is high by international standards and what changes can be expected in the future.

Comparing official personal savings rates, Japan stood at 16.6% (1986), the U.S. was 4.0% (1986), the U.K.'s was 7.0% (1985), West Germany's was 12.0% (1986), France's was 8.8% (1985), Korea's was 16.0% (1985) while Taiwan's was 22.8% (1985). In the OECD countries, Italy has the highest savings rate at 18.8% followed by Japan. It may be worth noting that in both Japan and Italy such high personal savings rates seem to be associated with the high costs of purchasing housing and inadequate levels of social security pension benefits for retirement, factors which rank high among the many motivating factors of personal savings. In Italy and Japan there have been rapid increases in land values, especially in urban areas such as Milan and Tokyo. Since Japan also has high housing costs and land values, it is logical that the personal savings rate should be similar and distinct from prevailing rates in OECD nations.

The savings rate in West Germany is about three quarters that of Japan, those in France and the U.K. are about one half, and that in the U.S. is about one quarter.

Why is there such a degree of discrepancy in the personal savings rates between these countries? Some economists propose that if adjustments to the original statistics are made, no gap actually exists in the savings rates between the OECD countries. Some research has been conducted to verify this hypothesis, but seems inconclusive in determining whether adjusted savings rates are similar. In the following sections, we examine the macro- and micro-economic reasons for the apparent differences.

II. Macro-economic Balance

We consider the relationships between the private, government, and foreign sectors in terms of the macro-economic definitions. Considering the expenditure side:

$$Y = C + I + G + X,$$

where Y is GNP, C is consumption expenditure, I is investment, G is government expenditure and X is net exports, i.e. exports minus imports. Disposable income YD is:

$$YD = Y + F + N - T = C + Sp,$$

where F is government transfers, N is interest payments on government debts, T is taxes and Sp is personal savings. Investment can be expressed as:

$$I = Sp + Sg + Sr,$$

since by definition, investment is equivalent to the sum of private savings, government savings and savings abroad. Positive government savings results in fiscal surpluses, and vice versa.

Based on the investment and savings balance figures by sector in the 1988 National Accounts of Japan, it is possible to determine which sectors generated surpluses. When each figure is divided by nominal GNP, we can obtain the following relationships,

$$I/GNP = Sp/GNP + Sg/GNP + Sr/GNP.$$

(5%) (10%) (−1%) (−4%)

This indicates that the deficit sectors are the corporate, government and foreign sectors, while the private sector is the only surplus sector. The deficit abroad is equivalent to the trade surplus in Japan.

If the government plans a policy that the trade deficit should be kept within 2% of GNP, in the above equation the left-hand side must increase by 2% or the right-hand side must decrease by 2%. The outline is indicated in Table 1. Raw (1) of the table is the increase in domestic demand, raw (2) is the decrease in personal savings, and raw (3) is the increase in the fiscal deficit.

Table 1. Investment-Savings Balance

	I/GNP	Sp/GNP	Sg/GNP	Sr/GNP
	5	10	−1	−4
(1)	7	10	−1	−2
(2)	5	8	−1	−2
(3)	5	10	−3	−2

Formal solutions to improve trade surpluses are: (1) an increase in domestic demand; (2) a decrease in personal savings, or; (3) an enlargement of the fiscal deficit. However, we cannot solve this question so easily, because it is necessary to consider the rational behavior of the private, corporate, and government sectors which determine the observed values of I, Sp, Sg and remaining Sr. As firms determine private investment, we have to

consider optimal investment behavior. As the unit of Sp is households, they will behave so as to maximize lifetime utility within the constraints of their lifetime income. As a result of the optimal behavior of households, the allocation of consumption and savings is determined. In terms of government savings, the government has a stated policy target of reducing the issue of national bonds for repaying previous government debts. And, if there is no confidence that enlargement of fiscal deficits this year will induce an improvement of future fiscal balances, the government cannot easily increase the present fiscal deficit. Finally, savings abroad, the trade surplus, reflects the competitiveness of exports and the international portfolio choice behavior of firms, financial institutions and consumers.

Next, we calculate the investment-savings balance of seven developed countries. The results are presented in table 2. The data is based on the National Accounts for Japan, National Income and Product Accounts for the U.S. and National Accounts provided by the OECD for the other countries.

Table 2. International Comparisons of Investment-Savings Balance

	I/GNP	Sp/GNP	Sg/GNP	Sr/GNP
Japan	5.3	9.3	−0.8	−3.6
Canada	0.9	6.9	−6.8	0.1
France	1.4	3.1	−2.6	0.8
W.G.	2.9	5.8	−1.0	−1.9
Sweden	−2.7	0.1	−3.9	1.2
U.K.	−1.8	2.9	−2.7	−1.0
U.S.	2.6	3.2	−3.3	2.8

Examining the investment-savings balance, the private sector is the surplus sector in every country and the government sector is always in deficit. Almost every corporate sector is in deficit, and three of the foreign sectors recorded a deficit. From the table, the rate of 9.3% in Japan is highest among the countries. On the other hand, that of Sweden is only 0.1%. In Japan and West Germany, surpluses were registered in the private sector, while deficits were recorded for the corporate, government and foreign sectors. On the other hand, in Canada, France and the U.S., surpluses were registered in the private and foreign sectors and deficits characterized the corporate and government sectors.

From the macroeconomic balance, we can understand that not only the private savings rate, but also the patterns of government and corporate savings behavior are different in each country. In order to understand the differences in the private savings rate, it is necessary to consider the other sectors' performances.

Turning back to Japan, our analysis is based on the flow to stock concept and we consider the state of social capital concerning household life in relation to the personal savings rate. According to the 1988 White Paper on national life compiled by the

Economic Planning Agency, Japan's social capital is not as well developed as in most European countries. For example, the extent of paved roads or diffusion of sewers is relatively low in Japan. Moreover, in terms of cultural and recreation facilities, the number of libraries and museums per capita and the area of city parks are low in Japan. On the other hand, environmental and welfare indicators such as diffusion of piped water systems and number of hospital beds in Japan is the same as in European countries.

Compared to West Germany, which also suffered widespread destruction during World War II, there are gaps in housing and the city environment. Many Japanese in cities live in what is sarcastically referred to as "rabbit hutches" – extremely small apartments. The main factor explaining differences in the urban environments of Japan and West Germany is the relative emphasis of economic policies, e.g. the stock accumulation path for the past forty years. In West Germany economic policies after World War II aimed mainly at the recovery of consumers' standard of living, especially improvement of living circumstances such as housing and environment, and deregulation of commodities and financial markets. However, in Japan economic policies mainly aimed at expanding production capacity.

Moreover, Japan's financial system is based on various indirect controls. There are three significant restrictions which support the financial system: 1) the distinction of business activities between commercial banks, trust banks, insurance companies, and security companies; 2) low-interest rates, and; 3) foreign exchange controls. Through the financial system, funds from the private sector are accumulated by the financial institutions at low interest rates, and financial institutions lend these funds to firms. Through credit rationing, optimal allocation of funds was realized, supporting heavy industrialization in the 1950s and 1960s.

The direction of funds into the industrial sector led to the so-called "economic miracle" of the 1960s. On the other hand, social capital and the improvement of living standards lagged behind the impressive economic development and advances in other developed countries. In Japan, there is the expectation that private savings will underwrite necessary social investments without government assistance.

III. Micro-economic Aspects

In the previous section we examined the relationships between private savings and other savings in terms of the investment-savings balance. This section focuses on private savings, especially household savings, and examines the reasons why Japan's private savings rate is so high.

Savings, assets accumulation and portfolio selection of individuals or households are viewed as future consumption. When the household savings rate is, say, 20% on average, certain portions thereof are designated as funds for purchasing housing, funds for retired life, etc. Household savings objectives are oriented towards the purchase of future goods and services. By examining the relative importance of the various household savings objectives, it is possible to shed light on the motivations which contribute to Japan's high rate of savings. The Household Savings Opinion Survey compiled by the Savings Promotion

Committee, Bank of Japan, breaks down the savings objectives for households in terms of preparation for diseases or accidents, education of children, funds for marriage, funds for purchasing housing units, funds for retired life, funds for purchasing consumer durable goods, funds for leisure and funds for anticipated tax payments.

Households save with specific consumption objectives in mind. The survey suggests that the most important household savings objectives are preparation for emergencies, funds for retirement, education of children, and funds for purchasing housing units. Every age group shows a similar strong desire to save in preparation for emergencies. However, the relative importance of savings objectives shifts by age group. For example, savings for retirement rapidly increases after the age of 40 and remains high in the 50s and 60s. Savings for education of children is high for household heads in their 30s, 40s and 50s, but rapidly decreases when they are in their 60s. Savings for purchasing housing is highest for those in their 20s and 30s. As indicated above, households have various savings objectives which are realized by foregoing present consumption and saving from disposable income. Therefore, in order to understand household savings behavior it is crucial to understand the different savings objectives over the course of the lifecycle. For our purposes it is also important to analyzes savings objectives in terms of the purchase of future goods. Households save and accumulate financial assets to provide for emergencies and other future goods such as housing and retirement or to leave a bequest, etc.

The pattern of household savings is influenced by the savings objectives which in turn depends upon the household's life cycle stage. It is clear that funds for education of children and funds for retirement are strongly related to the age of household heads. Savings for housing are also strongly related to age because of the requirement that mortgages be paid off prior to one's retirement. Since housing is very expensive in Japan, it constitutes a major savings objective which strongly influences savings behavior. The repayment period of loans in the case of private mortgage loans is relatively strict and extends only until the age of retirement, i.e. the ages between 60 and 65. Upon retirement, private mortgage loans must be fully repaid, and households must also accumulate a substantial amount of funds for retirement. Thus, households' savings objectives are strongly dependent upon the life cycle stage of households.

Future goods requiring substantial funds are the purchase of housing and funds for retirement. In order to better understand Japan's high savings rate it is useful to examine the influence of these two savings objectives. Using a simplified model it is possible to calculate the lifetime savings rate of households. We assume that there are only plans for consumption of two future goods, i.e. purchasing housing and preparing for retirement. Based on this model, we calculate three kinds of household savings rates; (1) purchasing housing worth 20 million yen; (2) purchasing housing worth 10 million yen, and; (3) no plans to purchase housing.

The model is based on the following assumptions: (1) the sample is between the ages of 20 and 75. There are eleven age groups divided by every 5 years. The average annual income in every age group is based on the Family Income and Expenditure Survey (FIES), Bureau of Statistics. (2) households purchase housing at the age of 35, and there are three alternatives. The prices are 20 million yen (A), 10 million yen (B) and zero (C),

i.e. in the last case households live in rental housing. (3) mortgage loans are repaid by the age of 55 in equal annual installments. (4) At the age of 55 household heads are retired and have accumulated 10 million yen worth of financial assets for retirement. (5) After the age of 55 households live off of pension payments. Between the ages of 56 to 69 consumption expenditures are paid from pension income, and there is no savings or dissavings. (6) Funds for retirement are consumed between the ages of 70 to 74 to pay for medical care and assistance totalling 6 million yen. (7) For simplicity the age pyramid is the same for all the age groups. (8) For households with a plan to purchase housing, savings rates from the ages of 20 to 24 and from 25 to 34 are 10% and 20%, respectively.

Assuming that nominal growth of income, interest rates on deposits, mortgage loan rates, price increases, and construction costs are stable, for household type A, at the age of 35 financial assets total 8.45 million yen and 20 million yen worth of housing is purchased. As the mortgage loan totals 11.55 million yen, type A households between the ages of 35 to 54 repay 580,000 yen every year, and also save 500,000 yen every year for retirement. From the age of 70 to 74, households dissave 1.2 million yen every year. Finally, financial assets of 4 million yen remain for a bequest. As households have purchased housing, this real asset is also part of the bequest.

Calculating average savings rates of type A, B and C for the purchase of housing and accumulation of retirement funds only, that for type A is 11.7%, that for type B is 6.8% and that for type C is 2.0%. For purchasing housing worth 20 million yen and leaving a bequest of 4 million yen, households have to maintain a savings rate of 12%. When the housing price decreases by 10 million yen, the savings rate drops by five percentage points. Households with a savings rate of 2% maintain their rental tenure.

In Japan, housing and retirement are significant policy issues affecting savings rate behavior. Income is not keeping up with the sharp rise in the price of housing while longer life expectancy and rising medical costs increase the amount of funds required for retirement. Consequently, a high rate of savings is necessary for households with their future goods on these consumption agenda.

IV. The Movement of Future Personal Savings Rate

We recognize that savings rates are strongly influenced by the prices of future goods. In making international comparisons of personal savings rates, we must take into consideration the economic policies of the governments affecting the price of these future goods and the relationship of these prices and policies to each nation's specific path of capital accumulation.

In Japan, housing and retirement are two main future goods for which the prices are high. These two goods are strongly dependent upon government policies. To realize housing and urban circumstances at the level of European countries, government planners have to shift their emphasis from encouraging industrial growth to developing consumer-oriented policies. With respect to the problems of an aging society in the future, the government must move to ease concerns about the availability and affordability of care facilities for the aged. Generally, it is likely that Japan's personal savings rate will de-

crease, but the level will remain high compared to other OECD countries. To realize a decrease in the personal savings rate to levels comparable with Japan's counterparts in the industrialized world, government must formulate policies addressing the high costs of housing and retirement.