Past and Future Trends in Japan's Household Saving Rate and the Implications Thereof for Japan's Current Account Balance

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Abstract

Japan was once one of the highest savers in the world and much of its abundant saving was provided to countries with saving shortages to help them finance their investment needs. In recent years, however, Japan's household saving rate has plummeted, falling to only 3 percent, and the collapse of household saving might be expected to lead to a reduction in capital outflows and a corresponding decline in current account surpluses. In this paper, I examine past and future trends in Japan's household saving rate, the determinants of these trends, and the implications thereof for Japan's current account balance.

To preview my main findings, I find, first, that Japan's household saving rate used to be high but that it has declined sharply in recent years and that it is no longer high in either absolute or relative terms. Second, Japan's household saving rate will continue its decline due to the rapid aging of her population and other factors and may well become zero or negative within a few years.

The sharp decline in the household saving rate would, other factors being constant, be expected to cause a decline in Japan's capital outflows and a corresponding decline in Japan's current account surpluses, but during the 2001-07 period, Japan's current account surpluses actually increased. However, this was due to temporary factors such as a sharp decline in government investment and a sharp increase in corporate saving. In future years, the decline in household saving can be expected to bring about a decline in capital outflows and a corresponding decline in current account surpluses, although the impact of the decline in the government's fiscal deficits (government dissaving) and the decline in corporate investment in plant and equipment can be expected to at least partially offset the impact of the decline in household saving. Thus, Japan will not be able to provide capital to the rest of the world as is has in the past, but as long as there are other high-saver countries from which Japan and other low-saver countries can borrow, this will not necessarily cause any problems either for Japan or for the

world as a whole.

1. Introduction

Japan was once one of the highest savers in the world and much of its abundant saving was provided to countries with saving shortages to help them finance their investment needs. For example, according to the National Accounts compiled by the Japanese Government, Japan's household saving rate attained a level of 23.2 percent in 1974 and 1976! However, Japan's household saving rate has declined steadily since then and is now only about 3 percent. The collapse of household saving might be expected to lead to a reduction in capital outflows and a corresponding decline in current account surpluses. In this paper, I examine past and future trends in Japan's household saving rate, the determinants of these trends, and the implications thereof for Japan's current account balance.

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This paper is organized as follows: In section 2, I present data on trends over time in Japan's household saving rate and on household saving rates in international perspective; in section 3, I explore the reasons for trends over time in Japan's

household saving rate; in section 4, I project future trends in Japan's household saving rate; in section 5, I explore the implications of my findings for Japan's current account balance as well as the implications for policymakers; and section 6 summarizes and concludes.

2. The Level of, and Trends over Time in, Japan's Household Saving Rate

In this section, I present data on trends over time in Japan's household saving rates and on household saving rates in international perspective in order to shed light on whether Japan's household saving rate is high in absolute and/or relative terms.

2-1. Trends over Time in Japan's Household Saving Rate

The level of, and trends over time in, Japan's household saving rate varies greatly depending on what data source one uses, but in this section, I will present data on household saving rates from the most commonly used data source—the National Accounts data compiled by the Economic and Social Research Institute of the Cabinet Office of the Japanese Government.

Data from this source for the 1955-2007 period are shown in Figure 1, and as can be seen from this figure, Japan's household saving rate showed an upward trend until the mid-1970s, peaking at over 26 percent in 1974 and 1976, but has shown a downward trend since then, plummeting to 3 percent in recent years.

2-2. An International Comparison of Household Saving Rates

I turn now to an international comparison of household saving rates. Horioka (1989, Table 1) shows data on household saving rates for the 1975-84 period for the sixteen Organization for Economic Cooperation and Development (OECD) member countries for which data are available, while Table 1 shows data on household saving rates for the 1985-2005 period for the 23 OECD member countries for which data are available. Data are available only on gross household saving rates for five of these countries, but since net household saving rates are, on average, about 70 per cent of gross household saving rates, the figures on the gross household saving rate were converted to a net basis using this conversion factor in the case of the five countries for which only gross data are available.

As can be seen from Horioka (1989, Table 1) and Table 1, Japan's household saving rate was one of the highest among the OECD member countries during the 1975-85 period. It ranked first in 1975, was second only to Italy in 1980 and 1985, and was 1.79, 1.61, and 1.81 times the OECD average in 1975, 1980, and 1985, respectively. However,

Japan's rank among the OECD member countries as well as the ratio of her household saving rate to the OECD average both fell steadily during the subsequent twenty years. For example, by 1990, Japan had fallen to fourth place (tie) and her household saving rate had fallen to 1.43 times the OECD average. By 1995, Japan had fallen further to seventh place, and her household saving rate had fallen further to 1.25 times the OECD average. By 2000, Japan had fallen further to tenth place although her household saving rate rose slightly to 1.32 times the OECD average. Finally, by 2005, Japan had fallen further to 17th place and her household saving rate had fallen to only 43 per cent of the OECD average.

Thus, Japan's household saving rate was formerly high not only in absolute terms but also relative to the other developed countries and was at one point the highest in the developed world, but it has since fallen not only in absolute terms but also relative to the other developed countries and is no longer high by any standard.

To sum up, Japan's household saving rate was high in both absolute and relative terms until the mid-1970s but has declined in both absolute and relative terms since the mid-1970s and is no longer high by any standard.

3. The Determinants of Japan's Household Saving Rate

In this section, we explore why Japan's household saving rate was high until the mid-1970s and why it has declined since then (see Hayashi (1986, 1997) and Horioka (1990, 1993, 2006a) for useful summaries of the literature on household saving behaviour in Japan).

Here, I examine what I consider to be the eight most important explanations of why Japan's high household saving rate was high until the mid-1970s.

(1) The Young Age Structure of the Population: The age structure of Japan's population was one of the youngest among the industrialized countries until recently. As Table 2 shows, in 1975, the share of the elderly (those aged 65 or older) in Japan's total population was only 7.9 per cent, which was the lowest among the OECD member countries at the time (this ratio was 3.6 per cent in South Korea in 1975, but South Korea was not yet an OECD member country at the time). According to the life cycle hypothesis, the aggregate household saving rate will be higher in a country with a young population because the young typically work and save, whereas the elderly typically retire from work and dissave, and thus the young age structure of Japan's population can help explain her high household saving rate in the past (see, for example, Modigliani and Brumberg (1955)). Indeed, Horioka (1989) finds that the low ratio of the aged population to the working-age population was by far the most important cause

of Japan's high private saving rate during the 1975-84 period, and the same undoubtedly holds for her household saving rate.

(2) The Low Level of Public Pension Benefits: Public old-age pension benefits were relatively low in Japan until 1973. This made it necessary for Japanese households to save on their own to prepare for their life after retirement.

(3) The High Growth Rate of Income: The high growth rate of income during the high-growth era from the 1950s to the early 1970s undoubtedly helped raise Japan's household saving rate. When income grows rapidly and/or unexpectedly, households often cannot adjust their living standards and consumption patterns at the same pace, and as a result, saving (the difference between income and consumption) tends to increase, at least temporarily.

(4) The Low Level of Household Wealth Holdings: Household wealth holdings were very low in Japan just after the Second World War because the war destroyed much of Japan's housing stock and the post-war hyperinflation reduced the real value of financial assets. Japanese households presumably saved as much as they did in part to restore their wealth holdings to desired levels.

(5) The Unavailability of Consumer Credit: Consumer credit was not readily available in Japan until recently, and thus Japanese households found it necessary to save in advance of purchases of such big-ticket items as housing, automobiles, furniture, and electrical appliances. Moreover, the paucity of credit also increased the need for precautionary saving because Japanese households knew that they would not be able to borrow in times of emergency.

(6) The Bonus System of Compensation: Japan's bonus system of compensation, whereby a large chunk of employee compensation is paid in the form of semi-annual lump-sum bonuses, is often said to have encouraged, or at least facilitated, saving (see, for example, Ishikawa and Ueda (1984)).

(7) Tax Breaks for Saving: The Japanese government introduced many tax breaks for saving such as the *maruyū* system (the tax-exempt system for small savings whereby the interest income on bank and postal deposits and on government bonds was tax-exempt, up to a limit), and these tax breaks for saving may have induced Japanese households to save more than they would have otherwise.

(8) Saving Promotion Activities: The Japanese Government and the quasi-governmental Central Council for Savings Promotion engaged in a variety of saving promotion activities such as the preparation and distribution of magazines, statistical handbooks, booklets, leaflets, posters, films, household financial ledgers, and money boxes, the appointment of private citizens as saving promotion leaders, etc.,

during much of the post-war period, and Garon (1997, Chapter 5) has argued that these saving promotion activities helped to raise Japan's household saving rate.

I have thus far discussed the factors that caused Japan's household saving rate to be so high in the past, but I now discuss why Japan's household saving rate has shown a downward trend since the mid-1970s. My thesis is that Japan's household saving rate has declined since the mid-1970s because the factors that caused Japan's household saving rate to be high until the mid-1970s gradually became less applicable after the mid-1970s.

(1) Japan's population is ageing at an unprecedented rate, with the share of the population aged 65 or older to the total population rising from 7.9 per cent (lowest among the OECD member countries at the time) in 1975 to 17.2 per cent (third place among the OECD member countries) in 2000 (see Table 2) (see Figure 3 for trends over time in the age structure of Japan's population.)

(2) Public old-age pension benefits were dramatically improved in 1973, and a public long-term care insurance program was introduced in 2000.

(3) Double-digit rates of economic growth ended in the early 1970s, and income growth rates have been low in recent years, especially in the 1990s.

(4) The wealth holdings of Japanese households increased rapidly as a result of their high saving rates, and by 1990, the ratio of household wealth holdings to household disposable income in Japan was by far the highest among the Group of 7 (G7) countries (Canada, France, Germany, Italy, Japan, the United States, and the United Kingdom) (see Horioka (2006a), Table 5.3).

(5) Consumer credit has become more and more available over time, and by 1990, the ratio of household liabilities outstanding to household disposable income in Japan was by far the highest among the G7 countries (see Horioka (2006a), Table 5.3).

(6) According to the Basic Survey on Wage Structure (*Chingin Kōzō Kihon Tōkei Chōsa*), conducted annually by the Ministry of Health, Labour and Welfare, there has been a long-term decline in the ratio of bonus income to regular employee compensation since 1975: the ratio of "average annual special cash earnings" to "average monthly scheduled cash earnings" showed an upward trend until 1975, peaking at 3.92, but has shown a downward trend since then (except for a temporary increase during the 1979-92 period when economic conditions were favourable), falling to 3.00 by 2005.

(7) Most tax breaks for saving including the aforementioned *maruyū* system were abolished (except for the elderly) in 1988.

(8) Government saving promotion activities have been scaled back, and the Central Council for Savings Promotion was renamed the Central Council for Savings

Information in 1987 (and renamed the Central Council for Financial Services Information in 2001), gradually shifting from the active encouragement of saving to providing consumers with information on the array of financial services available and helping them with life planning.

Thus, virtually all of the factors that caused Japan's household saving rate to be high have weakened over time, and this can explain why Japan's household saving rate has declined so sharply since the mid-1970s.

4. Future Trends in Japan's Household Saving Rate

In this section, I speculate about future trends in Japan's household saving rate. In my opinion, the most important factor determining future trends in Japan's household saving rate will be the rapid ageing of her population. Japan's population is ageing at the fastest rate in human history and has already become virtually the most aged in the world. As Table 2 shows, the share of the population aged 65 or older in the total population in Japan is projected to increase from 17.2 per cent in 2000 to 28.9 per cent in 2025, rising from third to first place among the OECD member countries). This will cause her household saving rate to continue its rapid decline if the life-cycle hypothesis, which assumes that the elderly finance their living expenses during retirement by drawing down their previously accumulated savings, is valid, and Horioka (1993, 2000, 2002, and 2006b) argues that it is. Indeed, a number of authors, myself included, have projected that the rapid ageing of Japan's population will cause Japan's household saving rate to decline to zero or even negative levels by around 2010 (see Horioka (1989, 1991); for a useful survey, see Horioka (1992)).

I should note, however, that the discussion thus far has focused exclusively on the impact of the ageing of the population on the household saving rate. The other factors that caused Japan's household saving rate to be high during most of the post-war period will continue weakening, and this will cause Japan's household saving rate to decline even more sharply.

For example, the growth rate of income can be expected to recover somewhat as the economy recovers but is very unlikely to return to the levels of the high-growth period; the ratio of bonus income to regular employee compensation shows no signs of recovering; the special tax breaks on capital gains on stock sales and dividend income, which were introduced in 2003, have been abolished; and saving promotion activities have already been discontinued.

However, there are at least two factors working in the other direction. First, land and equity prices have declined sharply since the 1990s, and this has greatly reduced

the value of household asset holdings and created an incentive for households to increase their saving in order to make up for the loss in the value of their assets. Second, the rapid ageing of the population, combined with the pay-as-you-go nature of the public pension system, is causing the finances of Japan's public pension system to deteriorate, which in turn is necessitating cuts in benefits, increases in contribution rates, increases in the pensionable age, and considerable uncertainty about the future of the system. This is likely to cause Japanese households to save more for life during retirement, thereby putting upward pressure on Japan's household saving rate.

In my opinion, however, the factors putting downward pressure on Japan's household saving rate far exceed the factors putting upward pressure thereon, and thus there is no doubt that Japan's household saving rate will continue to decline sharply in the coming years.

5. Implications for Japan's Current Account Balance and for Policymakers

In this paper, I showed that Japan's household saving rate was high until the mid-1970s but has been declining sharply since then and is no longer high in either absolute or relative terms, I then explored the causes of these trends, and based on this analysis, I projected future trends in Japan's household saving rate, arguing that it can be expected to decline even further due to the rapid aging of her population and other factors.

Before concluding, I would like to consider the implications of my findings for households as well as for the economy as a whole.

First of all, I would like to consider the implications of my findings for households. A household saving rate of zero means that household assets do not increase or decrease, and a negative household saving rate means that household assets decline. However, Japanese households have shown one of the highest asset-to-income ratios among the Group of Seven countries, and thus household assets in Japan will not hit bottom even if a zero or negative household saving rate continues for some time.

Next, I would like to consider the implications of my findings for the economy as a whole. Saving is indispensable in any economy because it provides the funds for financing investment in plant and equipment, housing, social infrastructure, etc. Investment cannot be done without a corresponding amount of saving from somewhere—either from the same sector, from another sector of the same economy, or from abroad.

In the case of Japan, the household sector saved at high levels throughout most of the post-war period, and this abundant saving of the household sector was used in a

variety of different ways. For example, during the high-growth period of the 1950s, 1960s, and early 1970s, household saving was used primarily to finance corporate investment in plant and equipment, and hence was instrumental in increasing the productive capacity of the economy and in achieving rapid economic growth. Since the 1970s, however, a considerable share of household saving has been used to finance investment in housing and social infrastructure, thereby contributing toward improving the quality of life of the Japanese people and toward facilitating economic growth. And since the 1980s, a considerable share of household saving has been lent abroad (either directly or indirectly via financial intermediaries), thereby helping to alleviate saving shortages in the United States and other countries but at the same time leading to enormous capital account deficits that had to be offset by correspondingly large trade and current account surpluses, which in turn led to trade and economic frictions with the United States and other countries.. This is corroborated by Figure 3, which shows trends over time in Japan's overall IS balance (the excess of saving over investment in the economy as a whole), which will be roughly equal to Japan's current account surplus. As can be seen from this figure, Japan's IS balance has been positive without exception since 1981 and was as high as 3.5% of GDP in 1986 and 3.3% of GDP as recently as 2005.

Thus, Japan's abundant supply of household saving has played an important role throughout the post-war period, but the nature of its role has changed over time. Since the abundant supply of household saving in Japan has played such an important role in the past, one might be tempted to conclude that the sharp decline in Japan's household saving rate that began in the mid-1970s and that is projected to continue in the future as well will lead to a severe saving shortage, spelling disaster for the Japanese economy, if not the world economy. For example, other factors being constant, one would expect the sharp decline in household saving to cause a decline in Japan's capital outflows and a corresponding decline in Japan's current account surpluses.

However, what happens to capital outflows and the current account surplus depends not only on trends in household saving but also on trends in household investment and on trends in saving and investment in the other sectors of the economy such as the government and business sectors. In recent years, there has been a renewed increase in Japan's current account surpluses despite the sharp decline in household saving, and during the 2001-07 period, it increased by 1.9 percentage points (from 1.0% to 2.9% of GDP). Why did this occur?

There are two possible reasons for this phenomenon. One possibility is that the saving of other sectors of the economy increased by more than household saving

declined, and the other possibility is that investment in the economy as a whole declined by more than household saving declined.

Let's explore both possibilities using Japan's National Accounts data. During the 2001-07 period, household saving declined sharply as a ratio of GDP and government saving also declined somewhat. However, corporate saving increased by a full 1.8 percentage points (from 5.2% to 7.0% of GDP) and this more than offset the declines in household and government saving, causing saving in the economy as a whole to increase 0.7 percentage points (from 5.6% to 6.3% of GDP). Apparently, Japanese corporations became more conservative after the financial crisis and tried to reduce their reliance on external funds. Thus, the first possibility is supported by the facts.

Looking at the second possibility, corporate investment increased by a full 1.8 percentage points (from 3.1% to 4.8% of GDP), but this increase was more than offset by an even sharper decline in government investment, which fell by a full 2.7 percentage points (from 3.1% to 0.4% of GDP). This was presumably due primarily to Prime Minister's Junichiro Koizumi's strenuous efforts to reduce wasteful public works projects. Moreover, household investment also declined somewhat, and as a result, investment in the economy as a whole declined by 1.2 percentage points (from 4.6% to 3.4% of GDP). Thus, both possibilities are borne out by the facts, but the second possibility is of greater importance.

In other words, Japan's overall IS balance increased substantially after 2001 despite the sharp fall in household saving because of the decline in government investment and the increase in corporate saving, especially the former.

What, then, does the future hold? Trends in the overall IS balance and in the current account surplus depend on trends in the saving and investment of each sector so they are very hard to project.

Looking first at trends in saving, Japan's population is aging at the fastest rate in human history, and this trend is projected to continue. Thus, the decline in Japan's household saving rate can be expected to continue. Trends in corporate saving are difficult to project, but since corporate saving is already at record levels, it is hard to believe that it will increase even further. As for trends in government saving, Prime Minister Yukio Hatoyama has pledged to introduce a number of new programs such as child subsidies but has pledged not to increase taxes for the time being. He plans to finance these new programs by eliminating waste in government, but it is hard to believe that he can accomplish this without some increase in government deficits (i.e., some decrease in government saving). Thus, it seems almost certain that saving will decline in the economy as a whole

Turning to trends in investment, corporate investment in plant and equipment and household investment in housing will presumably increase as the economy recovers. Prime Minister Hatoyama has pledged to reduce wasteful public works projects, but government investment is already at record low levels so it is difficult to believe that it can be reduced much further. Thus, it appears almost certain that investment will increase in the economy as a whole.

And if saving declines and investment increases in the economy as a whole, the IS balance and the current account surplus will decline for both reasons. Thus, the increase in the IS balance and the current account surplus since 2001 is a temporary phenomenon and will reverse itself soon, and the current account balance may even go into deficit.

In fact, the latest data show that Japan's current account surplus fell by one-third in 2008 compared to the previous year, and it fell even further in the first half of 2009. Thus, the decline in Japan's IS balance and current account surplus has already begun!

And if Japan's trade surplus declines as one manifestation of the decline in Japan's current account surplus, Japanese exports will decline, Japan's export industries will suffer, and this in turn may hurl the Japanese economy back into recession and cause the employment situation to deteriorate even more.

Why does a decline in the IS balance cause a decline in the trade balance and in exports? The reason is that a decline in the IS balance implies a reduction in the amount of saving provided to other countries and thus less need to convert yen into foreign currencies. This will reduce the demand for foreign currencies and cause the yen to strengthen relative to other currencies, which in turn will make Japanese exports more expensive abroad and foreign imports cheaper in Japan. Moreover, Prime Minister Hatoyama has shown some hesitancy about intervening to weaken the yen, which makes this scenario all the more likely to occur. And if it does occur, there will be cries for help from export industries, labor unions, and the populace as a whole.

There are only two ways to prevent this scenario from materializing—increasing the saving of the economy as a whole or reducing the investment of the economy as a whole. Government saving and investment are the easiest for the government to influence since it determine them directly, but as argued above, it will be difficult to reduce government investment much further. Thus, the most realistic option is to increase government saving.

Moreover, Japan has the highest government debt to GDP ratio of any developed country, and hence there is an urgent need to reconstruct the finances of the Japanese government. Thus, increasing government saving will prevent a further decline in

Japan's IS balance and current account surpluses, and at the same time, make it possible for the government to reconstruct its finances. Thus, two birds can be killed with one stone.

Increasing government saving means reducing government deficits, and the only ways to do this are to reduce government expenditures or increase taxes. But both options may short circuit the incipient recovery of the economy and hurl it economy back into recession if they are done before the economy recovers fully. Thus, the government should proceed cautiously with fiscal reconstruction and give priority to stimulating the economy in the short run. This is precisely the view of Prime Minister Hatoyama, and he should be commended for getting his priorities right.

In any case, the new administration faces the formidable task of simultaneously achieving economic recovery and fiscal reconstruction, and thus its competence will be tested right from the start. For the sake of the Japanese and world economies, I hope it succeeds.

6. Summary and Conclusion

In this paper, I examined past and future trends in Japan's household saving rate, the determinants of these trends, and the implications thereof for Japan's current account balance.

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References

Dekle, Robert (1990), "Do the Japanese Elderly Reduce Their Total Wealth? A New Look With Different Data," *Journal of the Japanese and International Economies*, vol. 4, no. 3 (September), pp. 309-317.

Garon, Sheldon (1997), *Molding Japanese Minds: The State in Everyday Life*. Princeton, N.J.: Princeton University Press.

Hayashi, Fumio (1986), "Why Is Japan's Saving Rate So Apparently High?" *NBER Macroeconomics Annual 1986*, vol. 1, pp. 147-210.

_____ (1997), "A Review of Recent Literature on Japanese Saving," in Fumio Hayashi, *Understanding Saving: Evidence from the United States and Japan* (Cambridge, Massachusetts: MIT Press), pp. 289-330.

_____; Ando, Albert; and Ferris, Richard (1988), "Life Cycle and Bequest Savings: A Study of Japanese and U.S. Households Based on Data from the 1984 NSFIE and the 1983 Survey of Consumer Finances," *Journal of the Japanese and International Economies*, vol. 2, no. 4 (December), pp. 450-491.

Horioka, Charles Yuji (1984), "The Applicability of the Life-Cycle Hypothesis of Saving to Japan," *Kyoto University Economic Review*, vol. 54, no. 2 (October), pp. 31-56.

_____ (1989), "Why Is Japan's Private Saving Rate So High?" in Ryuzo Sato and Takashi Negishi, eds., *Developments in Japanese Economics* (Tokyo: Academic Press/Harcourt Brace Jovanovich, Publishers), pp. 145-178.

_____ (1991), "The Determinants of Japan's Saving Rate: The Impact of the Age Structure of the Population and Other Factors," *Economic Studies Quarterly* vol. 42, no. 3 (September) [now called *Japanese Economic Review*], pp. 237–253.

_____ (1992), "Future Trends in Japan's Saving Rate and the Implications Thereof for Japan's External Imbalance," *Japan and the World Economy* vol. 3, no. 4 (April), pp. 307–330.

_____ (1993), "Saving in Japan," in Arnold Heertje, ed., *World Savings: An International Survey* (Oxford, UK, and Cambridge, USA: Blackwell Publishers), pp. 238-278.

_____ (1997), "A Cointegration Analysis of the Impact of the Age Structure of the Population on the Household Saving Rate in Japan," *Review of Economics and Statistics*, vol. 79, no. 3 (August), pp. 511-516.

_____ (2001), "Japan's Public Pension System in the Twenty-first Century," in Magnus Blomstrom, Byron Gangnes, and Sumner LaCroix, eds., *Japan's New Economy: Continuity and Change in the Twenty-first Century* (New York: Oxford University Press), pp. 99-119.

_____ (2002), "Are the Japanese Selfish, Altruistic, or Dynastic?" *Japanese Economic Review*, vol. 53, no. 1 (March), pp. 26-54 (the 2001 JEA-Nakahara Prize Lecture).

_____ (2006a), "Are the Japanese Unique? An Analysis of Consumption and Saving Behavior in Japan," in Sheldon Garon and Patricia Maclachlan, eds., *The Ambivalent Consumer: Questioning Consumption in East Asia and the West* (Ithaca, New York: Cornell University Press), pp. 113–136.

_____ (2006b), "Do the Elderly Dissave in Japan?" in Lawrence R. Klein (ed.), *Long-Run Growth and Short-Run Stabilization: Essays in Memory of Albert Ando* (Cheltenham, UK, and Northampton, MA, USA: Edward Elgar), pp. 129-136.

_____; Fujisaki, Hideki; Watanabe, Wako; and Kouno, Takatsugu (2000), "Are Americans More Altruistic than the Japanese? A U.S.-Japan Comparison of Saving and Bequest Motives," *International Economic Journal*, vol. 14, no. 1 (Spring), pp. 1-31.

_____; Kasuga, Norihiro; Yamazaki, Katsuyo; and Watanabe, Wako (1996), "Do the Aged Dissave in Japan? Evidence from Micro Data," *Journal of the Japanese and International Economies*, vol.10, no. 3 (September), pp. 295-311.

_____ and Okui, Megumi (1999), "A U.S.-Japan Comparison of the

Importance and Determinants of Retirement Saving," *Economics Letters*, vol. 65, no. 3 (December), pp. 365-371.

_____; Suzuki, Wataru; and Hatta, Tatsuo (2007), "Aging, Saving and Public Pensions," *Asian Economic Policy Review*, vol. 2, no. 2, pp. 303-319.

_____ and Watanabe, Wako (1997), "Why Do People Save? A Micro-Analysis of Motives for Household Saving in Japan," *Economic Journal*, vol. 107, no. 442 (May), pp. 537-552.

_____; Yamashita, Koji; Nishikawa, Masashi; and Iwamoto, Shiho (2002), "On the Importance, Nature, and Impact of Bequests in Japan," mimeo., Institute of Social and Economic Research, Osaka University.

_____, and Yin, Ting (2009), "The Impact of the Age Structure of the Population on the Household Saving Rate in Japan," mimeo., Institute of Social and Economic Research, Osaka University, Ibaraki, Osaka, Japan.

Ishikawa, Tsuneo (1988), "Saving and Labor Supply Behavior of Aged Households in Japan," *Journal of the Japanese and International Economies*, vol. 2, no. 4 (December), pp. 417-449.

Ishikawa, Tsuneo, and Ueda, Kazuo (1984), "The Bonus Payment System and Japanese Personal Saving," in Masahiko Aoki, ed., *The Economic Analysis of the Japanese Firm* (Amsterdam: North-Holland), pp. 133–192.

Kan, Mari, and Horioka, Charles Yuji (2009), "Chochiku/Shisan (Saving/Wealth)," in Yasuyoshi Oouchi and Hiroko Akiyama, eds., *Shin Rounen-gaku (New Gerontology)*, 3rd edition (Tokyo: University of Tokyo Press), forthcoming.

Modigliani, Franco and Brumberg, Richard (1955), "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data," in Kenneth K. Kurihara, ed., *Post-Keynesian Economics* (New Brunswick, N.J.: Rutgers University Press), pp. 388–436.

Movshuk, Oleksandr (2009), "Household Savings through Life Stages: Evidence from Micro Data," mimeo., Faculty of Economics, Toyama University, Toyama, Japan.

Statistics Bureau, Ministry of Internal Affairs and Communications, Government of Japan (2009), *Japan Statistical Handbook*, 2009 edition (Tokyo: Japan Statistical Association) and earlier editions of the same.

Weil, David N. (1994), "The Saving of the Elderly in Micro and Macro Data," *Quarterly Journal of Economics*, vol. 109, no. 1 (February), pp. 55-81.

Figure 1

Trends in Japan's Household Saving Rate, 1955-2007

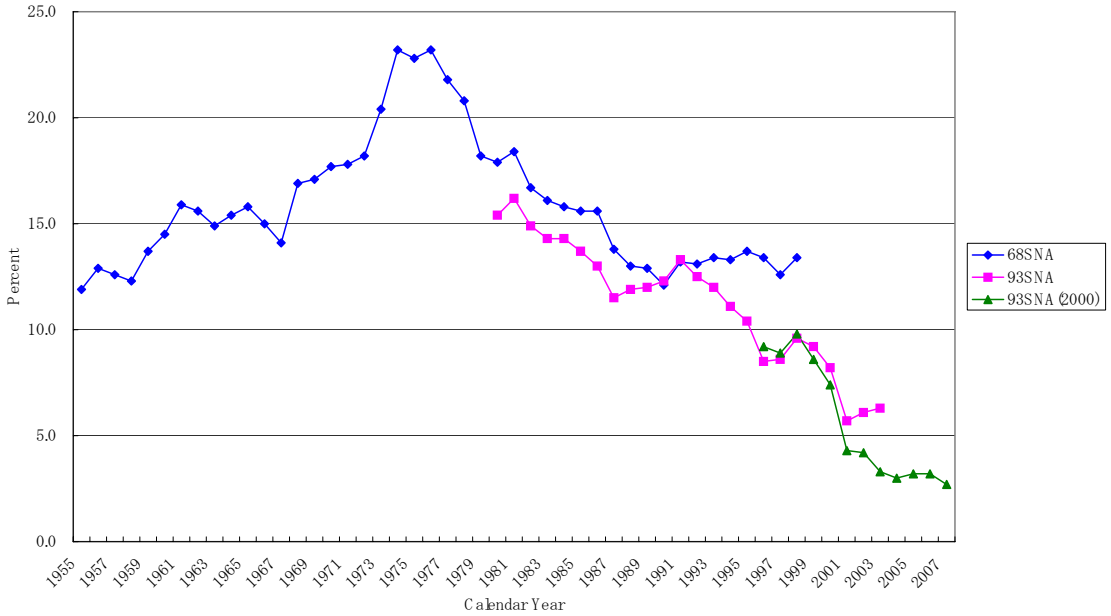

Table 1: Net Household Saving Rates of Selected OECD Countries, 1985-2005										
	1985		1990		1995		2000		2005	
Australia	10.8	7	8.5	12	6.7	18	2.8	19	-2.6	22
Austria	10.5	8	13.3	6	10.9	11	8.4	8T	9.5	6T
*Belgium	11.1	6	9.2	11	13.2	5	9.8	5	7.8	10
Canada	15.8	3	13.0	7	9.2	13	4.7	15	-0.2	18
Czech Rep.	na		na		9.0	14	3.6	16	3.3	16
*Denmark	na		1.3	19	0.9	22	-1.3	21T	-0.6	21
Finland	3.4	14	3.6	16	4.7	19	-1.3	21T	-0.5	20
France	8.9	10	9.3	10	12.7	6	11.4	3	11.6	3
Germany	12.1	5	13.9	4T	11.0	10	9.2	7	10.7	4
Hungary	na		na		15.6	3	16.0	1	17.7	1
Ireland	na		6.1	13	8.5	16	9.6	6	10.9	5
Italy	21.5	1	23.8	1	17.7	1	8.4	8T	9.5	6T
Japan	16.5	2	13.9	4T	11.9	7	8.3	10	2.4	17
South Korea	14.8	4	22.5	2	17.5	2	10.7	4	4.3	14
Netherlands	5.6	13	17.7	3	14.6	4	7.0	12T	5.7	13
New Zealand	1.3	16	0.7	20	-3.8	23	-4.1	23	-7.1	23
Norway	-3.3	17	2.2	18	4.6	20T	5.2	14	11.8	2
*Portugal	na		na		10.1	12	7.0	12T	6.9	12
*Spain	7.8	11	9.8	8	11.5	9	7.8	11	7.3	11
Sweden	2.2	15	3.2	17	9.1	15	3.2	18	7.9	9
Switzerland	na		9.6	9	11.6	8	11.8	2	8.8	8
*United Kingdom	6.9	12	5.6	15	7.0	17	3.5	17	3.5	15
United States	9.2	9	7.0	14	4.6	20T	2.3	20	-0.4	19
OECD Mean	9.1		9.7		9.5		6.3		5.6	

Table 2: Share of the Aged Population in Selected OECD Countries, 1975-2025						
Country	1975		2000		2025	
Australia	8.7	19T	12.3	19T	18.6	19
Austria	14.9	2	15.6	10T	24.3	7
Belgium	13.9	5	17.0	4T	23.7	8
Canada	8.5	21	12.6	18	20.7	17T
Czech Rep.	12.9	9	13.8	16	23.1	10
Denmark	13.4	8	15.0	13	22.5	11
Finland	10.6	15	14.9	14	25.2	5
France	13.5	7	16.0	7T	22.2	12
Germany	14.8	3	16.4	6	24.6	6
Hungary	12.6	10T	14.6	15	21.2	16
Ireland	11.0	13	11.3	22	16.3	23
Italy	12.0	12	18.1	1	25.7	3
Japan	7.9	22	17.2	3	28.9	1
South Korea	3.6	23	7.1	23	16.9	22
Netherlands	10.8	14	13.6	17	21.9	13T
New Zealand	8.7	19T	11.7	21	18.5	20T
Norway	13.7	6	15.4	12	21.8	15
Portugal	9.9	18	15.6	10T	20.7	17T
Spain	10.0	17	17.0	4T	23.6	9
Sweden	15.1	1	17.4	2	25.4	4
Switzerland	12.6	10T	16.0	7T	27.1	2
United Kingdom	14.0	4	15.8	9	21.9	13T
United States	10.5	16	12.3	19T	18.5	20T
OECD Mean	12.6		16.0		24.4	

Figure 2

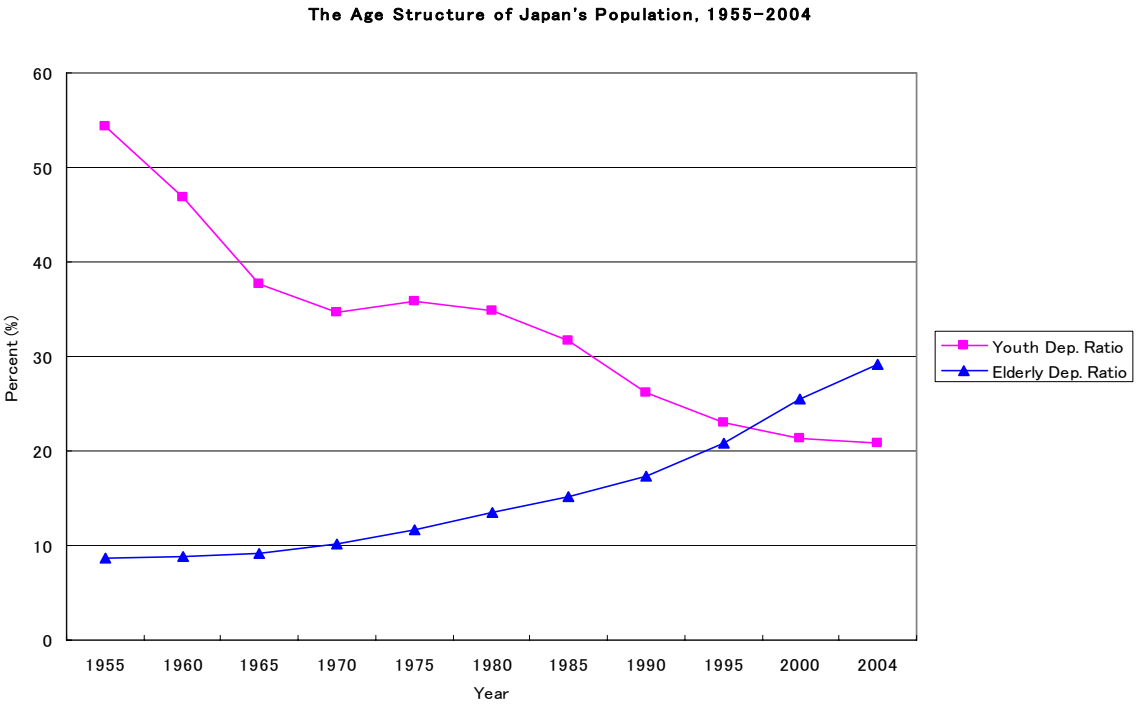
The Age Structure of Japan's Population, 1955-2004
60
50
40
30
20
10
0
Percent (%)
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2004
Year
Youth Dep. Ratio
Elderly Dep. Ratio

Figure 3: Trends over Time in Saving, Investment, and IS Balances in Japan

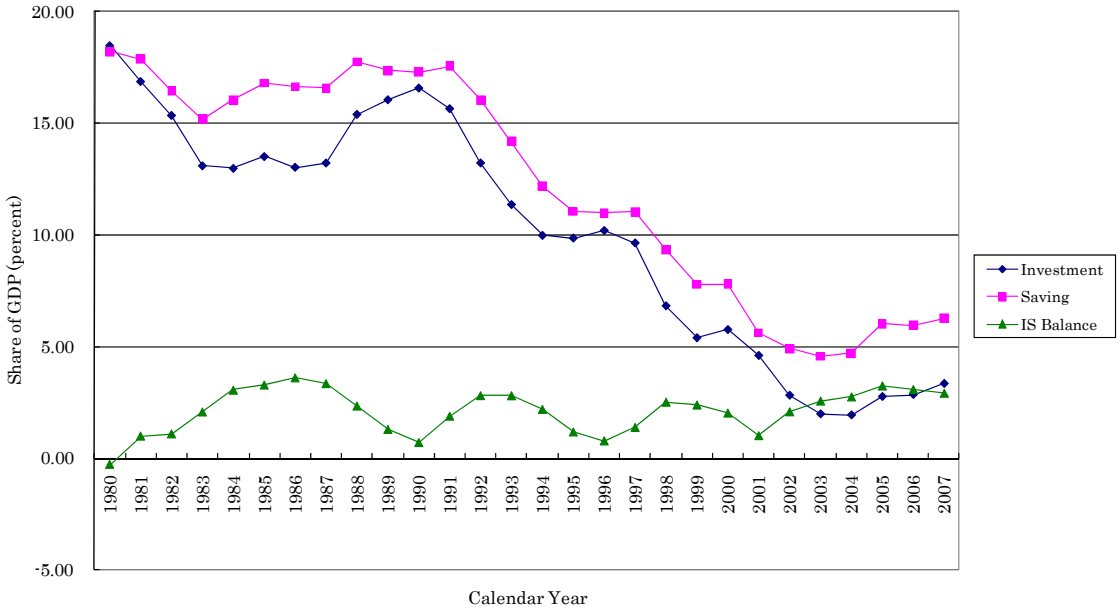

Table 3: Changes in Sectoral Saving, Investment, and IS Balances			
	2001	2007	Change between 2001 and 2007
		Saving	
Business sector	5.17	6.98	1.81
Government sector	-2.64	-2.91	-0.27
Household sector	3.10	2.22	-0.88
Economy as a whole	5.63	6.28	0.66
		Investment	
Business sector	3.11	4.93	1.82
Government sector	3.07	0.35	-2.72
Household sector	-1.57	-1.93	-0.36
Economy as a whole	4.60	3.35	-1.26
		IS Balance	
Business sector	2.06	2.05	-0.01
Government sector	-5.71	-3.26	2.45
Household sector	4.67	4.15	-0.52
Economy as a whole	1.02	2.93	1.91