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**Concerns for the Future and Generational
Consumption Behavior**

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Concerns for the Future and Generational Consumption Behavior

Summary

1. Consumption is the largest component of demand, accounting for some 60% of Japan's GDP, and it closely bears upon the welfare of the nation. While household financial assets remain at a high level, growth in consumption has stalled further since the late 1990s, leading some to argue that consumption is saturated. This paper explores the reasons behind recent sluggish consumption by examining consumption and/or saving behavior among different age groups and generational cohorts.

2. According to the Family Income and Expenditure Survey, consumer spending per household has in nominal terms been in continuous decline since 1998. Furthermore, real consumer spending excluding the influence of price changes has dropped steadily since 1993 except in 1996, when the impending hike in consumption tax sparked a last-minute rush to buy. Growth in real consumption per capita on a GDP basis has similarly been losing steam since the beginning of the 1990s.

The percentage of respondents to public opinion surveys who state that their standard of living has slipped has in recent years climbed in step with the slump in consumption. This trend affects all age groups with the exception of seniors.

3. The percentage of the dependent population has been on the rise since the first half of the 1990s as the country ages. It was believed that this trend, in combination with the slowdown in economic growth, would lower saving rates. Yet the rate remains high even today.

The relationship between an aging population and the saving rate can be seen by focusing on age differences among heads of households. The increase in the age of heads of households between 1989 and 1999 pushed up the saving rate slightly by increasing the proportion of heads of household in their 50s, the age group with the highest saving rate. But the rise in sav-

ing rates among heads of households in their forties or younger is the primary factor driving up the overall rate.

4. The percentage of individuals who have concerns about post-retirement life showed a secular increase in the 1990s. Concern has increased particularly among the young. In surveys of why people save, "selfish" motives such as for retirement or to pay for durable goods or trips gained greater weight during the 1990s. The proportion of people who save for their children is down, in part because of lower birth rates, while the percentage of those who save to leave behind a bequest has been consistently low.

People thus are increasingly required to save for their own future life. As for overall assets per capita, while the value of non-financial assets declined over the course of the 1990s, the drop in net assets has been small thanks to growth in financial assets. Once government finances are factored in, however, the picture worsens.

5. In terms of saving profile by age group, middle-aged and younger people today have a saving rate about 10% higher than their parents' generation. As for income profile, secular income growth has tapered off more and more of late.

Using these data, we estimate the effect of generational cohort on consumer behavior after excluding such factors as observed age variations among different generations and increased life expectancy. The results show that: (1) lower income growth rates lower the propensity to consume compared to older generations, and (2) the younger the generation, the lower the propensity to consume. The latter effect is thought to reflect the deteriorating prospects for future lifetime income, which cannot be accounted for by realized income or employment.

6. According to government estimates, net lifetime Welfare Pension benefits (benefits minus contributions) decline the younger the generation and this is proportional to the generational effect we obtained. Nonetheless, the gen-

eration gap has not dramatically changed compared to the 1994 estimates, and our estimates of generational effects are stable when the sampling period is extended. Since questionnaires reveal that confidence in the public pension system was lost in the 1990s, further investigation is necessary to link this change in confidence in the public pension system to consumer behavior.

The drop in expected income caused by the deteriorating employment situation as calculated for instances in which an individual becomes unemployed or has to find a new job due to involuntary severance increased to more than 1% in the 1990s, even once employment insurance coverage is factored in. Involuntary severance is commoner among the young, and income conditions upon finding a new job are worsening for all age groups. Thus lifetime incomes will tend to decline more among younger age groups, which still have many working years ahead of them.

7. Senior citizens account for a higher percentage of the balance of total household savings than they did two decades ago. That holds particularly true of securities, which constitute risk assets. Nominal net savings per household (savings minus liabilities) remain unchanged compared to twenty years ago in the case of heads of households in their forties or younger, but seniors' savings have displayed a general tendency

to increase. While it should be noted that discrepancies within age groups increase with age, the present seniors generation still has great potential spending power, even taking into account increased life expectancy.

8. In conclusion, there is a definite pattern of consumer behavior among heads of households depending on age group. Those who are younger or middle-aged compensate for lowered future income prospects by increasing their saving rate. Meanwhile today's seniors, who experienced dramatic income gains during Japan's high-growth phase, remain uneager to spend despite having considerable savings at their disposal.

A cyclical recovery in income and employment may to some extent fuel an increase in spending among younger and middle-aged consumers. But any serious surge in consumer spending will require steady improvements in lifetime income prospects; hence government action to eliminate uncertainties about the long-term future is essential. Stimulating seniors' willingness to spend should also help to improve the outlook for the middle-aged and younger generation by having a positive effect on the economy.

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Introduction¹

Consumption closely bears upon the welfare of the nation, and maximizing consumption may be regarded as the ultimate goal of economic management. Accounting for some 60% of GDP, consumption has climbed in step with overall economic growth, but since the late 1990s it has noticeably lost steam.

One argument takes this as evidence that consumption is saturated. Essential living expenses have come to account for a smaller percentage of total outlays thanks to increased purchasing power as economic growth pushes down the Engel's coefficient. At the same time, income-sensitive selective consumption expenditures, which are typically directed to high-value durables and services, have grown proportionately.² The consumption-is-saturated school of thought attributes the slump in consumption to the fact that existing products have achieved widespread ownership and become run-of-the-mill, while alluring new goods and services to replace them are lacking. According to this view, satisfied consumers do not expect existing goods and services to increase their wellbeing; therefore the slump in consumption is not a source of serious concern.

Stalled growth in incomes and decreased propensity to consume are two basic factors behind the recent slump in consumption. The former factor, in other words stalled income growth, does not on its own compel one to conclude that consumption is saturated, as the Economic Survey of Japan for 1992 points out.³ Moreover, propensity to consume was actually on the rise at that time and showing indications

that consumers wanted to maintain a certain level of consumption, which was evidence against the saturation. This evening out of consumption levels, with propensity to consume moving in the opposite direction to fluctuations in income, is known as the ratchet effect of consumption. But in recent years the ratchet effect has faded as propensity to consume has followed the same path as incomes by first tapering off and then going into decline.⁴ Today, with consumers voluntarily cutting spending despite their considerable financial assets, the consumption-is-saturated argument may at first sight seem increasingly justified.

However, the argument needs to be considered carefully, since it contradicts the assumption of local non-satiation, the starting point for economic analysis of consumers. This asserts that there is always some additional expenditure, no matter how small, that can improve wellbeing, and places no restriction whatsoever on consumption. Most claims about saturated consumption these days cite widely owned goods in support, but in order to contend that consumption in general is saturated, one must demonstrate that demand for goods and services is satiated across the board. However, the Family Income and Expenditure Survey (FIES) shows that over the long term spending on certain goods and services has actually increased, which suggests merely a change in content of demand. And few would dispute that, were limitless funds available, expenditures on cars, vacations, and cottages would rise. Moreover, when consumers are saving for future purchase of a home or other major purchase, or when they are awaiting the appearance of a new or groundbreaking product or service, they may voluntarily cut back on current expenditures, but that does not indicate a loss of appetite for spending.

The last example involves distribution of consumption over different points in time, a pattern that the life-cycle hypothesis extends

¹ This report was originally published in Japanese as "Chosa" No.46 in October 2002. Translation is by the Japan Translation Center, Ltd. with cooperation of the author.

² The Family Income and Expenditure Survey defines selective consumption items based on elasticity to the total consumption. Two recent analyses focusing on the growing proportion of selective consumption are Jindoh and Yamamoto (1999) and Ogata and Ishikawa (2001).

³ "Saturation should rather be used to explain why consumption fails to grow when incomes are on the rise. Of late consumption has been in the doldrums as growth in disposable incomes languishes; hence there is no need to argue that consumption is saturated." (Economic Planning Agency, 1992, p. 390)

⁴ The ratchet effect works as a matter of course over extremely short periods, as when expenditure of income obtained on payday is spread out over a whole month. However, the term normally refers to the smoothing of consumption levels in the face of fluctuations of income over the course of a multiyear economic cycle.

over a lifetime. According to this thesis, the present dip in both incomes and consumption can be explained in light of the worsening outlook for lifetime earnings. Although the ratchet effect works against temporary fluctuations in income, if people conclude that the current deterioration in income situation will continue indefinitely, they will tend to spend less as they save more for the future. This paper attempts to explain recent trends in consumption in light of this change in prospects for lifetime income.

However, it has been observed that any analysis predicated on a representative household will suffer numerous limitations. Sometimes it is not appropriate to draw conclusions from a fictionalized, composite model of an average household about actual economic behavior, such as the relationship between abundant financial assets and consumption, fluctuations in saving rates, and the impact of tax changes. Nor can solid indications be obtained about structural changes. In analyzing consumption behavior, therefore, this paper classifies households by age group or generational cohort. One reason for adopting this approach is the growing generation gap in income and employment prospects caused by secular changes in economic climate. A further goal is

to contribute to the debate on the impact of such tools of social redistribution as taxes and social security on different age groups' prospects, which is an issue that is increasingly difficult to ignore.

This paper is organized as follows. Chapter I surveys consumption trends and considers what conclusions can be consistent with fluctuations in saving rates and changing consumer attitudes. Chapter II whittles down the factors behind those consumption trends and to estimate the function of propensity to consume using data for the different cohorts from the FIES. In contrast to previous studies of generational differences in concerns about the future and in consumer behavior,⁵ here synthetic panel data are used, and patterns that can be explicitly accounted for by income and employment are identified; what is left over is each generation's characteristic outlook for lifetime income. The impact on this outlook of employment and public pensions, a form of social redistribution, is then considered. Chapter III reviews generational differences in ownership of assets and offers suggestions on how to stimulate a recovery in consumption as concluding remarks.

⁵ Recent analyses of consumption trends from a generational standpoint include Nakagawa (1999), Suzuki (2001), Higo, Sugou and Kanaya (2001), and Masuda (2001).

I Recent Consumption and Saving Trends

1. Consumption Stagnates

As the figures for consumer spending per household in the Family Income and Expenditure Survey (FIES) shows (Figure 1-1), real consumption has been in continuous decline since 1993 except for a brief upswing during the 1996 recovery. Every category of expenditure has registered a drop with the exception of durables, and spending on services has lost its previous buoyancy in a repetition of the pattern of non-durables (foodstuffs etc.) and semi-durables (clothes, books, etc.). Nominal consumption has been noticeably dull since 1999 as dis-inflation leads to deflation, and dwindling

sales have engendered a mood of recession on the retail floor.

Next, taking 1980 as 100, we examine the individual components of demand that comprise GDP (Figure 1-2). There have been four economic cycles (trough-peak-trough) over the past twenty years. Consumption has been spread out evenly, fluctuating little compared to other components of demand and that portion of GDP equivalent to income. Of the different components, consumption has displayed the third lowest increase after housing investment (which is another household economic activity) and fixed public capital formation. Since it has remained below GDP, it cannot be considered to have driven economic growth; rather, it may be regarded as a form of derivative demand dependent on income.⁶ The stagnation in con-

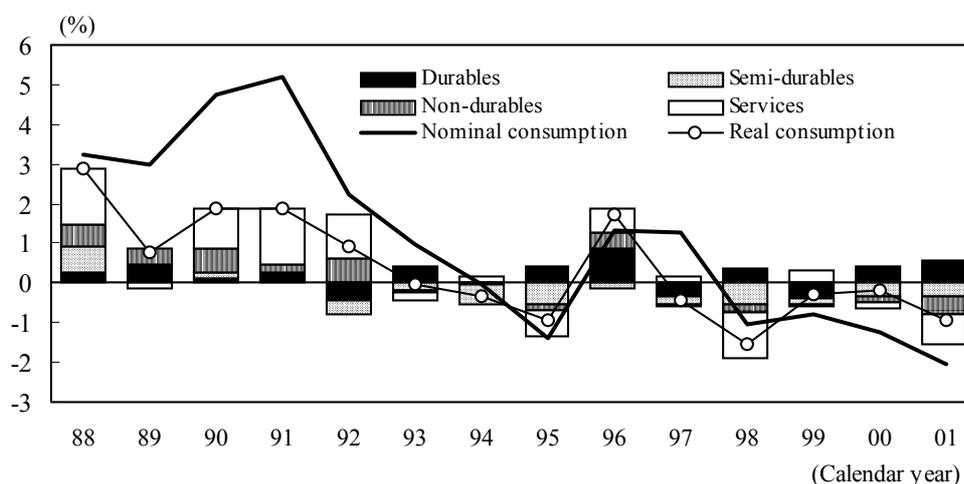


Figure 1-1. Year-on-year Growth in Household Spending

- Notes:*
1. Consumer spending for all households on goods and services excluding allowances, social expenses, and money sent.
 2. The impact of dwindling household size was eliminated as follows. The adjustment factor for number of household members (strictly speaking calculated on the total amount of expenditures including allowances etc., with four-member households equivalent to 100) is released every five years. Since no pattern of change could be identified in the figures for 1990, 1995, and 2000, the average of these was used throughout.

Sources: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Family Income and Expenditure Survey and Consumer Price Index."

⁶ There is a claim that since the (provisional) trough in October 2000 consumption has been robust regardless of the deteriorating employment and income situation. However, consumption fluctuates only slightly anyway; therefore it should be regarded as merely giving the appearance of firmness in contrast to the cyclical dip in other indicators. Here we examine consumption trends from a more long-term viewpoint.

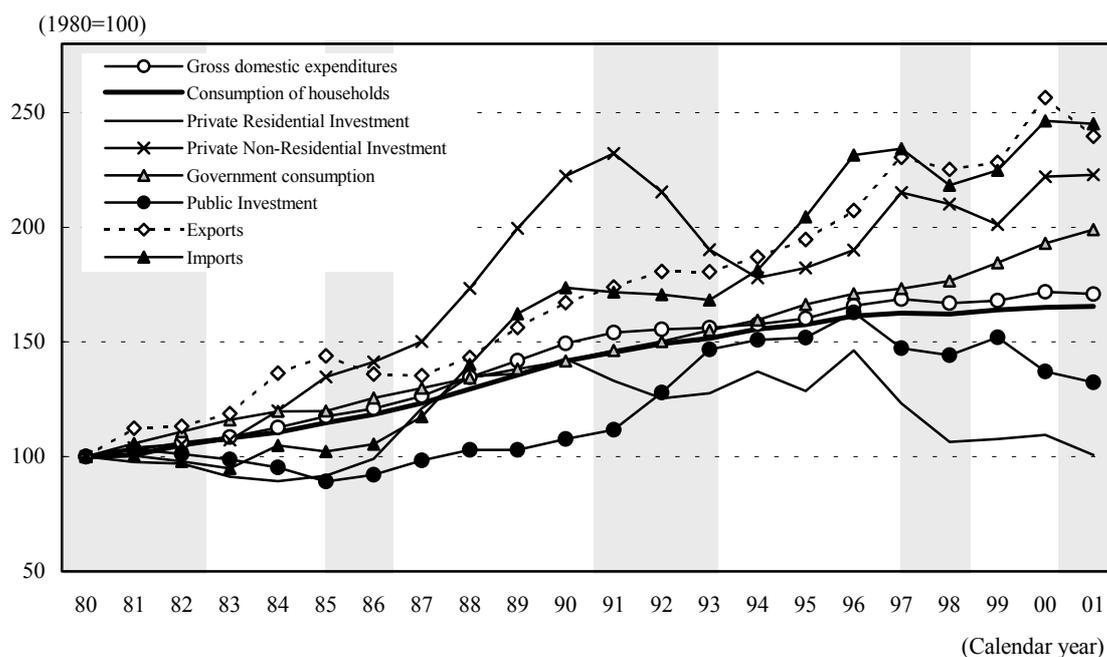


Figure 1-2. Growth in Real GDP by Component of Demand

Note: Hatching indicates periods of recession.

Source: Cabinet Office, “Annual Report on National Accounts.”

sumption is thus serious even when compared to the slump in exports and in corporate capital investment that has provoked concerns on their future growth in recent years.

In the System of National Accounts, consumption expenditures basically comprise economic transactions conducted on the market. Durables are valued according to expenditure thereon. While they account for less than 10% of total consumption expenditures, fluctuations are dramatic due to the impact of product life-cycles and taxation. This practice of valuing durables according to expenditure is far from ideal, since households make purchase decisions based on the user value of what they already own (i.e. the benefits it offers) rather than what they have paid during the recent period.⁷ Therefore we estimated the user values of durables based on the stock series for that category

⁷ Purchase of a durable item involves a one-time outlay on something that will be used for several years. Estimating user value is difficult, and it is impossible to avoid being arbitrary; hence many analyses leave out (semi) durable goods for convenience.

of goods in order to compile a consumption series substituting the new values, and compared it to the original expenditure-based series (Figure 1-3).⁸ User values are equivalent to amount of expenditure as redistributed over the period of use; hence fluctuations tend both to be smaller and to lag behind. According to our calculations, the economic benefit that households derived from using durable goods increased more during the 1990s than the figures for expenditure normally employed would suggest, with the gap between the two gradually widening. However, even when we use this modified consumption series, the stagnation in consumption during the latter half of the 1990s is evident as well.

⁸ We extracted the figures for closing stocks of major consumer durables from the supplementary tables in the Stocks section of the System of National Accounts, then obtained the user values by working out depreciation values. Those numbers were then substituted for the figures for expenditures on durable items. See Nakamura (1999). The service life of durables as calculated by dividing stocks by the depreciation values obtained was somewhat over seven years, which represents a slight prolongation.

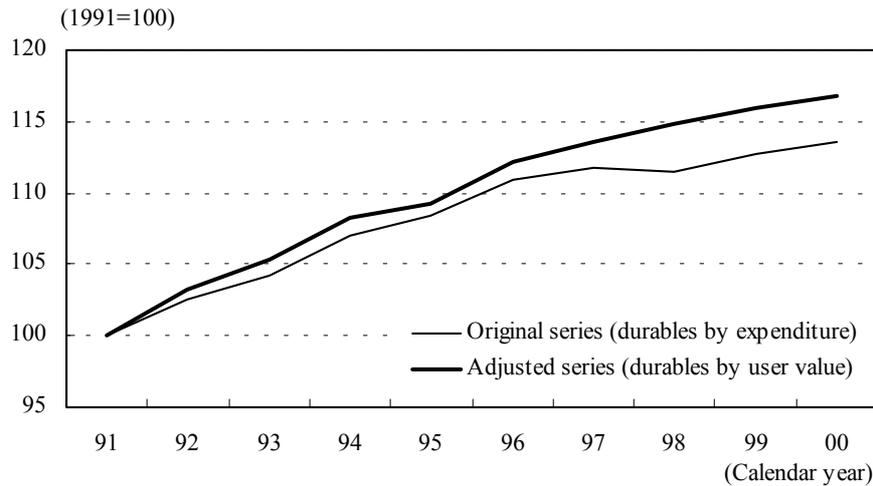


Figure 1-3. Real Household Consumption on a GDP Basis

- Notes: 1. Author's calculations based on Cabinet Office, "National Accounts."
 2. In the adjusted figures the purchase price of durable goods is replaced by their depreciation value.

In addition, in recent years there has been a growing tendency to utilize durables for longer, which is facilitated by the expanding second hand market, by transferring ownership. This has had the effect of boosting consumption on the user side without entailing additional expenditure. But can it be regarded as one of the factors behind the slump in new consumption expenditures? Certainly, fresh demand may decline unless consumers own more of each to balance out what they save by extending the period of use. However, this trend is far from a case of shoppers eager to pay less and save money putting a damper on total consumption. On the contrary, it should be seen as a way for consumers to fulfil their wide-ranging wants when overall consumption levels are being cut back. There is considerable likelihood that the savings achieved by paring back on new purchases of certain items are being channeled into other expenditures. In light of this fact, let us further explore the reasons behind the slump in consumption based on the results of a survey of consumer attitudes.

2. Welfare Impacts on Consumers

The Opinion Survey on National Living Standards conducted by the Cabinet Office (for-

merly the Prime Minister's Office) tracks perceived improvement in living standards on a year-on-year basis. Recently the percentage of respondents stating that their standard of living has declined has risen in step with the slump in consumption (Figure 1-4). These results suggest that a growing proportion of consumers find themselves unable to increase expenditures despite a desire to spend.

Figure 1-5 shows the pattern for different age groups during two periods when perceived living standards dropped sharply. Figure 1-5(1) illustrates the recent state of affairs. The percentage of respondents in the under-60 age group stating that their living standards had declined climbed dramatically between May 1997 and December 1999. What with spiraling unemployment and a serious recession that drove some financial institutions into bankruptcy, the worsening economic situation of these years seems to have had a greater impact on workers. Figure 1-5(2) shows the pattern for the early 1970s, when the deterioration in economic climate was even more rapid. Unlike during the recent slump, all age groups were roughly equally affected. Furthermore, in the 1970s, although the discrepancy between age groups was small, relatively speaking it was the sixties age group which registered the largest percentage of

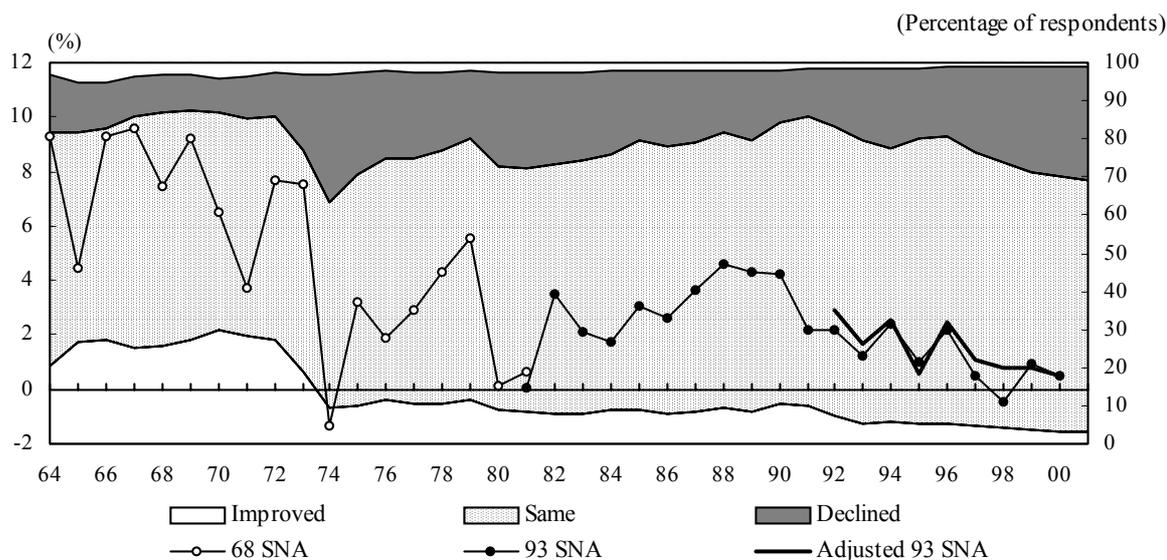


Figure 1-4. Real Increase in Per Capita Consumption and Perceived Improvement in Living Standards

Notes: 1. The right-hand scale gives perceived change in living standards compared to one year before as a weighted average converted to calendar year.

2. The adjusted SNA is based on consumption of durables as given in Figure 1-3.

Sources: Cabinet Office, "Annual Report on National Accounts," "Opinion Survey on National Living Standards," and Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Population Estimates."

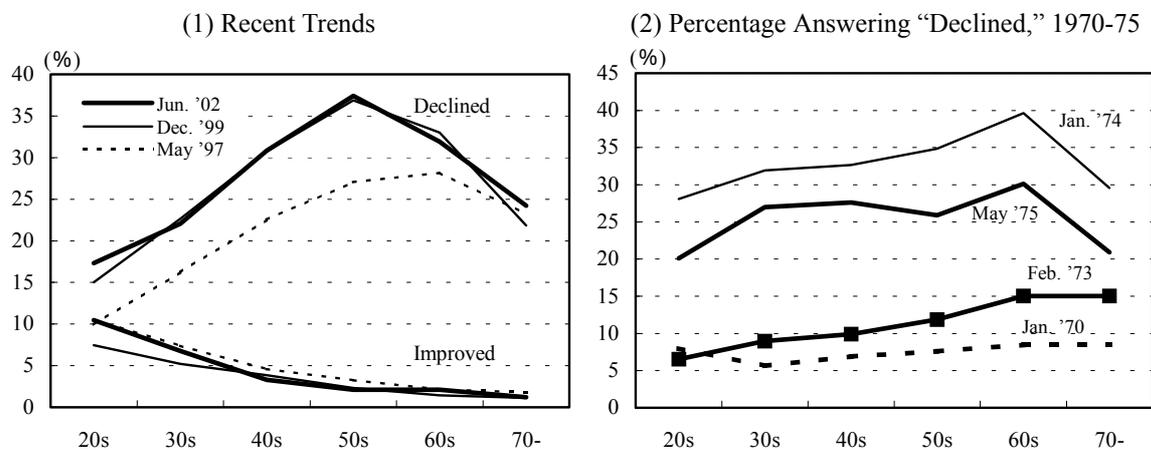


Figure 1-5. Perceived Improvement in Living Standards by Age Group

Notes: 1. The question: "How does your present living standard compare with one year ago?"
 2. Until February 1973 all respondents over sixty were lumped together; therefore the percentages for the "60s" and "70-" age groups in Figure 1-5(2) are the same.

Source: Cabinet Office, "Opinion Survey on National Living Standards."

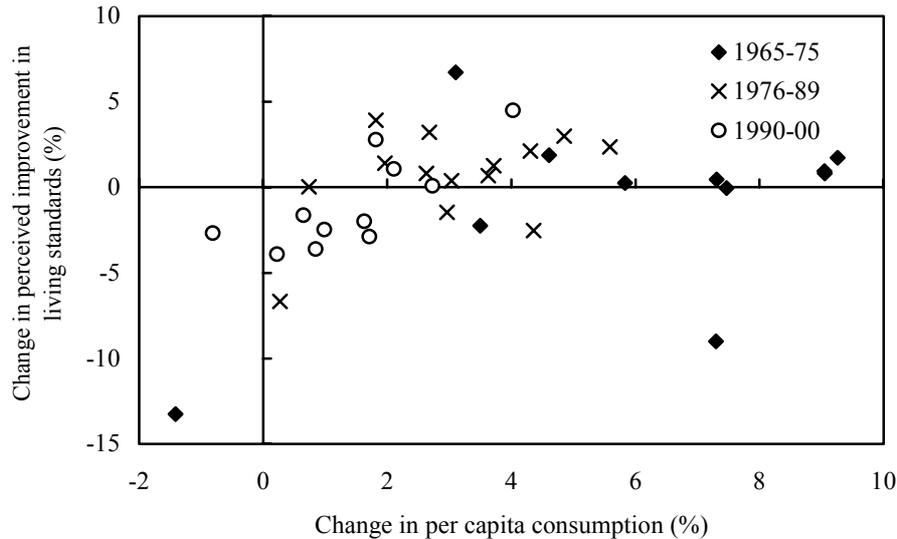


Figure 1-6. Change in Consumption Levels and Perceived Improvement in Living Standards

- Notes:*
1. Per capita consumption is based on household expenditures as given in 68 SNA.
 2. Change in perceived improvement in living standards gives the year-on-year increase/decrease in percentage of respondents attesting to no decline as a weighted average converted to calendar year.
- Sources:* Cabinet Office, "Annual Report on National Accounts," "Opinion Survey on National Living Standards," and Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Population Estimates."

respondents attesting to a decline in living standards. This generational pattern remained largely unchanged through 1997. People tend to detect a drop in living standards at that turning point when they retire and start living on their pension. The soaring inflation that continued until the mid 1970s aggravated that perception. But since 1999 the highest percentage of respondents stating that their living standards have declined has been among those in their fifties, who are still pursuing careers and are at the peak of their earning power. The perception that living standards are in decline is particularly marked among this middle-aged segment of the population, even when compared to the young.

Let us examine the correlation between per capita growth in consumption and perceived improvement in living standards (Figure 1-6). A decline in the former indicator from close to 10% to 2% has no effect on the latter, but once growth in consumption drops to below about 2%, perceived living standards begin to decline. When growth in consumption hits zero, perceived living standards drop, indicating that

relatively solid spending on the part of "big spenders" drives up average consumption. Although the correlation between perceived living standards and growth in consumption depends on this pattern, around 2% growth in consumption is one possible target to increase the number of people who perceive an improvement in standard of living.

3. The Saving Rate Remains High

Consumption can therefore be seen as a yardstick of the nation's welfare. GDP, that key indicator in managing the economy, is ultimately channeled into present and future consumption. Given the crucial nature of consumption, economic growth theory refers to the principle of maximizing the long-term benefits to be derived from it as the golden rule (Phelps 1961). As in many other growth models, household finances have an impact on the growth process via saving rates. This section looks at recent savings trends.

First we examine the lifecycle hypothesis, which presents a microeconomic basis for divi-

sion of income into consumption and savings; in other words, distribution of resources over different points in time. Figure 1-7 shows the classic profile of consumption and income based on the lifecycle model. Here, for simplification, it is assumed that income is generated from the outset. The horizontal axis can then be thought of as a model of a single household, including dependents, as observed over the course of the household head's working career. This has the added advantage of ensuring compatibility with the statistics on individual household finances to be discussed later. Income increases with the number of years worked, peaking at middle age, and upon retirement pension income flows in. Consumption, on the other hand, is distributed as needed over the different stages in life. The assumption is that, barring uncertainties about time of death

and state of health, total consumption will equal lifetime income, so no assets will be left over after death. During the younger years savings will be in the minus column since debt is used to cover consumption in excess of income. Middle age is devoted to paying off those earlier debts and saving money for retirement. Savings peak at time of retirement. Those savings, along with pension income, are then tapped to fund consumption, which therefore tapers off only gradually despite the drop in income consequent on retirement.

Predictions hold that Japan's high saving rate, which is regularly cited as one of the key factors that enabled the country to achieve such high economic growth, will go into decline at some point in the future. The primary basis for that forecast is the aging population. Figure 1-8 shows past and projected future changes in Ja-

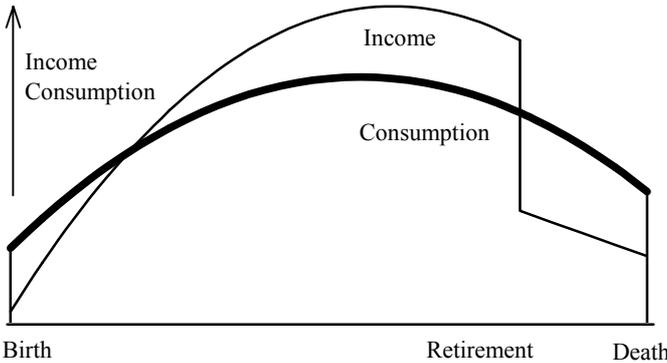


Figure 1-7. Lifecycle of Income and Consumption

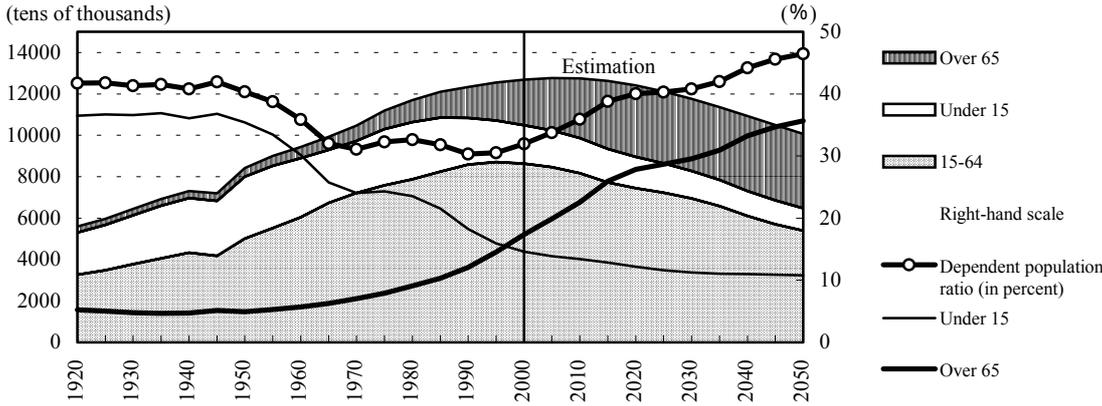


Figure 1-8. Changes in Age Composition

Note: Dependent population ratio refers to individuals under 15 and over 65 as a percentage of the total population.
 Source: National Institute of Population and Social Security Research, "Population Projections" (February 2002).

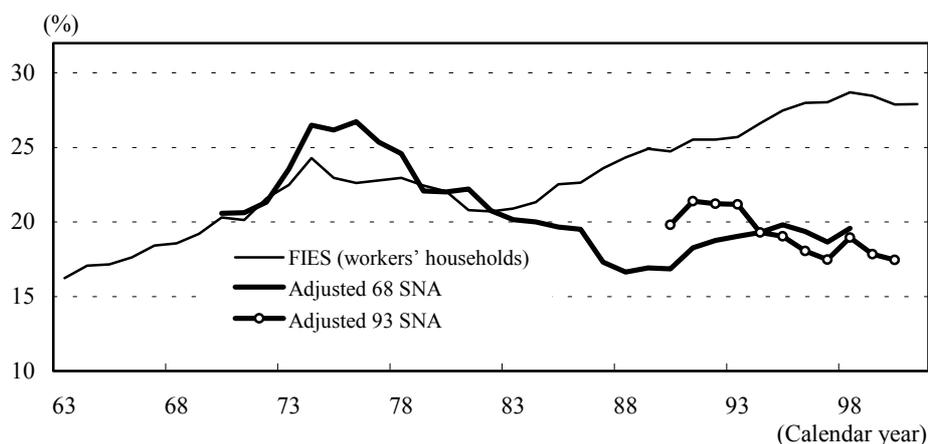


Figure 1-9. Saving Rate

Note: The SNA numbers have been adjusted by excluding imputed rent of owned houses and medical expenses covered by social security, the two major forms of fictitious consumption, in order to bring them more closely in line with the family survey figures.

Sources: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Family Income and Expenditure Survey" and Cabinet Office, "Annual Report on National Accounts."

pan's demographic breakdown. Due to the growing number of old people, the percentage of the dependent population has been on the increase since bottoming out in 1990. An increase in the dependent population, which basically just consumes, puts downward pressure on saving rates in the economy as a whole by driving up overall consumption relative to production. The stock of deposits will similarly go into decline if seniors take out more savings than workers are putting in the bank.

The lifecycle hypothesis also predicts that lower economic growth will translate into a lower saving rate. Economic growth produces intergenerational differences in lifetime income, but those differences shrink when growth is sluggish. That in turn drives down saving rates in the economy as a whole, since unless age-group profiles differ between generations the income generated by workers will fall short of consumption by seniors.⁹

⁹ This description applies to two economies with different growth rates. As will be seen below, it is conceivable that the saving rate could rise when an economy experiences a slowdown in growth. The relationship between economic growth and saving rates has been analyzed using cross-country data (Carroll and Weil, 1994, Attanasio, Picci and Scoreu, 2000 etc.), but some of the results are

These considerations led to a general consensus that Japan's saving rate would fall sooner or later. Figure 1-9 plots saving-rate trends. According to System of National Accounts statistics the saving rate peaked in 1976, then went into decline until 1988. This trend was seen as consistent with the predictions. But in the 1990s the rate remained on the whole flat in contradiction to what was expected.¹⁰ The saving rate as given in the FIES has also followed a definite upward trend in recent years, although it differs considerably from that in the SNA in both actual percentage and pattern of fluctuation because it does not cover the same

inconsistent with the above explanation as far as cause and effect are concerned. The question still awaits elucidation.

¹⁰ Cross-country statistics issued by the OECD confirm that Japan's saving rate has not dropped since the late 1990s. Hayashi (1986, 1997) and Iwamoto (1996) argue that Japan's saving rate in the broad sense of the term (i.e., that of the economy as a whole) is not really that high: the gap with the US is to a large extent illusory, being attributable to accounting practices relating to depreciation of assets followed by the government and private-sector firms outside the financial sector. In examining future financial burdens below, we will take a brief look at the balance of general government accounts and social security, which exert a disproportionate effect on household finances.

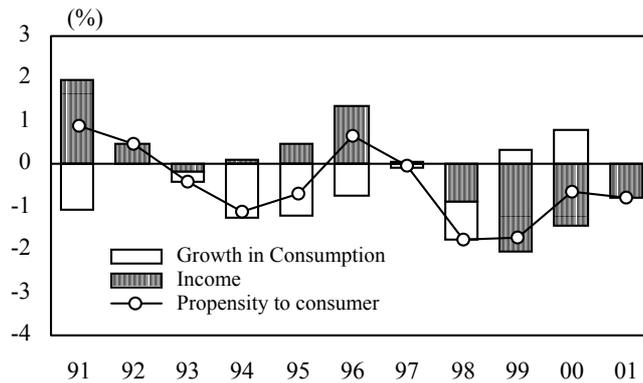


Figure 1-10. Changes in Real Consumption by Factor

Note: This graph shows the factors behind fluctuations in real consumption as divided into real disposable income and propensity to consume.

Sources: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Family Income and Expenditure Survey and Consumer Price Index."

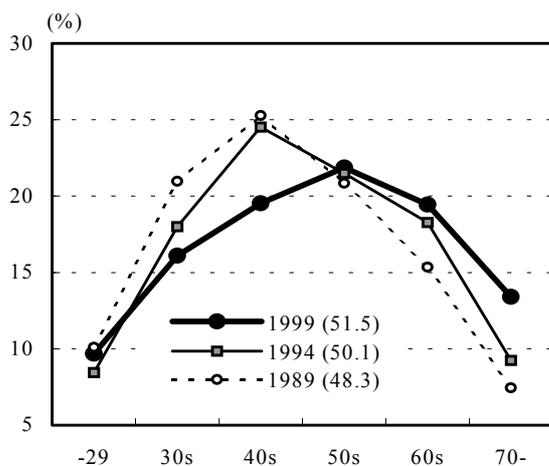
scope.¹¹

Figure 1-10 divides the factors behind fluctuations in real consumption into income and propensity to consume based on the FIES. In 2001, as income fell for the fourth consecutive year, propensity to consume failed to pick up the slack, an indication that the ratchet effect is fading. As in 1998, this can be ascribed to the perception that recent income fluctuations are not temporary but permanent in that they reflect changes in lifetime income. Above, in examining the effects of lower economic growth on saving rates, we noted the impact of intergenerational gaps in lifetime income; on the other hand, if a slowdown in growth results in forecasts being revised downward, the saving rate per household may actually rise. No single factor determines whether the overall saving rate will go up or down.

¹¹ The gap between the saving rate as given in the FIES and that in the System of National Accounts has reached close to 20% of late. The chief differences between the two surveys are as follows: (1) The GDP statistics include imputed rent of owned houses and social security benefits covering medical expenses. (2) The totals for working households used in the family survey do not include single-member households and households without income. But these discrepancies alone are not enough to account for the gap; the difference in sample design appears to be a further factor. Figure 1-9 has been adjusted along the same lines as Iwamoto, Ozaki and Maekawa (1995), which provides a summary of research on the discrepancies.

In order to clarify the relationship between an aging population and the saving rate, we plotted by age group saving rates for all households, including single-member and seniors' households, following Higo, Sugou and Kanaya (2001) (Figure 1-11). The data are taken from the National Survey of FIES. The left-hand graph showing breakdown of households by age clearly reveals that the population has become older, with the peak age for heads of households shifting from the forties up until 1994 to the fifties in 1999. And, as the right-hand graph indicates, those in their fifties have the highest saving rate. Thus the graying of the population has had the effect of driving up the saving rate. But this age-based demographic factor is not enough to explain even a tenth of the rise over the decade, most of which is accounted for by an across-the-board jump in saving rates among the below-fifty age group. As Japan ages, the over-sixty generation with its lower saving rate will come to account for a larger slice of the population; hence it is possible that at some point the overall saving rate might drop. However, if today's working generation, which has driven up the saving rate in the first place, maintains that same high rate, the decline will be a gradual one despite the

(1) Distribution of Households by Age Group of Household Heads



(2) Saving Rates by Age Group

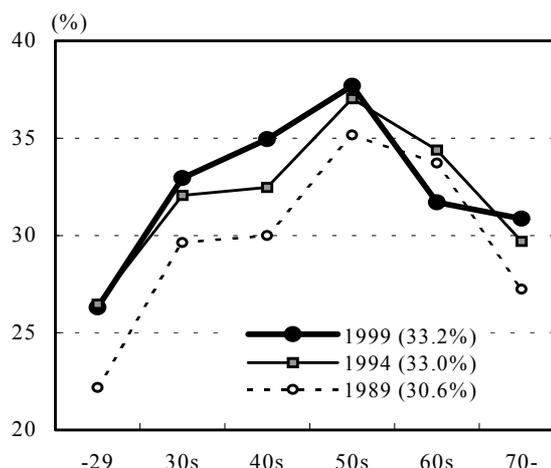


Figure 1-11. Distribution of Households and Saving Rates by Age Group

- Notes:
1. The figures have been annualized, as the survey itself covers the three-month period September-November.
 2. The figures have been adjusted and totaled in accordance with Higo, Sugou and Kanaya (2001).
 3. The numbers in brackets give the averages for all households. The ages in Figure 1-11(1) are weighted averages based on 25, 35 etc. through 75.

Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Report on the Survey of Consumer Finances."

country's graying population.¹²

4. Opinion Survey on Concerns about the Future

One possible factor behind the recent slump in consumption and stubbornly high saving rate lies in worsening prospects for those of working age. On the other hand, those who subscribe to

the view that consumption is saturated might seek the reason instead in greater availability of money to save thanks to a rise in absolute income levels. We will examine qualitative trends in this area based on opinion survey results before going on to the next chapter to conduct quantitative analysis.

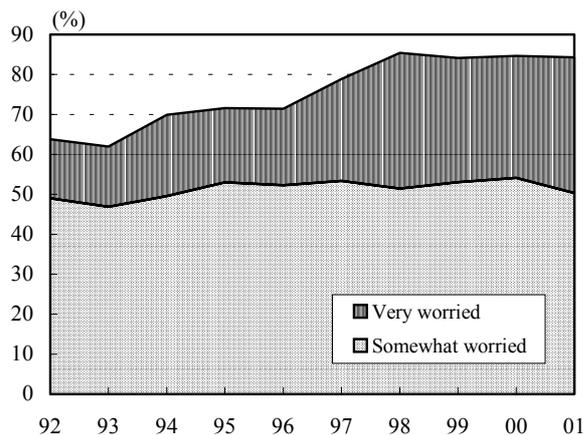
According to the Public Opinion Survey on Financial Assets of Households (formerly titled the Public Opinion Survey on Savings) implemented by the Central Council for Financial Services Information (Figure 1-12), over the course of the 1990s there has been a secular increase in the percentage of Japanese worried about life after retirement (Figure 1-12(1)). The growth in concern has been especially marked among those under forty (Figure 1-12(2)). The top reason given for this concern in the 2001 survey was lack of adequate savings (75.6%), followed by insufficient pension and insurance (67.0%), failure to save and otherwise prepare for retirement due to lack of the wherewithal to do so (45.2%), and insufficient retirement package (28.9%). Figure 1-12(3) shows how the percentage of respondents citing the top two

¹² Figure 1-11(2) conflicts with the lifecycle hypothesis in several respects. The saving rate among young people, which according to the lifecycle hypothesis should be negative, is in fact over 20%, while the over-seventy age group, which is supposed to be depleting its savings, still has a high rate of around 30%. The same trends are to be observed to a greater or lesser extent in the other developed economies, and various attempts have been made to come up with an explanation. The question of the validity of the lifecycle hypothesis has important implications for such issues as the relationship between an aging population and the saving rate, the tax system, and how the cost of government-bond issues should be shared out between different generations. Most recent studies, such as Horioka et al. (2002), argue that the lifecycle hypothesis is valid for Japan, albeit in modified form. The present paper assumes the hypothesis's basic validity. See also footnotes 14 and 22.

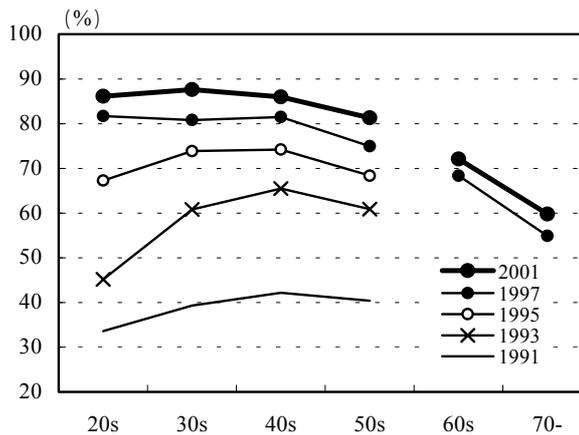
reasons has fluctuated by age group. Both garner high percentages among middle-aged and older respondents soon facing retirement. But while the percentage of respondents citing lack of savings has changed little over the decade, the percentage worried about pensions and insurance has risen sharply among all age groups, including those in their twenties. The growing

sense of unease is to be seen across all income brackets, with a slightly sharper jump among those with the highest incomes (Figure 1-12(4)). As in the case of young people, this indicates a worsening of sentiment among a segment of the population that has traditionally not had to worry about the future.

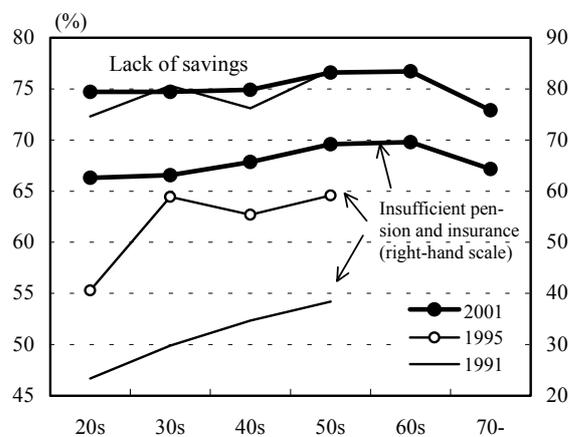
(1) Percentage of Persons Concerned about Post-Retirement



(2) By Age Group



(3) Reasons for Concern by Age Group



(4) By Income Bracket

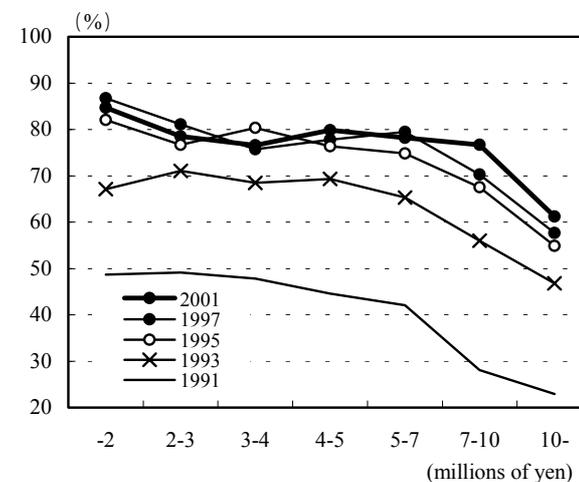


Figure 1-12. Percentage of Persons Concerned about Post-Retirement

- Notes:
1. The question: "What do you think life after retirement ("your life in future" in the case of seniors) will be like in economic terms?" The over-sixty age group has been included in the survey only since 1997. The data in Figure 1-12(1) are restricted to responses by heads of households under sixty.
 2. Figure 1-12(3) gives the percentage of respondents expressing concerns who chose each reason (multiple answers were allowed). Percentage of respondents citing lack of savings in 1995 is not included since the fluctuation was slight.
 3. Only two thirds of responses included income; therefore the results do not add up to a total even if their (weighted) average is used.

Source: Central Council for Financial Services Information, "Public Opinion Survey on Financial Assets of Households" (formerly titled the "Public Opinion Survey on Savings.")

Figure 1-13 gives motives for saving. “Selfish motives” such as to fund one’s retirement years or to pay for durable goods and vacations have gained greater prominence. Conversely, the percentage of respondents cit-

ing their child’s marriage or education as a motive is down, while the desire to leave a bequest has ranked consistently low. Although this trend can be ascribed in part to a rise in the percentage of households which do not have

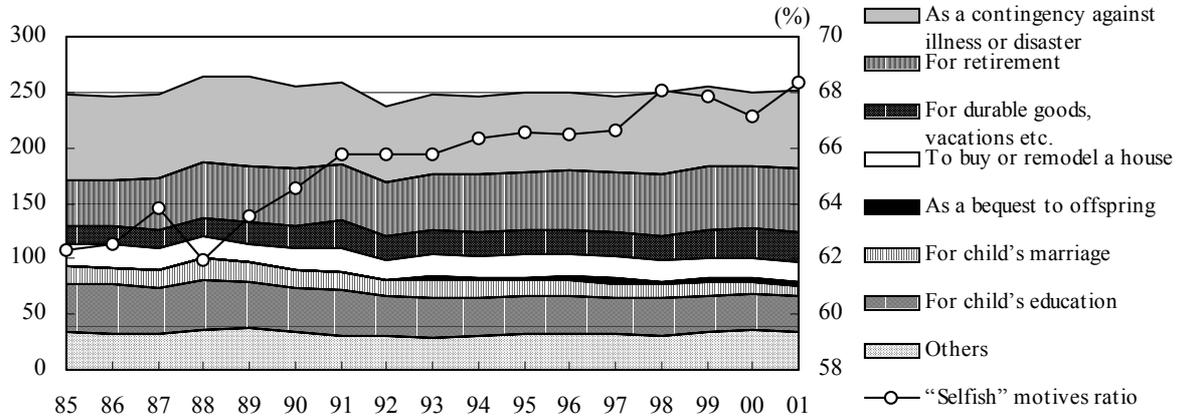


Figure 1-13. Motives for Saving

- Notes:*
1. This graph plots the totals for each answer (a maximum of three answers per respondent), with 100 representing the total number of respondents.
 2. Percentage “selfish” motives gives the aggregate percentage of motives excluding for a bequest, for child’s education or marriage, and other motives.

Source: Central Council for Financial Services Information, “Public Opinion Survey on Financial Assets of Households” (formerly titled the “Public Opinion Survey on Savings.”)

(1) Priority to the Present or Future

(2) Percentage of Each Generation Preferring to “Live for Today”

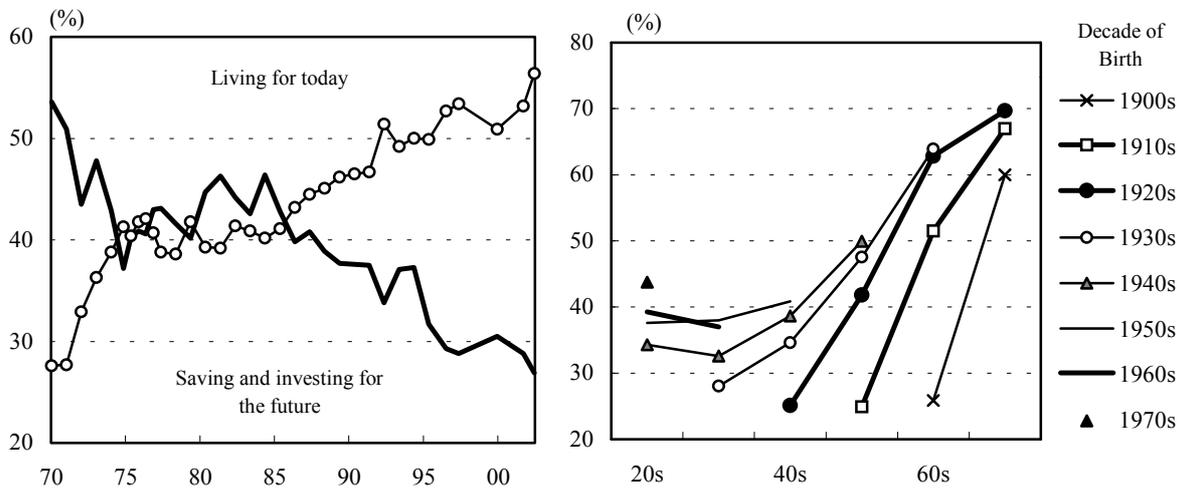


Figure 1-14. Attitudes to Consumption and Saving

- Notes:*
1. The question: “From now on, do you intend to give greater priority to saving and investing for the future or to living for today?”
 2. Figure 1-14(2) plots the percentage of individuals in each generational cohort who chose “living for today” at each age.

Source: Cabinet Office, “Opinion Survey on National Living Standards.”

children due to falling birth rates, it is also, like the growing concern about retirement, closely related to the increasing tendency to save for one's own future.

At the same time an increasing percentage of Japanese prefer to spend money at their present level of consumption than to save (Figure 1-14(1)). Figure 1-14(2) plots trends for separate generational cohorts at different ages. The urge to save becomes strongest in the thirties, after which all generations gradually display a tendency to give more priority to present consumption. Generational comparisons reveal that, regardless of absolute age, the younger the generation, the more eager it is to spend. Meanwhile people's savings target, which is considered to be a more specific indicator of behavior, has remained flat since 1990, declining to somewhat under 1.5 times present level of savings (Figure 1-15).

The growing inclination to "live for today" and the decline in savings target might both seem like a drag on savings, but we saw in the previous section that if anything the saving rate is on the rise. In reality, the "live for today" attitude does not exclude the possibility of saving more money. The fact that the younger generation gives such high priority to saving money despite its increased weight on current

consumption is to be attributed to the lack of firm prospects for the future.

The decline in savings target can be attributed in part to the falling cost of housing and to stable consumer prices. In addition, this target does not give the ultimate peak level of savings. As the responses of different age groups indicate (Figure 1-15(2)), the savings target rises as people approach their sixties, which is when actual savings tend to peak. Thus the savings target is a short-term goal based on the amount people already have in the bank. That being the case, the recent dip in savings target should be interpreted as reflecting a delay in accumulating savings rather than a loss of desire to save per se.

Finally, Figure 1-16 shows fluctuation of assets per capita of population over the course of the 1990s. Although financial assets continue to increase, non-financial assets have dwindled because of the plunge in real estate, while household debt has risen, with the consequence that net worth (net value of financial assets and liabilities plus non-financial assets) has remained flat since 1992. Moreover, when the government's financial assets and liabilities are factored in, net worth deteriorates considerably compared to that of households alone, reflecting the increase in government debt of recent years.

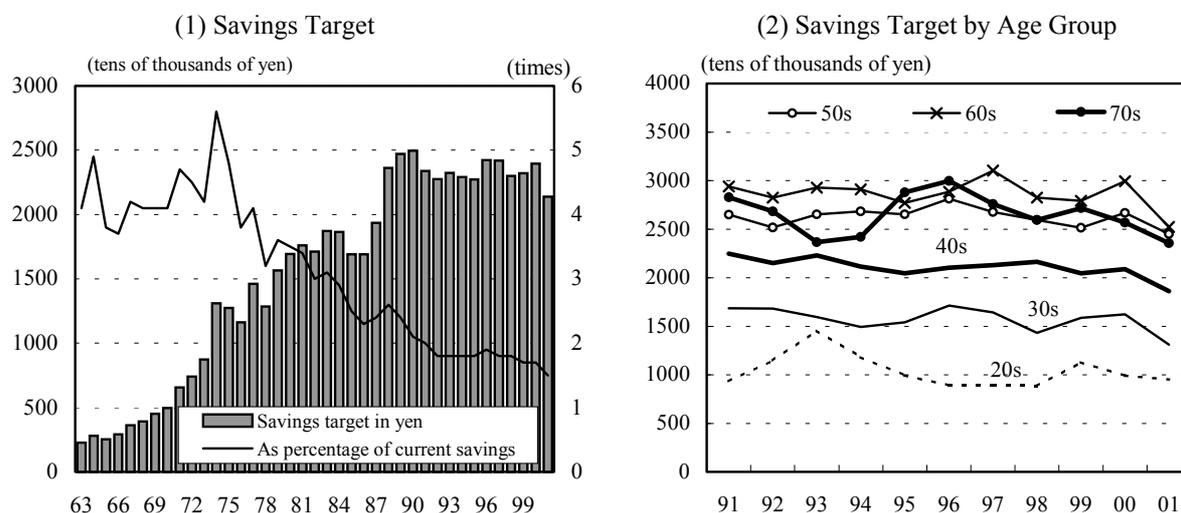


Figure 1-15. Savings Target and As a Percentage of Current Savings

Note: The question (unchanged throughout): "How much money does your family currently aim to save?"
Source: Central Council for Financial Services Information, "Public Opinion Survey on Financial Assets of Households."

There is a high probability that government debt will be financed by future tax increases, and even if these take the form of taxes on cor-

porate profits, they could ultimately have an impact on family finances via wages, jobs, or stock prices.¹³

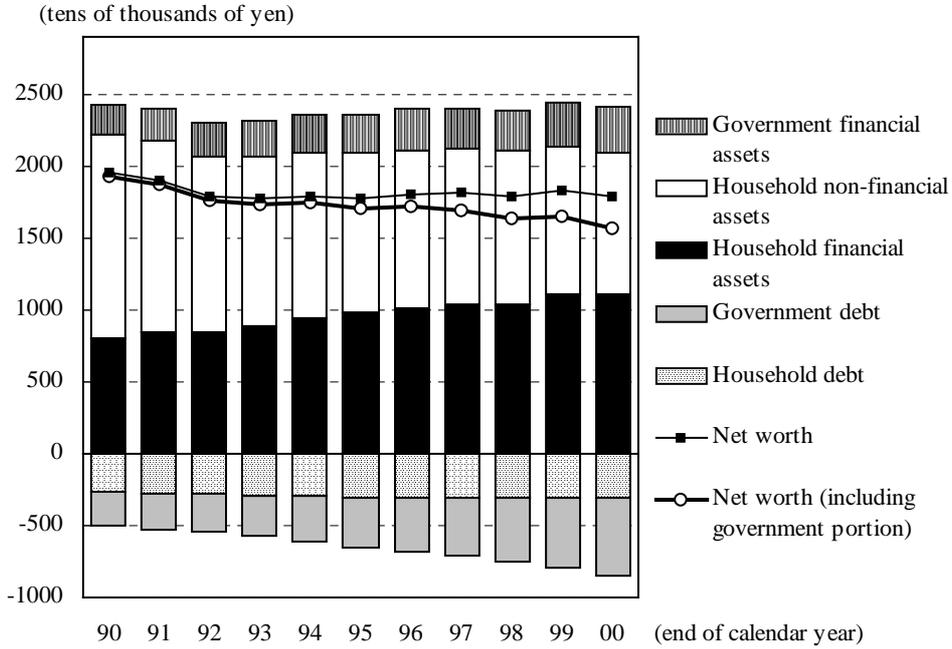


Figure 1-16. Assets Per Capita of Population

Source: Cabinet Office, "System of National Accounts."

¹³ This description does not take into account the government's non-financial assets, which are of low liquidity. Government non-financial assets may increase household income by offering productivity benefits through social capital and by buoying up the economy, but Kondo and Ithori (1999) demonstrate that this effect has faded in recent years.

II Generational Characteristics of Consumption

1. Changes in Saving and Income Profiles

The previous chapter showed that the primary reason for Japan's stubbornly high saving rate despite its aging population is the increased tendency to save of the working generation, which, according to opinion surveys, is increasingly concerned for the future. This chapter attempts a quantitative analysis of the specific factors influencing the consumption and savings behavior of different generations.

The statistical sources of generational data on household finances currently available are the National Survey of Family Income and Expenditure and the Family Income and Expenditure Survey (FIES). The former covers a sample measuring seven times that of the FIES: 59,800 households in the 1999 survey, including approximately 5,000 single-member households. It also displays a high degree of statistical accuracy, but it has its drawbacks: it is carried out only once every five years, making it impossible to gauge more recent trends; it covers only a three-month period between July and September (two months in the case of single-member households); and, while improvements have been made in the survey contents, that necessitates adjustments when making chronological comparisons. The FIES for its part only covers households with two or more members, and the information it provides on income is restricted to working families. Nonetheless, here we will utilize the latter, for it eliminates the need to estimate or adjust when compiling data and makes it easy to compare data from different points in time. The FIES has one more shortcoming: the monthly sample size is merely 8,000 households or so. In this study, however, the accuracy improves considerably since yearly averages are used.¹⁴

The following analysis primarily uses gen-

¹⁴ The standard error for expenditures of workers' households in each month's FIES is 1.6%. All other things being equal, the average annual standard error would then work out to approximately 0.5%, since the sample size is twelve times as large.

erational cohorts as classified by year of birth. For example, for the cohort born between 1936-40, we employ data for 2000 (ages 60-64), 1995 (ages 55-59), and 1990 (ages 50-54). Figure 2-1(1) gives breakdown of heads of household by age. Below the peak age group of 50-54, the pattern diverges from overall population distribution, which is somewhat flatter. This is because part of this segment of the population is included in households headed by parents (see Figure 2-1(2)), although in some cases it is the son or daughter who is the head of the household ("Live with parents" in Figure 2-1(1)).¹⁵ Nonetheless, nuclear families and single-member households make up the majority at all ages, and there are no serious obstacles to observing consumption behavior of the average household as long as differences in that behavior by breakdown and type of household remain steady over time.

Figure 2-2 shows saving rate profiles for different ages. As can be seen from Figure 2-2(1), the saving rate has risen in virtually all age groups in a pattern consistent with the climb in saving rate in the overall economy (the line labeled FIES in Figure 1-9).¹⁶ Figure 2-2(2) gives the rate by cohort. Generations born more recently have a saving rate some 10% higher than that of their parents' generation. Thus chronological trends can be interpreted as generational differences. Note also that, since saving rate equals 1 - propensity to consume, the regression analysis given in the next section, which treats propensity to consume as a dependent variable, is equivalent to an analysis of the saving rate fluctuations here observed.

¹⁵ "Seniors' households" is not synonymous with seniors at the individual level, which is one of the reasons that household data contradict the lifecycle hypothesis. In particular, it has been noted that the saving rate gives the appearance of remaining positive, in violation of the hypothesis, because the data on working households in the FIES do not include jobless households already digging into their savings (Yashiro and Maeda, 1994). However, this fact is not of immediate concern in observing inter-generational differences.

¹⁶ Saving rate is here defined as (disposable income - consumption expenditures) / disposable income. The FIES terms this the ration of surplus.

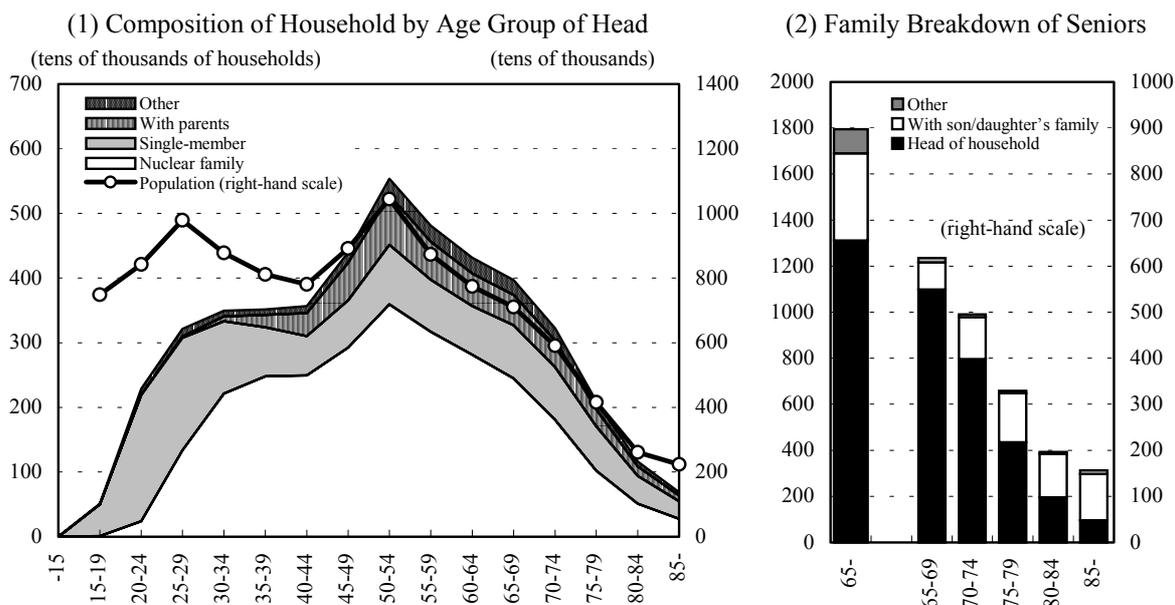


Figure 2-1. Composition of Household

Note: The numbers in Figure 2-1(2) are in tens of thousands.

Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "2000 Population Census."

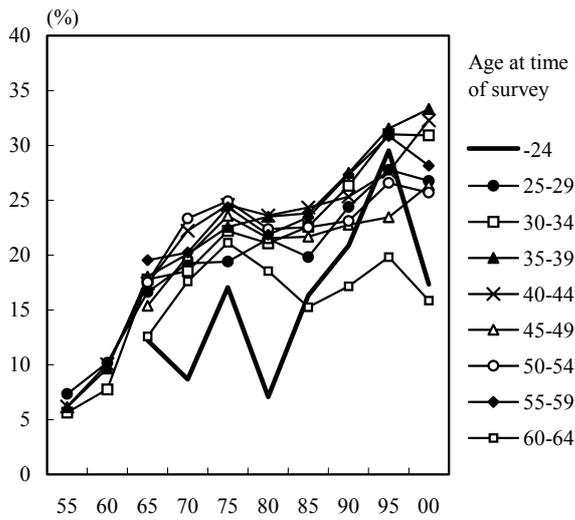
Here repayment of debt is, by definition, included in savings. However, when one moves from a rented domicile into a self-owned home acquired with a residential loan, the rent, classified as consumption, is replaced by loan repayments, which are treated as savings; hence the saving rate may increase in FIES even though actual housing service enjoyed does not change. Therefore, if the percentage of households with residential loans climbs among the younger generation, an apparent discrepancy in saving rate will emerge between generations. While it is difficult to eliminate completely the impact of this factor,¹⁷ for the sake of simple comparison the bottom half of Figure 2-2 plots the saving rate with the cost of housing subtracted from consumption expenditures: in other words, no expenditures on housing are included

¹⁷ For example, even if someone takes out a loan to buy a residence that she was previously renting, there is no guarantee that the loan repayments are going to be the same as the rent. Moreover, when people move into a different type of residence, accompanying lifestyle changes going beyond the one-time purchase of durable items may alter the total amount spent on consumption (i.e., redistribute lifetime consumption). That too makes precise adjustment difficult.

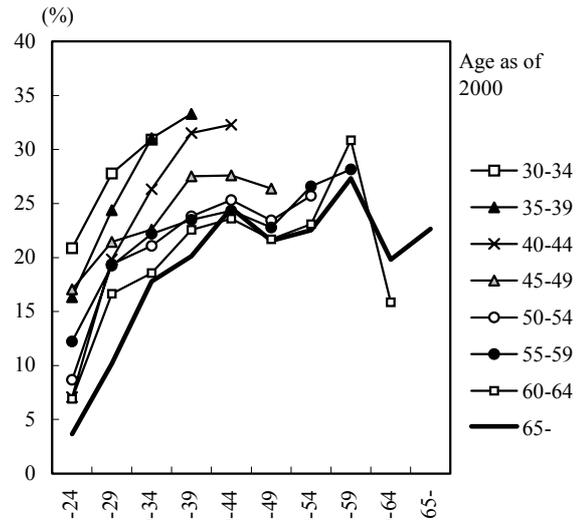
in consumption. Here the saving rate at younger ages, when rent and residential loans impose a considerable burden, goes up. The saving rate of younger generations remains high in Figure 2-2(4), while Figure 2-2(3) brings out even more sharply the climb in saving rate since the 1990s. Thus the reasons behind the change in saving rate must be sought elsewhere than in the fluctuating residential loan burden.¹⁸

¹⁸ Iizuka (2001) argues against the view that the burden of residential loans directly suppress consumption, claiming that no negative impact from residential loans can be detected once apparent saving rate factors are eliminated. Similarly, Ishikawa (2002) contends that families that own their place of residence do not really face a heavier financial burden than other families, because they also have larger incomes; buying a home is purely a matter of personal choice, and it is wrong to focus exclusively on the amount to be repaid. Rather, as Ishikawa and Development Bank of Japan (2001) point out, unanticipated increases in financial burdens (a climb in real interest rates spurred on by deflation, falling housing prices and so forth) may be responsible for curbing consumption by causing adjustments in distribution of consumption over time and sharpening the sense of uncertainty. This point is of particular interest in the context of the this study.

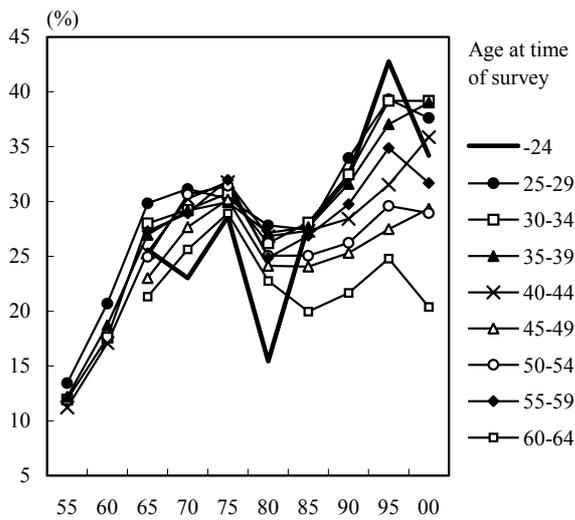
(1) By Age at Time of Survey



(2) By Cohort



(3) By Age at Time of Survey
(Excluding Housing Expenditure)



(4) By Cohort
(Excluding Housing Expenditure)

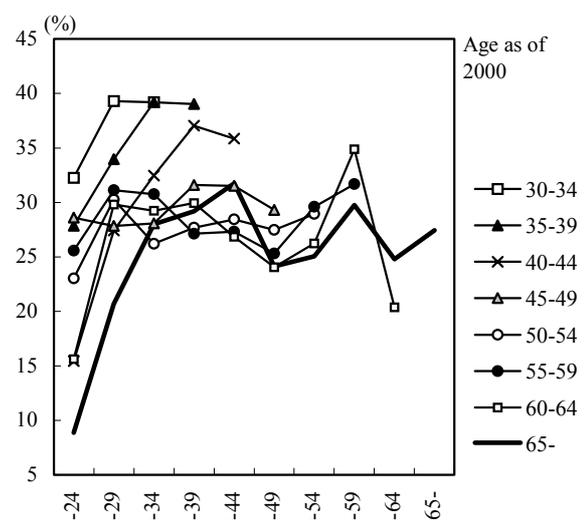


Figure 2-2. Saving Rate Profiles for Different Ages

Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Family Income and Expenditure Survey (Working Households)."

Next we turn to income trends, the primary determinant of consumption (Figure 2-3). Figure 2-3(1) shows the so-called seniority profile, which is defined as salary by age at each point

in time. The profile on the whole remains steady, although it rises slightly after forty.¹⁹ Figure 2-3(2) gives the same profile but measured in the real terms. The whole seniority pro-

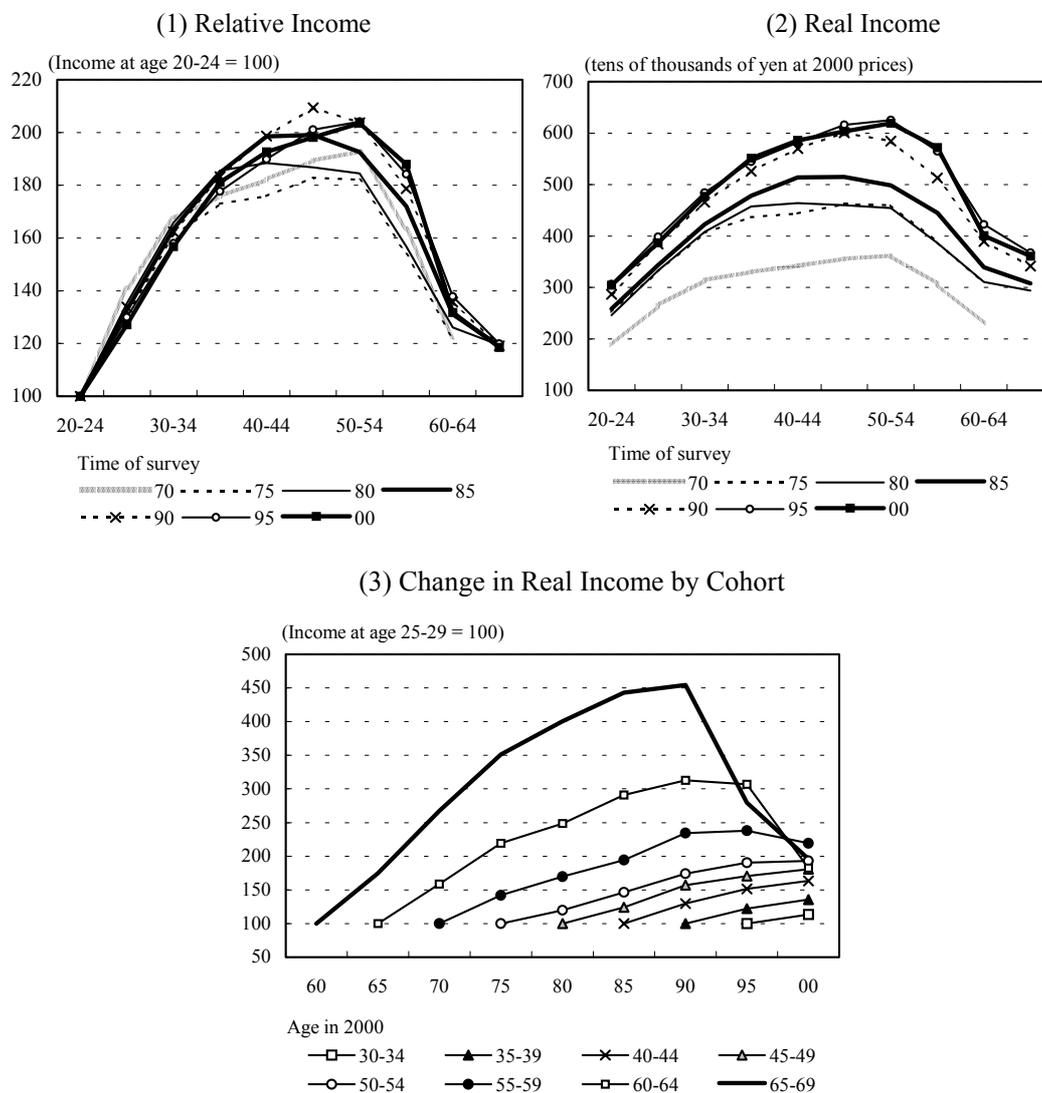


Figure 2-3. Income Profile

- Notes:
1. Figures 2-3(1) and (2) are based on the Basic Survey on Wage Structure. Estimated annual income was calculated by adding regular salary and bonuses, then converted to an index.
 2. Since Figure 2-3(3) extends further back in time, it adopts the figures for annual income of heads of household as given in the FIES.
 3. Real income has been calculated based on the overall Consumer Price Index for 2000 excluding imputed rent.

Sources: Ministry of Health, Labour and Welfare, "Basic Survey on Wage Structure" and Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Family Income and Expenditure Survey and Consumer Price Index."

¹⁹ Note also that seniority-based differences in salary have increased somewhat, but this reflects trends among female workers. Age-based differences between male workers are shrinking among both university and high school graduates.

file has shifted upward as the economy has grown, although virtually no such gains are observed for the 1990s. Finally, Figure 2-3(3) compares real income growth by cohort as calculated based on income at age 25-29. The rise in salary is less steep the younger the generation, reflecting the degree of economic growth experienced by each. As a result, once the outlook for lifetime income is revised downward due to unforeseen declines in income growth, the whole consumption profile shifts downward and a rise in saving rate is observed. As we saw in Figure 2-2, this effect would be greater among younger generations, where the scope of the revision is greater.

A further simplified lifecycle model was devised in order to clarify the impact of such growth in income on the saving rate (Figure 2-4). After working for L years, a head of household spends R years in retirement; disposable income \bar{YD} and consumption \bar{C} are constant throughout her lifetime. Under these conditions, lifetime income will equal lifetime consumption when:

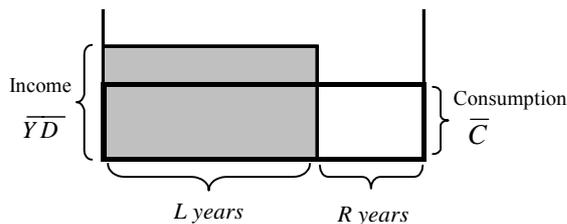


Figure 2-4. Simplified Lifecycle Model

$$\bar{YD} \cdot L = \bar{C} \cdot (L + R) \quad (2-1)$$

This can be transformed into:²⁰

$$\bar{C} = \frac{L}{L + R} \cdot \bar{YD} \quad (2-2)$$

According to this, lifetime average propensity to consume $L/(L+R)$ is determined by the factor of age alone, and a relative increase in length of retirement due to such causes as longer life expectancy results in a decrease in

propensity to consume. In Section I-3, we saw that the aging of the overall economy (which is demonstrated in a rise in the percentage of old people) pushes down the aggregate saving rate. But at the individual level, growing older drives up the saving rate.

Next, elaborating on Formula 2-2, we devise an empirical model that takes into consideration the impact of major sources of future prospects other than income outlook, e.g., interest rates, pension benefits, retirement package, taxes and so forth. As actually observed, consumption C and disposable income YD are not steady over one's lifetime but fluctuate in accordance with age profile as depicted in Figure 1-7. Therefore propensity to consume C/YD is equivalent to lifetime average propensity to consume \bar{C}/\bar{YD} if the factor *age* is accounted for in the function $f(\cdot)$, that is,

$$\frac{C}{YD} \equiv f\left(\frac{\bar{C}}{\bar{YD}}, age\right) \quad (2-3)$$

Since, according to Formula 2-2, \bar{C} is determined uniquely by \bar{YD} , we have

$$\frac{C}{YD} = f\left(\frac{\bar{C}}{\bar{YD}}, age\right) \equiv f'(\bar{YD}, age) \quad (2-4)$$

Thus long-term changes in propensity to consumer depend solely on the factor of age and on lifetime earnings \bar{YD} . In this formula, lifetime average disposable income \bar{YD} is the aggregate result of current level of and fluctuations in disposable income YD plus such sources of future uncertainty as the employment situation and pensions, hence

$$\frac{C}{YD} = f'(\bar{YD}(\cdot), age) \equiv g(age, \cdot) \quad (2-4')$$

Thus propensity to consume is determined by the age factor in combination with a variety of other factors that affect outlook for disposable income.

²⁰ Modigliani (1986) presents this as a "stripped down" version.

2. Cohort Effects on Propensity to Consume

Next we use Formula 2-4' to identify the factors determining future income outlook. The data used consist of averages for each age group as obtained every five years between 1965-2000 (time of survey t) in the FIES of workers' households; these data are organized into synthetic-panel data classified by cohort.²¹ Table 2-1 provides an overview of the data: the cohorts covered by the survey are listed at the side, while their ages at the time of each survey is given at the top. For example, the survey results

for 1970 consists of fifteen sets of data, one for each generation from that aged 24 and under, born between 1946-50, to that aged 65 and over, born between 1901-05; these data sets are shown in the topmost tier of hatched cells. Unlike panel data analysis, which attempts to identify the principles motivating the behavior of the individual or household as the unit of decision making, analysis using synthetic panel data examines the collective attributes of the specific groups comprising the population under study; in this case, different cohorts as classified by year of birth. This approach is a rela-

Table 2-1. Overview of Synthetic panel Data

Year Born	Age in 2000	Dummy	Age at Time of Survey											
			-24 A1	25-29 A2	30-34 A3	35-39 A4	40-44 A5	45-49 A6	50-54 A7	55-59 A8	60-64 A9	65- None		
1896-00	100-04	Excluded												NA
1901-05	95-99	D1											NA	93
1906-10	90-94	D2										NA	172	107
1911-15	85-89	D3								NA	326	190	105	
1916-20	80-84	D4							NA	462	316	164	94	
1921-25	75-79	D5						NA	689	520	347	205	133	
1926-30	70-74	D6				NA	1039	934	764	635	567	322	193	
1931-35	65-69	D7			NA	1039	934	764	635	567	322	193		
1936-40	60-64	D8		NA	899	980	859	730	616	586	341			
1941-45	55-59	D9	NA	497	947	1014	871	770	700	575				
1946-50	50-54	D10	67	557	957	1000	917	831	708					
1951-55	45-49	D11	89	458	752	828	819	688						
1956-60	40-44	D12	65	339	626	718	662							
1961-65	35-39	D13	47	277	562	663								
1966-70	30-34	D14	40	265	512									
1971-75	25-29	D15	49	269										
1976-80	20-24	Excluded	43											

- Notes:
1. The figures in each cell give total number of households as recorded in the FIES. This information is not available for 1965.
 2. Among households headed by someone under 24, the number with two or more members that are headed by someone under nineteen is negligible (10.5% in the FIES of working households for 1962, 5.1% in the 2000 Population Census); therefore they have been counted with the 20-24 age group. Similarly, households with heads over 65 include some headed by individuals 70 or over (23% in the FIES for 2000) but these have been counted with the 65-69 age group.
 3. Hatching indicates data used in the estimates.

²¹ Analyses of household consumption using synthetic-panel data have been conducted by Deaton and Paxton (1994) for U.K., the United States, and Taiwan and by Hayashi (1988) using the National Survey of Family Income and Expenditure. For details on this type of analysis see e.g. Matsuda, Han and Yoshizoe (2000).

tively straightforward and effective method of explaining macroeconomic trends from the groups concerned.²²

The maximum sample size is 69, since the data for 1965 are used only to calculate the rate of increase between that year and 1970, while the generation born between 1976-80 has been excluded. The cells in the table give the aggregate number of households surveyed; they show considerable variety, ranging from 40 to 1039 (which is a reflection mainly of actual household distribution). Because of the discrepancy in distribution of data, the estimates employ the least squares method as weighted by the number of households shown in each cell.

The estimation is based on the model given by Formula 2-4'. We try to examine the impact on propensity to consume ($PC_{i,t}$) given by: (1) level of and fluctuations in income, (2) year of birth and age, and (3) increased life expectancy and other trend-related factors (Y_t , the last two digits of the survey year), and (4) the employment situation. A dummy variable ($D_i, i = 1, \dots, 15$) is used to identify factors that cannot be explicated from the above and are therefore generation-specific.

For the impact of income (1), the explanatory variables comprise level of real disposable income ($YD_{i,t}$) and real growth rate in YD over the past five years ($GYD_{i,t}$, annualized). $GYD_{i,t}$ incorporates two sets of information: the seniority profile and the shift in income level accompanying economic growth. A further explanatory variable has been added: how much the percentage increase in income that the generation has recently experienced exceeds that enjoyed five years earlier by the cohort five years older ($\Delta GYD_{i,t} = GYD_{i,t} - GYD_{i-1,t-1}$). Since we saw that the seniority profile remains stable from survey to survey in Figure 2-3, $\Delta GYD_{i,t}$ primarily shows the speed of the shift in its overall level and thus represents the outlook for lifetime income, as long as future growth in income is based on adaptive expecta-

²² In some cases consumer data on individuals culled from household surveys are classified by attribute, but here we can eliminate problems involved with estimating data at the individual level by applying the lifecycle hypothesis directly to households. Note that the individuals panel created by attributes from such estimates also comprise a form of synthetic-panel data.

tions.

One reason for including age-related factors (2) is to control the effect of age differences in wages and income profile as given in Formula 2-3. This variable is essential for another reason: the data used are unbalanced in that the range of ages observed differs for each generation. For example, data on younger generations are restricted to the younger years, and the influence of the age at which a generation was observed at any particular point needs to be eliminated so as to isolate only generation-specific characteristics. However, it is difficult to define the function $f(\cdot)$ with its explanatory variable age . Since we have a fixed sample size, we decided to use an age group dummy ($A_j, j = 1, \dots, 9$) within the bounds of significance.²³

Finally, both the active opening rate (ratio of job offers to job seekers: $JOR_{i,t}$) and unemployment rate were considered as indicators of (4) the employment situation, and the former was selected as being the more persuasive. The element left over in the generational dummies D_i , which cannot be explained by (1)-(4) above, is deemed to be the generational effect.²⁴ Here is the actual regression model incorporating the above:

$$PC_{i,t} = \beta_1 Y_t + \beta_2 YD_{i,t} + \beta_3 GYD_{i,t} + \beta_4 \Delta GYD_{i,t} + \beta_5 JOR_{i,t} + \sum_{i=1}^{15} D_i + \sum_{j=1}^9 A_j + \varepsilon_{i,t} \quad (2-5)$$

The results are given in Table 2-2. As in

²³ In Figure 1-7, propensity to consume rises with age from a negative value to a peak, then declines back to a negative level. Thus it does not have a linear correlation with age. It is not wise to predicate too much on the seniority profile, a factor that takes account of changes in outlook for lifetime earnings, not does it prove any more persuasive when the income profile is simulated using the quadratic function of age. One possible reason for this is that there is a strong correlation between consumption and income except during the young years, and propensity to consume varies only slightly (see footnote 11 and Figure 2-2).

²⁴ There are two reasons for employing a fixed effect model. First, taken together, the data cover household finances as a whole, rather than the focus being on specific generations or individuals sampled from the data as in panel data analysis. Second, clearly defined generational differences were anticipated from the start.

the previous section, for comparison's sake a second set of figures has been calculated excluding the cost of housing in order to eliminate the impact of increases in residential loan repayments. The time of survey coefficient Y_t is negative, which can be attributed to the direct impact of longer life expectancy on the ratio of job career to retirement, as well as to the effects of the overall increase in uncertainty. However, since variables Y_t for younger generations are large, it is likely that generation-specific

trend-related factors are included. Hence, the generational comparison below includes a scenario where these factors are taken into account.

Both level of real disposable income $YD_{i,t}$ and rate of increase therein $GYD_{i,t}$ are negative. This indicates that economic growth lowers propensity to consume; in other words, it drives up the saving rate. That could be regarded as a matter of income and propensity to consume going in opposite directions due to the

Table 2-2. Regression Results

(1) Consumption Expenditures			(2) Consumption Expenditures Excluding Housing Costs		
	Adj.-Rsq.	0.717		Adj.-Rsq.	0.639
	Standard Error	2.813		Standard Error	3.148
Variable	Coefficient	Standard Error	Variable	Coefficient	Standard Error
Y	-0.220*	0.106	Y	-0.502**	0.090
YD	-3.06E-05**	6.91E-06	GYD	-1.428**	0.222
GYD	-0.493*	0.215	Δ GYD	0.500*	0.196
Δ GYD	0.199	0.175	JOR	1.890*	0.796
JOR	1.074	0.728			
D15	106.05**	10.00	D15	114.21**	9.93
D14	107.66**	9.88	D14	115.81**	10.06
D13	108.19**	9.58	D13	116.47**	9.83
D12	110.55**	9.21	D12	118.74**	9.53
D11	112.71**	8.80	D11	120.51**	9.09
D10	113.97**	8.50	D10	121.33**	8.78
D9	112.16**	8.24	D9	119.01**	8.53
D8	111.84**	7.98	D8	118.21**	8.26
D7	111.33**	7.78	D7	117.28**	8.06
D6	110.18**	7.50	D6	115.54**	7.80
D5	109.63**	7.34	D5	115.19**	7.63
D4	108.28**	7.34	D4	113.23**	7.59
D3	108.12**	7.13	D3	112.17**	7.31
D2	107.70**	7.04	D2	110.07**	7.21
D1	104.24**	8.14	D1	107.07**	8.43
A2	-4.740**	1.626	A2	-4.277**	1.564
A3	-5.829**	1.395	A3	-4.607**	1.292
A4	-4.954**	1.125	A4	-2.963**	1.033
A5	-2.310*	0.952			
A7	-1.900	1.007			

Note: Significance level is 1% for items marked ** and 5% for items marked *.

ratchet effect. But the explanation of Hayashi (1994), who postulates an unintended increase in savings upon growth in income, might be closer to the mark, especially with respect to the impact of income levels. In the previous section we argued that stagnant incomes lead to a jump in saving rate; here we point out that when incomes rise further than expected as happened during Japan's rapid-growth phase, the overall consumption level cannot keep up, resulting in a higher saving rate.

The difference with the preceding generation in rate of income growth ($\Delta GYD_{i,t}$) has a positive coefficient. Thus, when there is a shift in overall income level compared to the previous generation, an improved outlook for lifetime income seems to boost propensity to consume. This implies that, as we saw in Section I-3, the slowdown in economic growth has reduced propensity to consume. Finally, the sign of the active opening rate, JOR, was negative as expected, although the significant level was not low enough.

The regression results excluding housing costs are listed on the right-hand side of Table 2-2. The results, including the signs of coefficients, were similar to those obtained when housing costs were included, although there were slight discrepancies in the age-group dummies and YD was excluded as not being significant. As with the observation given in Figure 2-2, fluctuations in residential loan repayments were not enough on their own to account for generational differences in propensity to consume.

Let us turn now to the generational dummy coefficients, which cannot be accounted for by the explicit variables above. Regardless of whether housing costs are included, the dummies gradually increase up to and including the generation born in 1946-50 (the so-called baby boomers with the dummy D_{10}) then go into decline.²⁵ Figure 2-5 shows, as of 2000, the deviation from D_{10} for the generations since the baby boomers, which together make up today's workforce. We mentioned above the possibility

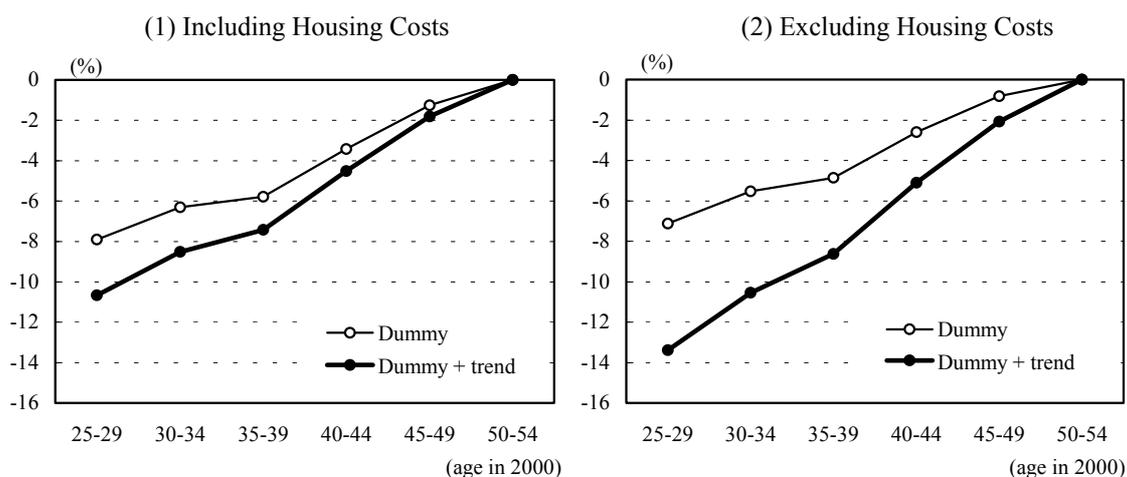


Figure 2-5. Generational Effect on Propensity to Consume

- Notes:
1. These graphs show how much the generational effect for each age group deviates as of 2000 from that for the cohort aged 50-54 (D_{10}).
 2. Figure 2-5(1) uses the figures for consumption expenditure given in the FIES. Figure 2-5(2) uses estimates of consumption expenditures excluding housing costs.
 3. The dummy represents the effects picked up by generational dummies; trends represent linear effect at the time of each survey.

²⁵ As Table 2-1 shows, data from under age 24 are available only for D_{10} and subsequent generations, but the period over which the data were gathered seems an unlikely source of the problem, since the same generational effect peaking at D_{10} is obtained even when the beginning and end of the estimation period are altered slightly.

that γ_t might include a generational element, and this has been factored into “Dummy + trend.” In the case of the baby boomers, who experienced the Oil Shock and the transition to low growth immediately after entering the workforce, and of those born after them, such generation-specific factors as outlook for lifetime income appear to have diminished propensity to consume. These generation-specific factors cannot necessarily be reduced to non-economic causes, such as cultural trends; one suspects the influence of factors that cannot be explicitly accounted for due to limitations in the regression model and variables used. Numerous possibilities come to mind, including likely tax hikes to pay off government debt, reductions in retirement packages, a rise in real interest rates and drop in real estate prices due to deflation, and the ballooning cost of medical and nursing care due to prolonged life expectancy. In the next two sections we consider how these generational factors might be explained,

focusing specifically on public pensions and the employment climate.

3. Generational Differences in Public Pensions

The question of public pensions rapidly came to the fore as the economic climate deteriorated over the course of the 1990s.²⁶ Pensions directly affect generational differences through their function of social redistribution via contributions and benefits. Figure 2-6(1) shows generational differences in net lifetime benefits (total benefits minus total contributions) in Welfare Pension based on Government recalculations conducted in 1999. Benefits decrease the younger the generation. Given the fact that pensions are designed to guarantee one’s livelihood after retirement in the midst of a growing economy, that trend is quite natural. But birthrates and investment yields have continued to worsen despite what the estimates assume,

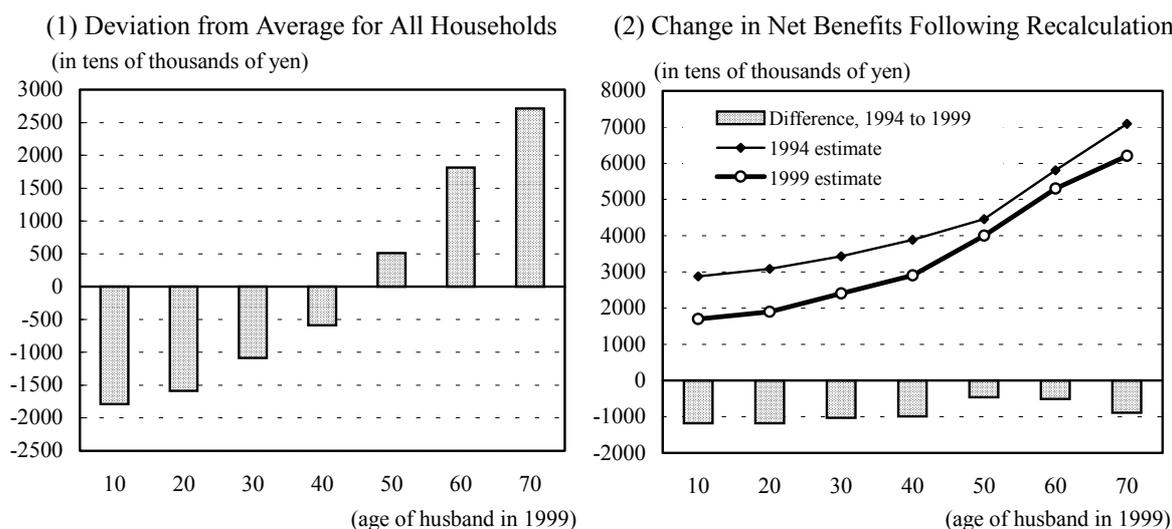


Figure 2-6. Generational Differences in Net Lifetime Welfare Pension Benefits

- Notes:
1. Net benefits equal benefits minus contributions as worked out based on the recalculated Welfare Pension estimates for each generation. The amounts give totals for husband plus wife.
 2. (1) shows deviation from the simple average of net benefits for generations aged ten through seventy in 1999.
 3. (2) compares net benefits for individuals (husbands) born in the same year, with the 1994 estimates converted to 1999 prices in accordance with the Consumer Price Index.

Sources: Actuarial Affairs Division, Ministry of Health and Welfare (1995, 2000).

²⁶ Nakagawa (1999) observes that the number of articles on pensions appearing in weekly and monthly magazines increased rapidly during the late 1990s.

and there are fears that the present working generation or even generations as yet unborn could face an excessive burden.²⁷

Figure 2-7 compares attitudes to public pensions in 1985 and 2001. As we saw in Figure 1-12(3), confidence has plunged, especially among young people. In addition, an estimate was made of level of confidence in 1985 for the four age groups over forty in 2001; this is shown as “1985 (estimate)” on the graph. As comparison with the actual results for 2001

shows, confidence has declined dramatically in the younger stratum of this segment of the population.²⁸ Although Figure 2-6(2) offers no evidence that generational differences have increased in the government recalculations for 1999 as compared to 1994, the younger generation of consumers in particular seems to have become both more aware of and more pessimistic about pensions and may already be resigned to a deterioration in pension finances.

Such a decline in confidence in the pension

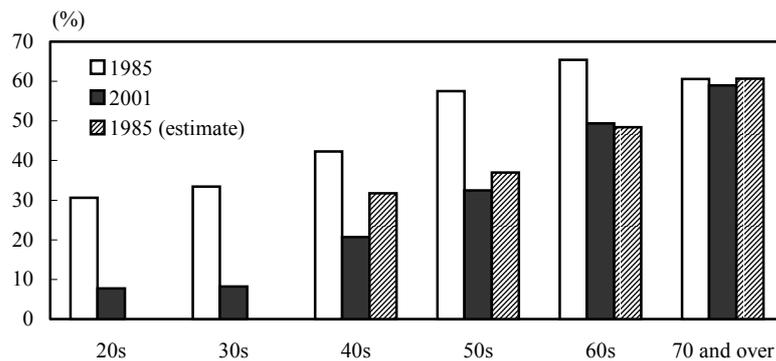


Figure 2-7. Confidence in the Public Pension System

- Notes:*
1. Percentage of respondents who answered either “Fully” or “To a certain extent” to the question “How much do you think you can depend on the public pension system for your livelihood after retirement?”
 2. “1985 (estimate)” shows the level of confidence of the four age groups over forty in the 2001 survey as extrapolated back to 1985. For example, the figure for the 40s age group is an average of those in their 20s and 30s in the 1985 survey as weighted 6:4.

Source: Cabinet Office, “National Survey on Lifestyle Preferences.”

²⁷ Another recalculation is scheduled to take place by 2004 based on a downward revision in birthrates, with such assumptions as economic growth and investment yields also to be revised. According to non-government estimates, younger generations will end up paying out more than they receive. Hatta and Oguchi (1999) draw the dividing line at the generation born in 1962, Aso (2000) that born in 1960, and the Forum for Policy Innovation (2001) that born in 1957. These results are all roughly in agreement. Managing Japan’s pensions is thus becoming a more formidable task than ever, although Takayama (2000) emphasizes that the degree of difficulty will vary greatly depending on the level of benefits and age at which they start. It should also be kept in mind that income redistribution through pensions involves many different strata: single versus married, one versus two incomes, different levels of earnings and so forth.

²⁸ In Figure 2-7 confidence falls the younger the age group; this is in contrast Figure 1-12(3), in which concerns about pensions and insurance are greatest among old people. The apparent contradiction can be explained by the fact that the question in Figure 2-7 focuses specifically on public pensions, while in Figure 1-12(3) respondents were able to cite more than one source of concern; therefore young people’s answers were dispersed among size of retirement package, buying a home, rent and other such issues of concern to their generation.

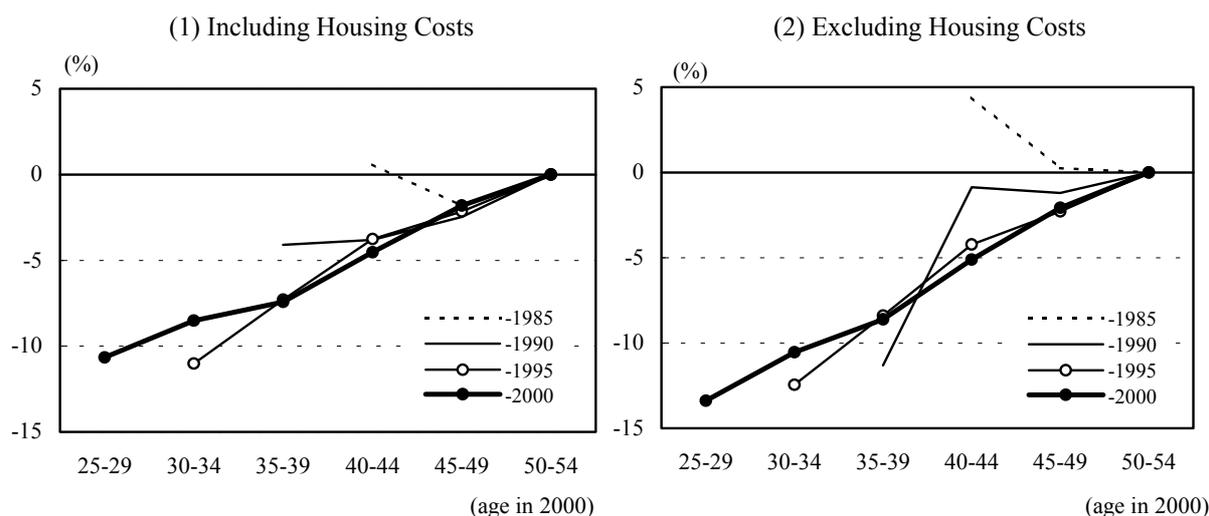


Figure 2-8. Generational Effect As Estimated over Different Periods

- Notes: 1. These graphs show how much the generational effect for each age group deviates as of 2000 from that for the cohort aged 50-54 (D_{10}).
2. The estimates based on the data through 1995 and 2000 combine generational dummy plus trend; those based on the data through 1985 and 1990 indicate only the dummy portion, since the trend is not significant.

system, which functions as a form of compulsory savings, is one of the factors that fuels an increase in private savings and pensions. As we saw in the preceding section (Figure 2-5), the generational effect pushes down propensity to consume in and after the baby-boom generation, which is a result consistent with the ever greater disadvantage at which younger age groups find themselves in the redistribution of public pensions. Nonetheless, when the generational effect is recalculated with the cutoff year of the sampling period in 1995, 1990, and 1985 (Figure 2-8),²⁹ the effect for each cohort has shown no tendency to worsen in recent years. Since the state of pension finances is closely tied to economic growth rate, it could well be the case that the change in attitude to pensions has already to a certain extent been factored into the income environment, which is given as explicit explanatory variables.

4. The Impact of Job Uncertainties on Expected Income

In the regression analysis above, the coeffi-

²⁹ However, certain non-significant explanatory variables have been excluded.

icients representing impact of the employment situation were not significant, although they satisfied the sign conditions. Here, in order to form a more intuitive picture of the impact of the employment situation on workers, we calculate the percentage by which expected income decreases due to a deteriorating employment situation.

Figure 2-9 provides an overview of annual workforce turnover. The number of individuals leaving jobs over the course of the year totaled 7.45 million, equivalent to over one tenth of the employed population. Of these a total of 1.51 million left their jobs involuntarily, of whom 950,000 found new jobs and 560,000 remained unemployed.³⁰ Below we use the terms probability of job change and probability of unemployment to refer to the percentage of actual workers as of one year before (52.67

³⁰ The Survey on Employment Trends, a detailed survey of workforce turnover in places of business conducted by the Ministry of Health, Labour and Welfare, gives the number of those leaving their jobs in 2001 as 7.01 million. Here, since we are also concerned with scale of unemployment and number of individuals leaving the workforce, we use the Labour Force Survey: Special Survey (now the Labour Force Survey: Detailed Tabulation), which presents statistics by household.

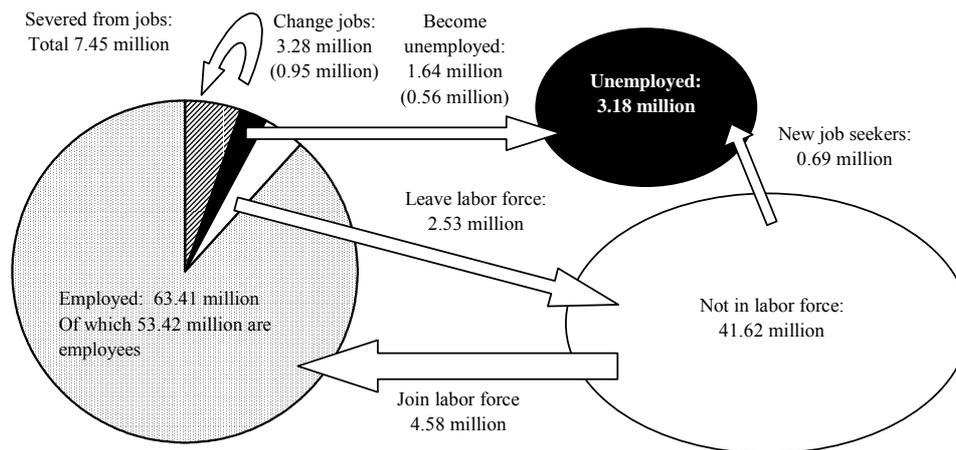


Figure 2-9. Annual Workforce Turnover

- Notes:*
1. The figures for circulation of workers give totals for the one-year period ending in February 2001; size of workforce, number of unemployed, and the figure for the non-working population are as of the end of February 2001.
 2. The numbers in brackets following the figures for persons who change jobs and for those unemployed indicate the number of people who were involuntarily severed from their jobs.

Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Labour force survey: Special Survey."

million) changing or losing jobs; the sum of the two is termed probability of severance. This probability can only be obtained ex post, but here we postulate that the average worker has a fairly accurate perception of his or her risk of involuntary severance and forecasts income on that basis. The calculations exclude cases of severance upon an individual's reaching retirement age, which are predictable. They also omit cases in which an individual who has been laid off gives up trying to find a new job and leaves the workforce completely (and therefore does not match the definition of "completely unemployed"), since he or she clearly has little need to work.

Next we consider the percentage by which income drops depending on whether the person laid off finds a new job or remains unemployed. Based on a survey conducted by the Japan Institute of Labour in 1998-99, it is assumed that wage levels drop a uniform 24.5% upon a change in jobs.³¹ It is also assumed that, while

seeking work, unemployed persons receive 70% of their previous salary in the form of employment insurance for the first six months after losing their jobs, while those who find new jobs receive the same amount for the whole period up until they resume working.³² This assumption is made because, although the time it takes for job seekers to find new jobs has lengthened since 1995 (Figure 2-10), on average it still remains within the period covered by unemployment insurance. Percentage drop in income is calculated assuming that those finding new jobs

for voluntary reasons, such as in search of better working conditions, accounted for a mere 10% or so. According to figures in the annual Wage Census (Basic Survey on Wage Structure) showing differences in wages depending on number of years on the job, a worker with zero years on the job makes 40% less than the overall average. However, this wage gap should not be taken as indicative of the amount by which a person's salary will fall upon changing jobs, because it could be the result of differences in attributes between individuals who change jobs and veteran workers.

³² Basic unemployment insurance benefits equal 60-80% (depending on salary level) of regular wages excluding bonuses over the previous six months, with a cap according to age (around ¥10,000 per day). Benefits last between 90 and 360 days depending on age, length one has been enrolled in employment insurance, reason for leaving one's previous job and so forth.

³¹ See Ito et al. (2001). This is one of the few surveys that captures in real numbers how changing jobs affects wages. It covers job seekers visiting public employment agencies including those who left work of their own accord, although the number who indicated that they quit their jobs

(1) Number of Persons Finding New Jobs over the Past Year As Classified by Length of Job Search

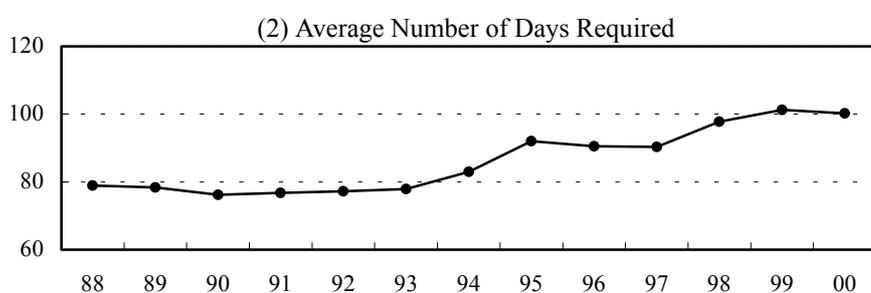
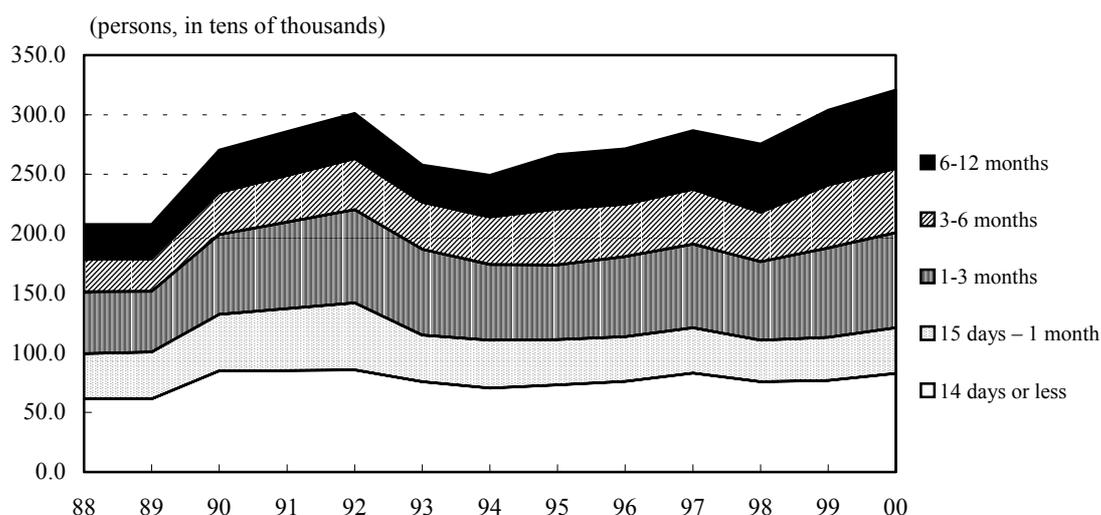


Figure 2-10. Number of Days Required to Start Work Again

Note: Average number of days required was computed by working out the weighted average for the median of the periods given in (1).

Source: Ministry of Health, Labour and Welfare, "Survey on Employment Trends."

resume work at lower wages than before following a period of unemployment, and that those remaining unemployed lose their source of income upon expiration of their unemployment benefits.

Percentage drop in expected income is then calculated by weight-averaging the drop in income for each of the scenarios above according to its probability. As the bar graph (Figure 2-11) shows, risk of unemployment has risen since declining to a low point in 1990, while drop in expected income has climbed in tandem from 0.36% in 1990 to a peak of 1.24% in 1999 and still remains above 1%. This suggests that, even when employment was ultimately maintained, heightened employment risk lowered expected income and thus acted as a brake on all consumption tied to income outlook. Fur-

thermore, an increase in employment risk is no longer a temporary phenomenon, and there is little room for the ratchet effect to kick in to maintain the former consumption level.

Rise in wages has declined by more than 5% since 1990, from over 4% to a post-1998 level of somewhere around minus 1%. The amount by which employment risk drives down expected income may appear relatively small by comparison. One reason for this is that we have restricted our examination of the effect of employment risk on income to the immediately coming year. However, it is possible that an individual could remain unemployed into a second year or beyond. The likelihood of that happening is not great, but if it does the worker will completely lose her source of income as employment insurance will have expired. Fur-

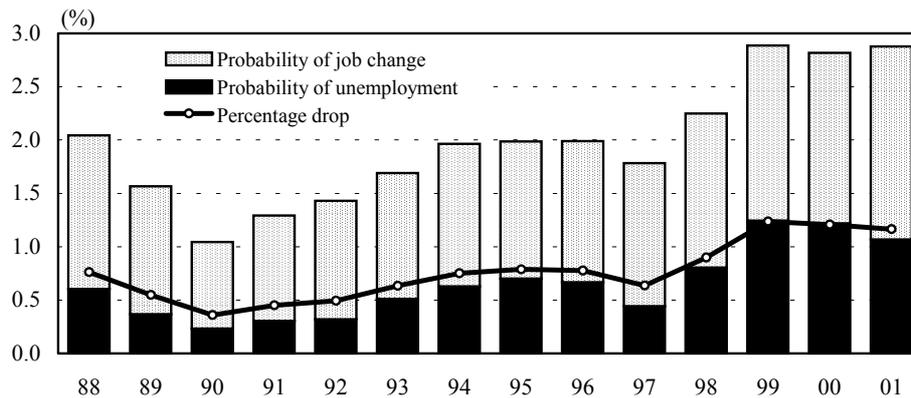


Figure 2-11. Probability of Severance and Percentage Drop in Expected Income

Note: Percentage drop in expected income is calculated for two scenarios following involuntary severance: (1) The worker remains unemployed and loses his or her income. (2) The worker finds a new job after a period of unemployment, but at a salary level 24.5% less. It is assumed that employment insurance benefits equivalent to 70% of pre-severance income are paid, for six months in the case of Scenario 1, and for the whole period during which the person is seeking work in the case of Scenario 2.

Sources: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Special Survey of the Labour Force Survey," Ministry of Health, Labour and Welfare, "Survey on Employment Trends," Ito et al. (2001).

thermore, since we have assumed a fixed probability each year of a decline from initial income, the drop in expected income increases with the lapse of time.³³ A vicious circle may even be set in motion: after someone is laid off once, the risk of being laid off again increases upon starting a new job, and wages will fall even further if the person has to seek yet another position. Therefore involuntary severance cannot be considered on the same level as fluctuations in wages when employment is relatively secure, for it fuels uncertainty about future income because of increased risk over the long term.³⁴

Next we compare percentage drop in expected income among different age groups. Figure 2-12 shows probability of a job change or unemployment following severance. The situation has worsened among all age groups with the passage of time. The over-55 age group saw its unemployment rate soar in 1999, when a wave of job cuts swept through the economy, but overall younger people have a higher severance rate. Figure 2-13 shows difference in wages upon changing jobs. Again, the situation has worsened among all age groups, although middle-aged and older

³³ Of the 560,000 people involuntarily severed from their jobs in Figure 2-9, 150,000 were still unemployed a year later (Labour Force Survey: Detailed Tabulation for January-March 2002). Assuming that the remaining individuals found new jobs, the drop in their expected income as compared to their original income would work out to 2.1% in the second year as opposed to 1.2% in the first year.

³⁴ This analysis does not take into consideration the fact that consumers are risk averse. If it did, the impact on them would be even greater. The supplementary table at the end of this paper shows percentage drop in expected income for the three scenarios considered above: keep employed, change of jobs, and severance. The percentage drop in expected income above was calculated by weight-averaging the drop in income for each scenario

according to its probability. But if, assuming that all income is channeled into consumption, one works out the weighted average of utility levels, then the percentage drop in income at the certainty equivalent (which yields the same level of utility as when no uncertainty exists; (a) in the table) turns out to be greater than the simple drop in expected income. A relative risk avoidance of up to around 5 is considered reasonable, but even at that level the impact amounts to a drop in income of 10% at the certainty equivalent. Although a more rigorous analysis is needed, including a definition of the utility function, it is fair to say that, when uncertainty is factored in, deterioration in employment climate has a greater negative impact than does a reduction in wages when the employment situation is stable.

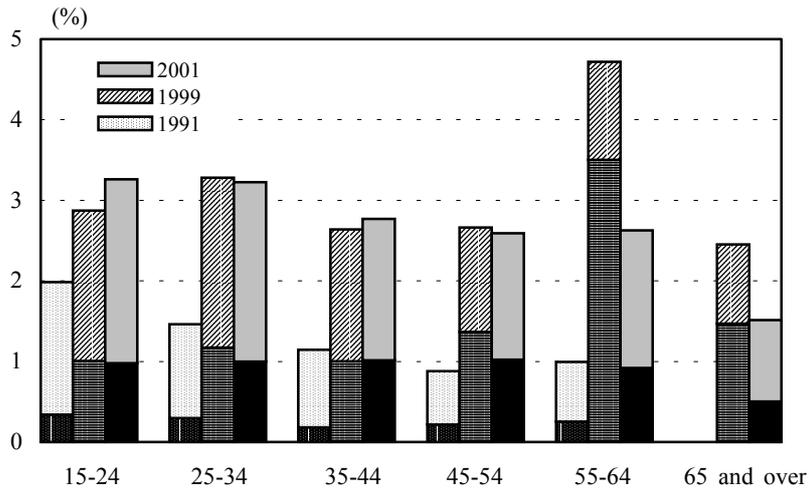


Figure 2-12. Probability of Involuntary Severance by Age Group

Note: The darker shading indicates percentage unemployed after severance.
Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Special Survey of the Labour Force Survey."

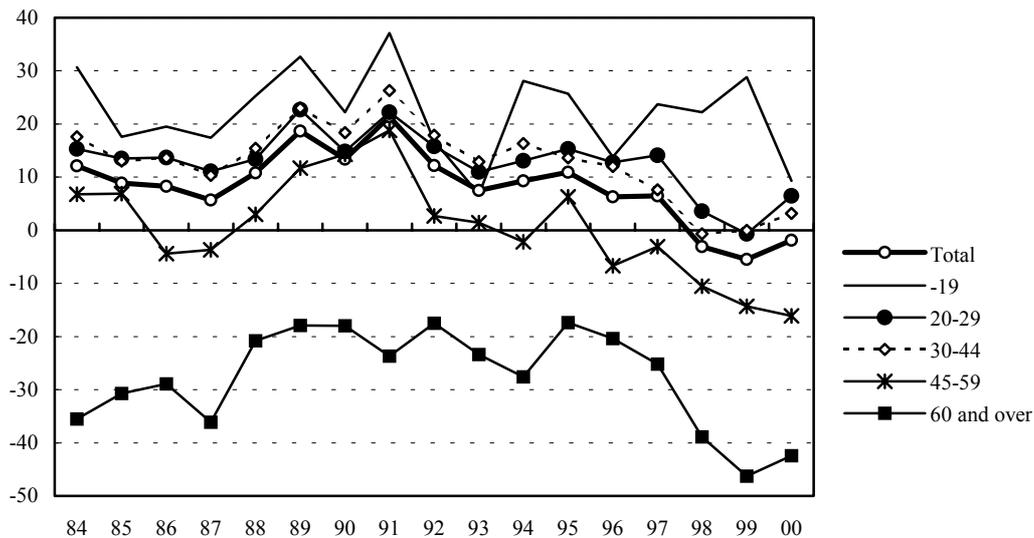


Figure 2-13. Difference in Wages upon Changing Jobs: DI by Age Group

Note: Percentage of individuals changing jobs whose wages rose more than 10% minus percentage whose wages dropped more than 10%.
Source: Ministry of Health, Labour and Welfare, "Survey on Employment Trends."

workers have experienced a particularly severe drop. Under the seniority system, these workers are the most pampered in terms of salary and other benefits as long as they are employed. But when major adjustments set in upon which the fate of the whole company hangs, their risk of being laid off shoots up quickly. Then, once they are turned out onto the labor market, the seniority advantages that they enjoyed within the company evaporate, and they have to accept far more stringent conditions.

In working out drop in expected income, figures for the amount by which annual income fluctuates in each age group due to changes in jobs were taken from the same survey as used above. For probability of job change and unemployment the numbers for 2001 in Figure 2-12 were used (Table 2-3). The high probability of severance among the young, who are often forced to change jobs, offsets the larger loss in income experienced by older workers in job changes, with the result that the drop in expected income is roughly the same in all age groups.

Let us consider the impact of these results on lifetime income. As noted above, upon severance from a job, one's relative lack of experience or even the very fact of having been laid off can act as an obstacle that cumulatively heightens one's employment risk. Moreover, the deterioration in employment climate is a relatively recent phenomenon that only became pronounced in the 1990s. The impact of employment risk may differ only slightly among age groups when viewed for a short span such as a year, but the effect on lifetime risk is going to be more serious on the younger generation, which has a longer employment period ahead of it. Although the explanatory variables such as active opening rate used to gauge employment climate in the calculations in Section 2 do reflect the short-term employment climate, they do not really take account of impacts over the course of people's future working life. The impact of a worsening employment climate on lifetime income might be, as in the case of pensions, consistent with a generational effect that curbs consumption more the younger the age group.

Table 2-3. Percentage Drop in Expected Income upon Severance by Age Group
(in percent)

	Difference in Income upon Changing Jobs	Probability of Severance		Drop in Expected Income
		Probability of Job Change	Probability of Unemployment	
Overall Average	-24.5	1.82	1.08	1.18
29 and under	-11.2	2.26	0.99	1.04
30-39	-13.1	1.99	1.01	1.04
40-49	-17.7	1.66	1.02	1.03
50-59	-33.4	1.64	0.97	1.16
60 and over	-54.5	1.36	0.71	1.06

Note: For assumptions and sources, etc., see text and Figures 2-11 and 2-12.

III Generational Differences and Future Consumption

1. Generational Differences in Asset Ownership

In the previous chapter we saw how a downward revision in outlook for future income and increasing uncertainty have an adverse effect on consumption, particularly among those of working age. In this chapter we examine trends in saving balances, which likewise fund consumption. While there is uncertainty in terms of the yield on deposits, there is little uncertainty when it comes to the principal itself, in part because people have become more risk-averse these days. Moreover, although interest is close to zero, real interest rates are in the plus column once deflation is factored in. The household sector owns a total of over 1,400 trillion yen in financial assets, and holdings per capita also remain solid (see Figure 1-16). These assets have the potential to buoy up future consumption.

Figure 3-1 compares the ratio of annual consumption expenditures to financial assets in the Japanese and US household sectors.³⁵ The ratio has remained large steady in the US, while in Japan it declined until 1989 as the economy grew, reflecting historical differences in accumulation of assets.³⁶ Then came the 1990s. In the US the ratio dropped between 1994 and 1999 because the denominator (financial assets)

³⁵ This figure is equivalent to that obtained according to the model in Figure 2-4 using the lifetime averages for a model household and assuming no generational differences in population, income, etc. In that case savings form a triangle that peaks at retirement ($R \cdot \bar{C}$); thus, if ratio of lifetime average consumption to savings is $2/R$ with $R=20$, the result is 0.1. The higher numbers in Figure 3-1 can be explained by such factors as the greater contribution to economic growth of the younger generation, where the ratio is higher, and the fact that the denominator does not include real assets, which are of comparable magnitude to financial assets.

³⁶ By about 1990 the US and Japanese ratios stood at around the same level. However, because of structural discrepancies, including problems of definition and a difference in the ratio of financial to real assets, and because the Japanese ratio underwent a fundamental shift in pattern with the collapse of the bubble, the two countries cannot be said to have converged.

increased thanks to the rise in stock prices that continued through the first half of 2000; since 2000 it has again climbed as assets decline in value. In Japan, meanwhile, the ratio has fallen although asset prices shrunk following the collapse of the bubble economy at the beginning of the 1990s. Japanese financial assets have thus continued to grow over this period, evidently because households have striven to cut back on consumption expenditures and top up their savings. This ongoing reduction in spending and increase in deposits, which followed in the wake of a dramatic plunge in Japan's stock of real assets, form the backdrop to the ratio's decline.

Even granted that Japan's massive financial assets were built up as the result of belt-tightening, savings, which are intended to fund future consumption, are now double what they were in 1980 relative to consumption expenditures. Below we consider the potential for an expansion in consumer spending, concentrating primarily on how formation and ownership of financial assets differ by age group.

First we examine ownership of assets by age of head of household and breakdown of types of assets at ten-year intervals beginning at the end of 1970 (Figure 3-2). In terms of age, there has been a straightforward shift in the form of a gradual increase in the percentage of assets owned by the older generation. As can be seen from examining the individual cohorts, the generation of household heads aged 35-44 at the end of 1970 has remained the largest holder of savings right through to the end of 2000, when it reached age 65.

In terms of asset breakdown, stocks and bonds enjoyed a temporary surge at the end of 1990, but by the end of 2000 life insurance, currency deposits, and term deposits had gained ground. While stocks and bonds have consistently accounted for a high proportion of assets owned by seniors, there has over the past decade been a rapid shift to term deposits. This testifies to the considerable impact on investment patterns in the economy as a whole exerted by the increasingly risk-averse fund management of this generation, which after all owns such a large share of assets.

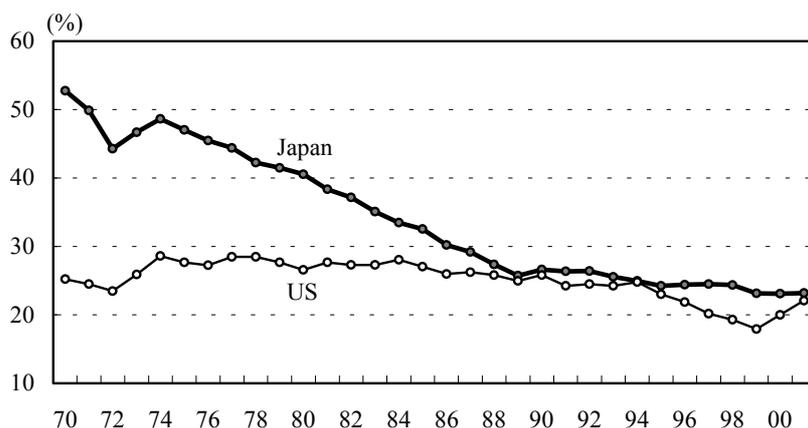


Figure 3-1. Ratio of Consumption Expenditures to Financial Assets

- Notes: 1. Annual consumption expenditures divided by balance of financial assets at year's end (nominal value).
 2. The numbers for Japan through 1997 are from 68SNA; those for 1998 and subsequent years are based on the ratio fluctuations in 93SNA.
 3. US financial assets include those of private-sector non-profit organizations.
- Sources: Cabinet Office, "System of National Accounts," Bank of Japan, "Flow of Funds,"
 US Department of Commerce, Survey of Current Business, and FRB, "Flow of Funds."

Figure 3-3 plots savings per household. As Figure 3-3(1) shows, the rate of increase slowed down in all age groups during the 1990s; among those under thirty it actually showed no increase. In the same decade net savings, savings minus liabilities, fell back to the level of 1980 among those under fifty (Figure 3-3(2)). Between 1990 and 2000 prices rose a total of 8.6% despite weakening inflation, which means that over the decade net savings declined in real value among all age groups under sixty.

Seniors, who today own the largest share of savings, experienced rapid growth in income during their working years, and an unplanned surge in savings appears to have contributed to their buildup of assets. The increasing percentage of seniors in the population has also fueled the concentration of financial assets seen in Figure 3-2. Under these circumstances Japan's massive pool of financial assets fails to function as a buffer for those of working age, among whom consumption has slumped noticeably. On the contrary, the working generation has suffered a decline in the real value of its net assets.

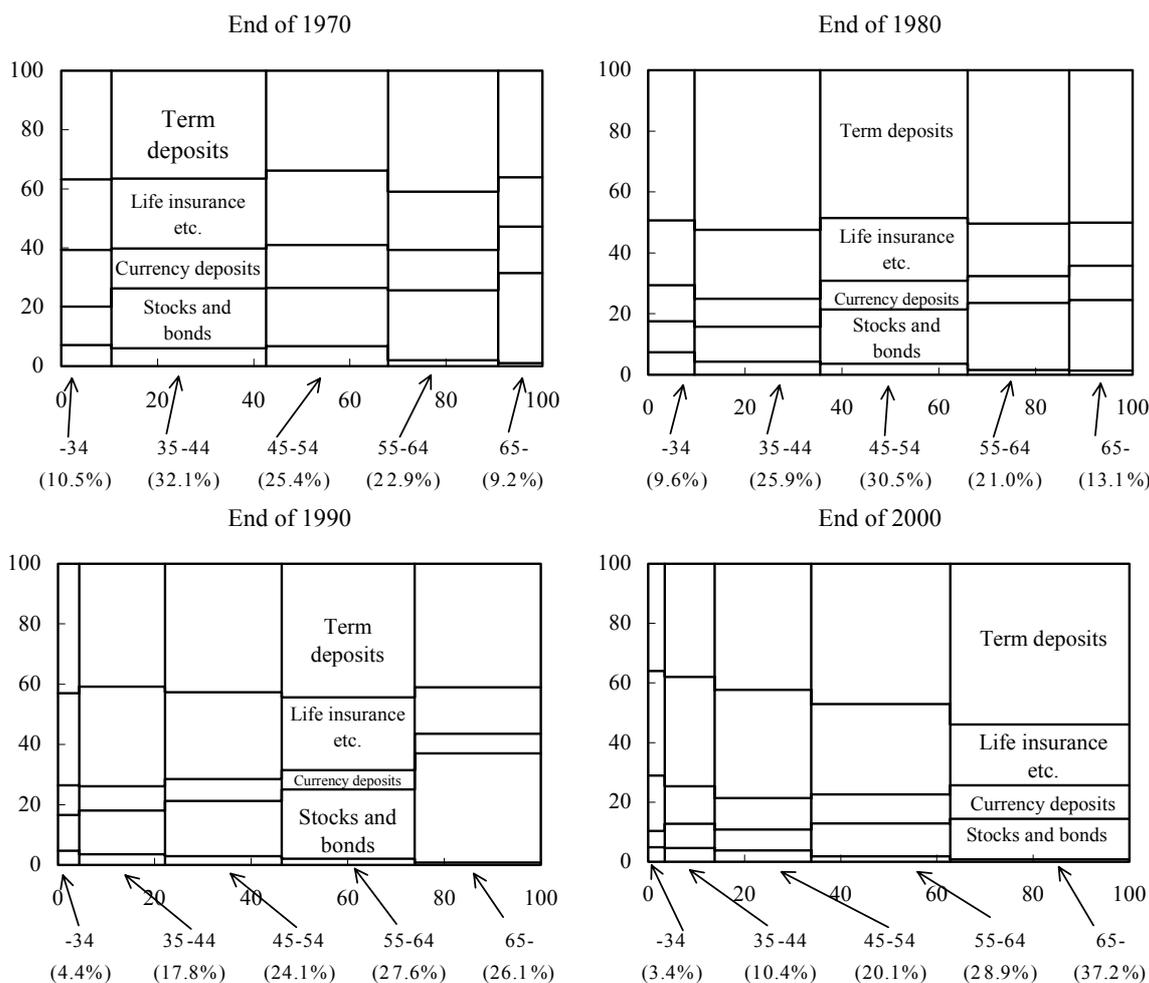
However, purchase of a home accounts for the lion's share of the typical household's financial liabilities,³⁷ and when examining the

household balance sheet one must consider the significance of such real assets. Their value is difficult to assess since it is not uniquely determined, plus there is the problem of underreporting. Moreover, there are limits to the practicality of selling off something like a residence to fund consumption. With respect to the latter, the attractions of reverse mortgages have been rehearsed repeatedly.³⁸ Yet, as Ishikawa and

focuses on households with two or more members, liabilities for housing and land made up 86.0% of the balance of liabilities as of the end of 2000. According to the Flow of Funds Accounts, at the same point in time the balance of housing-related debt accounted for 55.2% of total debt and 75.1% of debt excluding loans etc. relating to operation of proprietorships.

³⁸ A reverse mortgage is an arrangement whereby a homeowner borrows money on a monthly basis on condition of transferring ownership of the land and buildings upon death. It allows seniors to continue living in their homes while tapping the property's future residual value to fund consumption. In Japan certain local governments and financial institutions started offering reverse mortgages in the 1980s, but the number of people taking advantage of them has been minuscule, because lenders are wary of the risk of longevity and find it difficult to determine interest rates and property values, while borrowers face the risk of early death and are often unhappy with the assessed value of their homes. According to the National Survey on Lifestyle Preferences, 21.9% of people are interested in reverse mortgages, of whom some 70% stated that they would like to arrange.

³⁷ According to the Survey of Savings Trends, which



Graph Data (Percentage of Total)

End of 1970		-34	35-44	45-54	55-64	65-	Total
Term deposits		3.8	11.7	8.6	9.4	3.3	36.8
Life insurance etc.		2.5	7.6	6.4	4.5	1.5	22.5
Currency deposits		2.0	4.3	3.7	3.1	1.4	14.6
Stocks and bonds		1.4	6.5	5.0	5.4	2.8	21.1
Non-financial institutions		0.7	1.9	1.7	0.5	0.1	4.9
Total		10.5	32.1	25.4	22.9	9.2	100.0

End of 1980		-34	35-44	45-54	55-64	65-	Total
Term deposits		4.7	13.6	14.8	10.6	6.6	50.2
Life insurance etc.		2.0	5.9	6.3	3.6	1.8	19.7
Currency deposits		1.1	2.3	2.8	1.9	1.5	9.7
Stocks and bonds		1.0	3.0	5.4	4.6	3.0	17.1
Non-financial institutions		0.7	1.1	1.1	0.3	0.2	3.4
Total		9.6	25.9	30.5	21.0	13.1	100.0

End of 1990		-34	35-44	45-54	55-64	65-	Total
Term deposits		1.9	7.2	10.3	12.2	10.7	42.4
Life insurance etc.		1.3	5.9	7.0	6.7	4.0	24.9
Currency deposits		0.4	1.4	1.8	1.8	1.7	7.1
Stocks and bonds		0.5	2.6	4.4	6.3	9.5	23.3
Non-financial institutions		0.2	0.6	0.7	0.6	0.2	2.4
Total		4.4	17.8	24.1	27.6	26.1	100.0

End of 2000		-34	35-44	45-54	55-64	65-	Total
Term deposits		1.2	3.9	8.5	13.6	20.1	47.4
Life insurance etc.		1.2	3.8	7.3	8.8	7.6	28.7
Currency deposits		0.6	1.3	2.1	2.8	4.2	11.1
Stocks and bonds		0.2	0.9	1.4	3.2	5.0	10.7
Non-financial institutions		0.2	0.5	0.8	0.5	0.3	2.2
Total		3.4	10.4	20.1	28.9	37.2	100.0

Figure 3-2. Ownership of Assets by Age of Head of Household and Breakdown of Types of Assets

- Notes: 1. The bottom tier of each graph represents savings at non-financial institutions.
 2. In each graph the types of assets are listed in the column representing the age group owning the largest overall share.

Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Family Savings Survey."

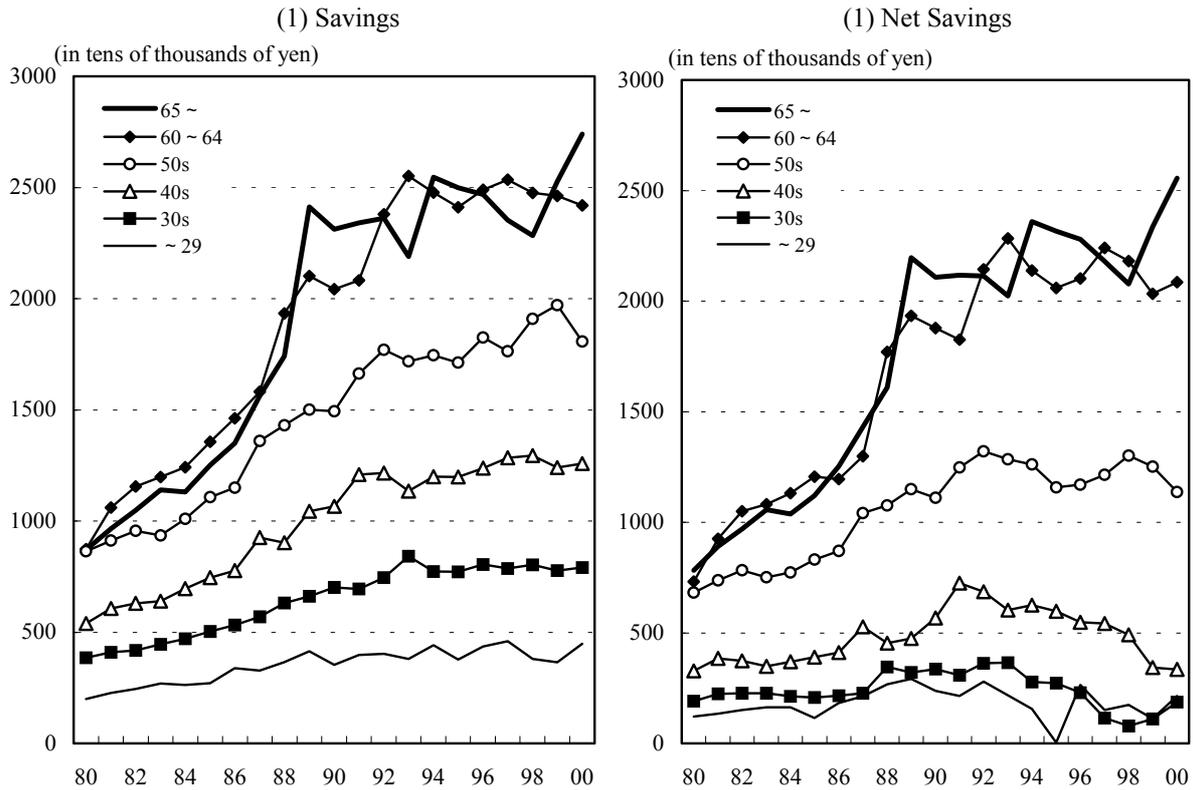


Figure 3-3. Net Savings by Age Group

Note: Net savings = savings – liabilities.

Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, “Family Savings Survey,” savings as of the end of each year

Yajima (2002) and Horioka et al. (2002) observe, seniors’ households prefer to dig into their financial assets instead and typically plan to leave behind a bequest roughly equivalent to the market price of their real estate. Real assets are viewed as something to bestow on the next generation, and it is difficult to determine whether or not they will eventually be channeled into consumption.³⁹

Figure 3-4 shows value of assets, including real assets, by generation. According to these estimates, real assets exceed financial assets in all age groups, and intergenerational differences are even more striking. Although the above analysis suggests that there is still room for de-

³⁹ This is based on Institute for Posts and Telecommunications Policy, “Survey of Household Choices of Financial Assets.” As averaged out for age, income, region, and other categories, the typical value of a planned bequest is equivalent to 70-100% of the market price of the real estate owned.

bate on the question of the connection between real assets and stimulating consumption, the fact remains that the older the age group, the larger its assets, both in terms of financial assets alone and when real assets are added.⁴⁰

⁴⁰ This analysis is not an attempt to compare lifetime level of wellbeing between generations. While the slowdown in economic growth has a greater negative impact on the younger generation, that generation might also appear to enjoy higher levels of income and consumption in absolute terms. However, strictly speaking it is not possible to compare different generations for lifetime level of wellbeing, even as limited to material satisfaction alone. Nonetheless, in discussions of public pensions and taxes, which involve redistributing wealth between generations, more practical standards, such as net sliding and generational accounting, have been proposed that are sustainable and allow valuation in monetary terms, which helps in formulating consensus.

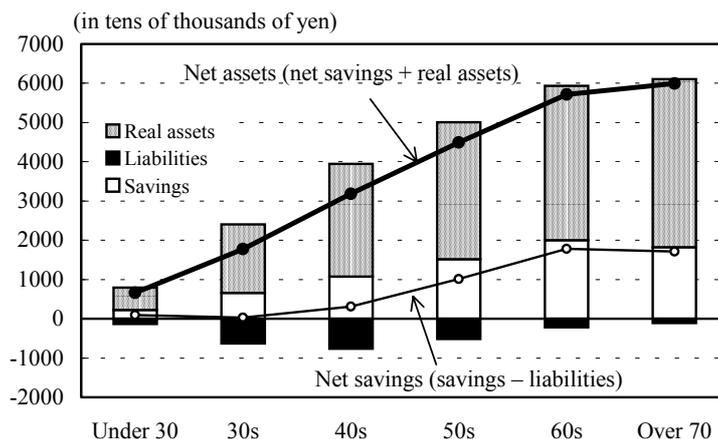


Figure 3-4. Assets Including Real Assets

Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "National Survey of Family Income and Expenditure." (1999), Total households

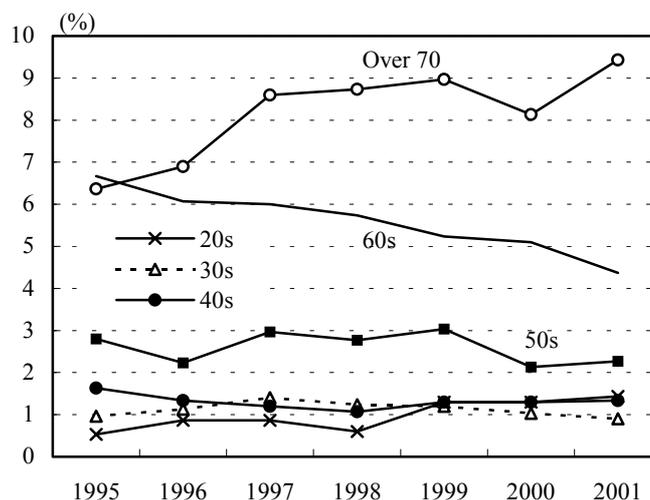


Figure 3-5. Percentage Citing Bequests As Motive for Saving

Source: Central Council for Financial Services Information, "Public Opinion Survey on Financial Assets of Households."

It might be hoped that seniors would channel their plentiful savings into consumption, but, as Figure 3-5 indicates, older people have a greater tendency to cite the desire to leave a bequest as their motive for saving. This may be due to the loss of other reasons to consume, and it does not mean an actual increase in the amount people plan to leave in their wills. However, individuals do not raise their consumption schedules for their remaining lifetime

even if they become aware of the extra savings at their disposal; thus the consumption potential of seniors households has increased, even taking into consideration such factors as longer life expectancy. Certainly, bequests are one way to use financial assets,⁴¹ but if seniors' purchasing

⁴¹ In terms of strategic motive, bequests are regarded as countervalue for taking over one's business, caring for one in old age, providing company and so forth.

power is currently not being activated, then opportunities for economic growth and, by extension, for income gains are being lost.

The above discussion uses averages for each age group. It should be noted, however, that differences in amount of savings within each age group increase with age. Figure 3-6 shows amount of savings within each age group by percentile. While amount of savings at any given quantile increases the older the generation, so too does the absolute gap in savings within each generation. This can be attributed to the cumulative effect of income differences as well as to property inherited from the parent's generation.

This intragenerational gap widened throughout the 1990s. Even though financial assets have on average grown (see Figure 1-16), the percentage of households stating that their savings have decreased is on the rise, as Figure 3-7 reveals.⁴² This tendency can be observed in every age group including seniors (Figure 3-7(2)); indeed, intragenerational differences appear to be widest among seniors, which is the very age group that has traditionally had the most savings on average. While one should keep in mind that each generation is not completely homogeneous, it is to be hoped that the purchasing power of wealthy seniors in particular can be tapped.

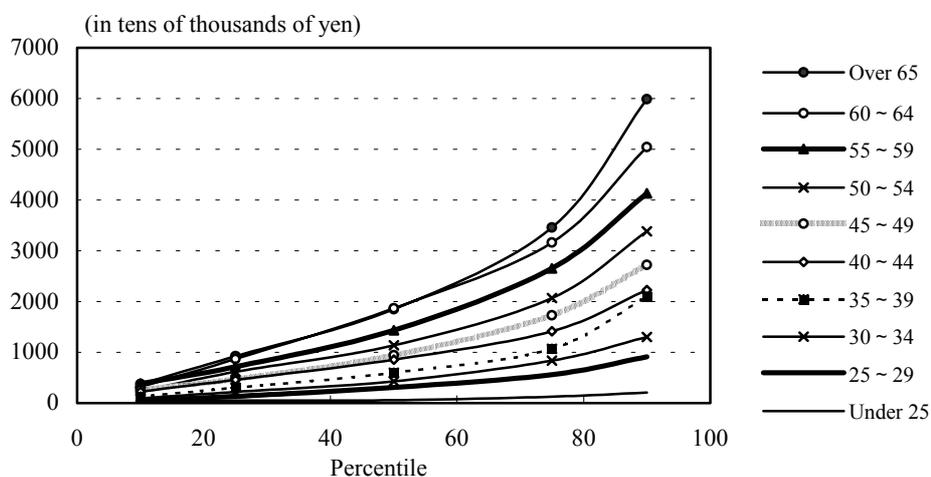


Figure 3-6. Distribution of Savings within Age Groups

- Notes:*
1. This graph plots amount of savings at the 10, 25, 50, 75, and 90% quintile from the bottom as joined together in a smooth line.
 2. As of the end of 2000.

Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Family Savings Survey."

⁴² Among the main reasons for the decrease are lower earnings, the cost of paying for one's children's education and marriages, and purchase of durable goods, although falling income is the only reason to show a long-term rise in percentage. An increase in the percentage of seniors digging into their savings does not appear a likely cause.

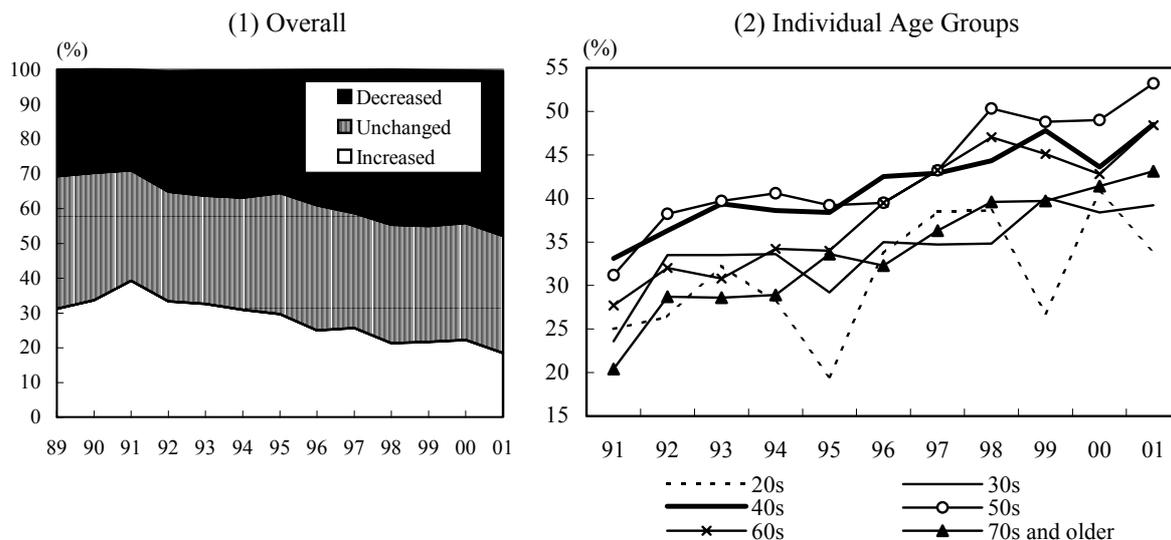


Figure 3-7. Change in Savings Compared to One Year Before

Source: Central Council for Financial Services Information, "Public Opinion Survey on Financial Assets of Households."

2. Concluding Remarks

It can be argued that, by being cautious about the future, Japanese households are adapting to changes in economic climate while keeping their finances on a sound footing. The tendency to use durable goods for longer and the growing inclination to choose less expensive goods and services can be interpreted as ways to improve quality of consumption in the face of stagnating incomes. However, the past several years have seen a rise in the percentage of Japanese stating that their living standards have deteriorated. It is therefore vital to boost consumption.

Curtailed spending by individual households also has an adverse effect on the income and employment environment by undermining overall consumer demand. Accounting as it does for almost 60% of total demand, consumption in its own right exerts a massive impact on production, and thus income; because of this self-fulfilling nature, worsening prospects for household finances have the effect of shrinking the economy even further.

One promising potential catalyst for a short-term consumer recovery is spending by seniors. Steps in that direction that can be immediately implemented include taking meas-

ures to reduce physical and psychological burdens on seniors that may impede social behaviors necessary for consumption, and offering goods and services that appeal to their tastes. Increasing seniors' freedom to dispose of their assets by overhauling inheritance and gift taxes would also motivate older consumers to unleash their purchasing power.

On the other hand, a full-fledged consumer recovery will require policies to improve lifetime income prospects, especially for those of working age. If risk scenarios are already negatively affecting consumption, then reducing uncertainty by clearly defining losses might benefit long-term consumption trends. Meanwhile pressure is increasing to reduce labor costs; if that results in cutbacks in new hiring and modifications to the seniority curve, the upshot could well be further burdens on the younger generation, which looks forward to gains in income in the many working years ahead of it. Future prospects for this age group are under growing threat from, among other things, a deterioration in public pension funds and government finances. While further investigation is required to identify more specifically the determining factors behind the generational effect on propensity to consume, action will certainly be needed to stimulate spending

among today's younger generation as well as future generations, on whom production and consumption will eventually depend.

One policy option for the future economic environment is a revision of the policy of redistributing resources through public pensions and taxes. Justifying that option from the perspective of fairness and public welfare might appear difficult both technically and politically as long as the focus remains exclusively on the immediate benefits of redistribution. But if redistribution helps fuel consumption, the resulting

economic growth could improve the wellbeing of broad groups of the population. The same holds true of the changes under way in employment practices and wage structures at the corporate level: establishing a system of compensation that acts as an incentive to the young people who will take charge of future production promises to deliver beneficial results on both the supply and demand sides. The need is for economic stimulus measures that transcend short-term conflicts between different age and income groups.

Supplementary Table

Impact of Employment Risk on Income in Risk-Averse Households

		Probability (%)	Income	Value of (a) According to Level of Relative Risk Avoidance (RRA)							
Status Quo		97.1	1.000								
Severance	Job Change	1.8	0.740								
	Unemployment	1.1	0.350								
Certainty Equivalent		100.0	(a)	(a)	0.97	0.96	0.92	0.87	0.66	0.55	

- Notes:*
1. The data in the left-hand table were used in compiling Figure 2-11. See Note 33 for an explanation.
 2. The figures in the right-hand table were calculated using the following CRRA utility function:

$$U(C) = (C^{1-RRA} - 1) / (1 - RRA)$$

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