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Demographics, the Japanese Current Account & A Disappearing Savings Rate

Global Demographics Research

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- This report highlights the importance of changing demographics on savings patterns within the Japanese economy. It relates Japanese age structure to savings, investment and the current account synthesizing recent academic research. Japan's case provides an advance example of future possibilities for other fast aging countries: Germany, Italy, Korea and Switzerland.

- The consumption and savings decisions of households is a complex one based on age, location, family structure, income and wealth. Analysis of current account dynamics should account for tax/benefit policies of the governments, demographics, investment determinants and returns on wealth. In this report, we primarily focus on effects from demographics.

- We present results based on new survey data on Japanese elderly savings behaviour as well as stylized micro and macro facts regarding Japanese savings that contradict popular perceptions. Recent survey data indicate that the very eldest as well as retired couples are dis-saving at high rates.

- Reflecting the proportionate increase in "dis-savers" along with the ageing population, the household savings rate in a macro terms could turn negative within the next few years. Unless the young old flexibly work part-time saving more than they have in the recent past, the government and corporate savings rates increase, older people's expectations take them towards greater frugality as in the past, the current account could turn negative within next 4-5 years. This would affect capital flows within Asia and the Rest of the World.

- As regards factors to delay the current account balance deterioration, we focus on the possibility of an increase in corporate savings. One important element here is a foreseen decline in wage costs along with ageing of the work force.

- Japanese elderly savings are affected by the nature of households they live in. We shed light on differences across independent or multi-generation households and reasons for their savings. The growing trend of multi-generation retirees, not studied by analysts, researchers, and current models, will have a bearing on this in future.

Japanese Demographics & Savings

We relate the ongoing aging phase of the Japanese population to their potential savings in the near future. Academic research as well as previous research by us[1] has highlighted the links between demographics, capital flows and current accounts. In a couple of influential speeches former St Louis Fed President ad FOMC member William Poole[2] highlighted the importance of examining differential aging patterns across countries to understand savings and current account balances. Our main interest is in using demographics to project when Japanese savings would start declining significantly. Our report contributes towards the recent literature on the global savings glut, capital flows and yield curve conundrums.

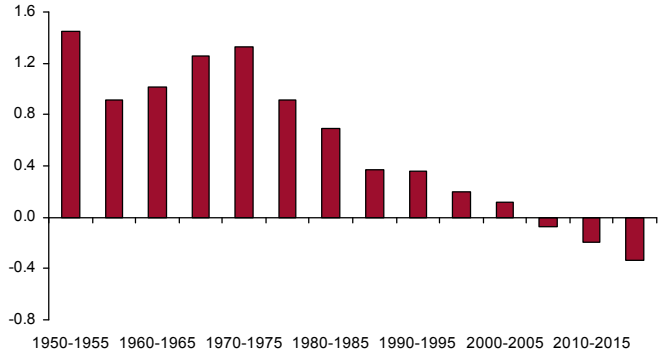
Japanese Demographics

Japan is not only the second largest economy in the world but it also hosts the oldest population currently alive, measured in terms of median age of population. The Japanese are wealthy and like other Asian countries are regarded as having higher savings rates than their Western counterparts. The Japanese population is aging and shrinking in size too, in the absence of migration. We show in a recent publication that Japanese labour force dynamics captured by (a) working age population growth (b) labour force productivity growth and (c) labour force utilization growth[3] affects real GDP growth. Further, the Japanese aging experience is likely to provide lessons for other advanced aging economies.

Exhibit 1 shows the declining Japanese population growth rate that has recently turned negative. The aging phenomenon can be seen in Exhibit 2 which shows a dramatically increasing old-age dependency ratio along with a declining child dependency ratio.

Exhibit 1: Population Growth Rate

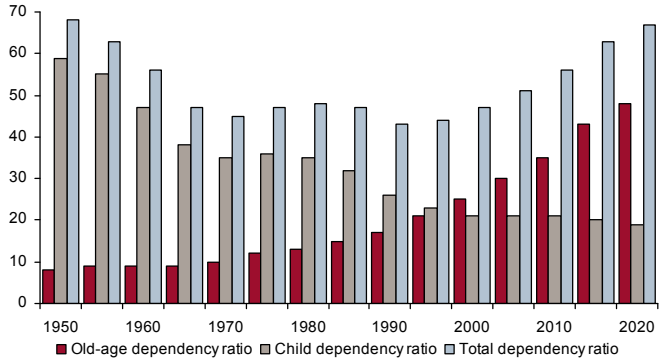
Percentages (1950-2020)



Source: Credit Suisse Demographics Research, UN

Exhibit 2: Dependency Ratios

(1950-2020)



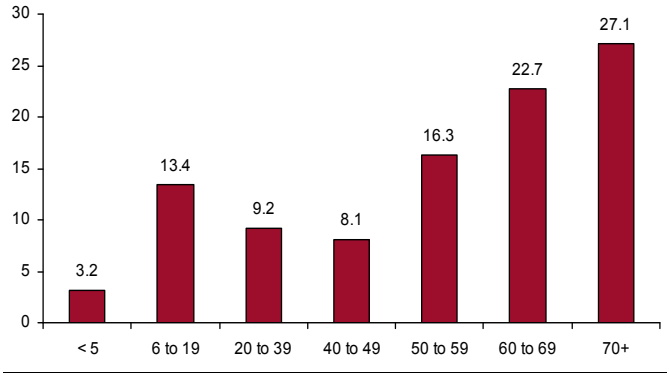
Source: Credit Suisse Demographics Research, UN

It is important to note that older dependents cost the governments more on a per capita basis than young non-adult dependents. Exhibit 3 shows that 49.8% of the public assistant recipients are above the age of 60 years and social security expenditure on the elderly is much larger than on child and family. Further, the expenditure on the elderly has increased dramatically (474%) over the last 25 years (Exhibit 4).

[1] See Credit Suisse Research (01 August 2007), "Demographics, Capital Flows and Exchange Rates" and Credit Suisse First Boston Research (25 August 2004) "Demographics in Japan"
[2] Bill Poole (2005, 2007) highlighted the demographic effects on trade imbalances and current account balances. His 2005 speech concentrates on Japanese current account balances being affected by the graying population of Japan.
[3] See Credit Suisse Research (April 4, 2009), A Demographic Perspective of Economic Growth for a historical and projective analysis of labour force drivers of GDP.

Exhibit 3: Public Assistance Recipients, 2005

In Percentages



Source: Credit Suisse Demographics Research, National Institute of Population and Social Security Research

Exhibit 4: Social Security Benefits

As a percentage of GDP

	Social security benefits	Expenditure for elderly	Expenditure for child and family	Elderly (60+) in '000s
1980	10.35	4.49	0.47	14,996
1985	11.11	5.86	0.45	17,707
1990	10.80	6.39	0.37	21,456
1995	13.11	8.25	0.43	25,556
2000	15.53	10.58	0.55	29,539
2003	17.19	12.10	0.65	.....
2004	17.25	12.17	0.69	.....
2005	17.52	12.30	0.71	33,785

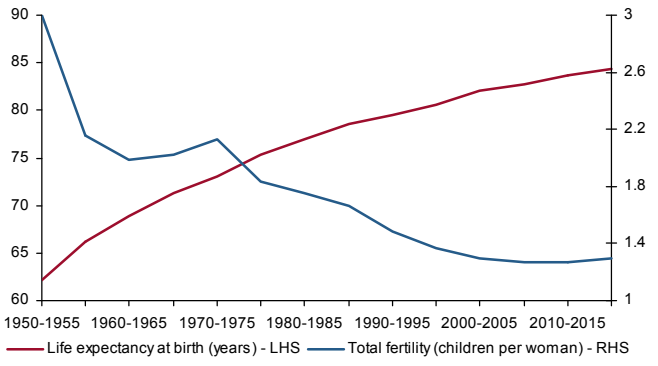
Source: Credit Suisse Demographics Research, National Institute of Population and Social Security Research

The changing age-dynamics of the Japanese population (Appendix I) is illustrated through the population pyramids for 1970, 1990, 2000 and 2020 which flatten out and then later start inverting.

The disparity between growing numbers of old Japanese relative to the shrinking numbers of young Japanese is demonstrated in Exhibit 5 which displays increased life expectancy and lower fertility rates (number of children per woman of marriageable age).

Exhibit 5: Life Expectancy and Total Fertility Rate

(1950-2020)



Source: Credit Suisse Demographics Research, UN

Exhibit 6: Migration

In thousands (1950-2020)

		1950-1955	1980-1985	2000-2005	2015-2020
US	Natural population change	12,179	7,973	9,224	8,524
	Change due to migration	1,160	3,170	5,675	5,295
Japan	Natural population change	6,173	3,889	663	-2,397
	Change due to migration	50	225	80	270
France	Natural population change	1,283	1,043	1,125	531
	Change due to migration	285	400	760	500
Germany	Natural population change	1,675	-494	-596	-1,474
	Change due to migration	275	-110	930	550
Italy	Natural population change	1,970	246	-221	-946
	Change due to migration	-200	330	1750	750
EU12	Natural population change	8,819	2912	1118	-1,522
	Change due to migration	-670	555	7,200	3,620

Source: Credit Suisse Demographics Research, UN

Another facet that explains declining and negative population growth are the closed attitudes towards migration in the face of globalization of labour markets. The very small component of migration hardly offsets the negative natural population change in Japan. This is in sharp contrast to Germany, which is also aging but where net inward migration offsets nearly completely the negative natural population change from the mid 1970s .

Savings, Investment and the Current Account

The current account measures the size and direction of international borrowing; it reflects the change in a nation's net foreign wealth. In a closed economy, savings equals investment as savings is the part of GDP not consumed by households or purchased by governments. Thus wealth can be increased by accumulating new capital only. In contrast, a country in an open economy sense can save by either investing in its capital stock or by acquiring foreign wealth.

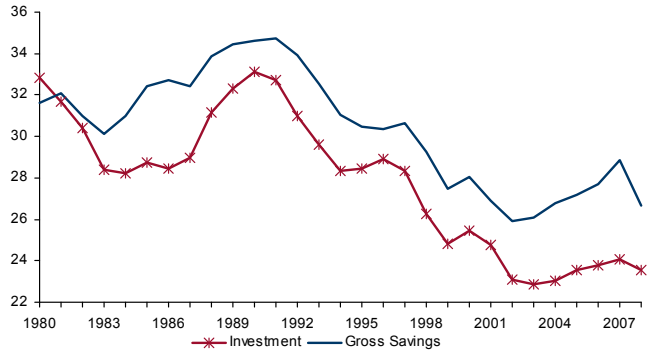
Total Savings is the sum of private saving (S^p) and government saving (S^g) and the following relationship holds: $S^p = I + CA + (G - T)$. This equation connects the budget deficit and the current account surplus to private saving. Intuitively, a country's private savings can show up in one of the following forms (a) budget deficits, purchase new govt. debt (b) purchase of foreign wealth from foreigners and (c) investment in domestic capital.

In an earlier publication on the Japanese Fiscal Deficit[4] we highlighted the past dynamics underlying government revenues over the 1980-2007 period. We pointed out that whilst the Japanese government ran a budget surplus of 2.6% of GDP in 1990, it recorded a deficit of 8.4% of GDP in 2003. The major and dominant reasons for deterioration of the government accounts were a decrease in tax revenues and increased deficits on the social security accounts. Tax revenues decreased due to lower corporate and household income over the recessionary period combined with asset deflation and falling interest rates.

Next, we turn to the investment and savings patterns of Japan. The dramatic decline in investment ratios is quite clear from Exhibit 7. The peak of investment occurred in the early 1990s. The data pertains to gross fixed capital formation at market prices. Note that the drop in savings has not been as dramatic as the drop in investment patterns for Japan since the 1980s.

Exhibit 7: Investment and Savings

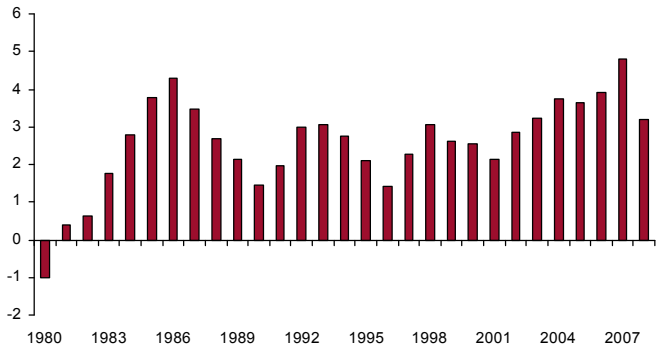
As a percentage of GDP (1980-2008)



Source: Credit Suisse Demographics Research, IMF

Exhibit 8: Current Account Balance

As a percentage of GDP (1980-2008)



Source: Credit Suisse Demographics Research, IMF

The combined effect of the trend in investment and savings is reflected in the current account pattern for Japan in Exhibit 8.

Japanese Savings: New Evidence

A large body of macroeconomic research on consumption and savings draws on the Life Cycle-Permanent Income Hypothesis developed by Modigliani, Brumberg and Friedman in the 1950s. Those theories posited that households smooth consumption over time. The formula relating future consumption to current consumption is called the consumption function and empirical research papers have been searching for the consumption function that has most explanatory power.

What do we know about Household Saving Behaviour? Fumio Hayashi (1997) contends that risk sharing exists between households but is incomplete as household insurance markets are incomplete. He finds that intergenerational transfers are either due to the selfish exchange motive or altruism or both, but the altruism is different to that typically assumed in the Dynasty model. Macro theory suggests that as people grow older they dissave and younger populations save more. However, an increase in the youth

[4] Credit Suisse Economics Research (19 May 2009), Japan Economic Analysis No. 2: The post-bubble widening of Japan's fiscal deficit: background and implications.

dependency ratio[5] (children to working age population) is expected to lower the household savings rate as children consume and do not contribute to income. With population aging, the youth dependency ratio declines and partially offsets the downward pressure on the household saving rate due to increased dependency ratios.

Contrary to the belief that many have regarding the high level of Japanese savings being a cultural and long-term feature, Charles Horioka (1993) showed that the Japanese household saving rate was quite volatile during the prewar, war-time and early post-war period[6]. In another study Hayashi (1997) claims that the savings rate differences between the US and Japan can be explained by conceptual differences between US and Japanese national income accounting approaches[7]. Using the infinite horizon model, he asserts that Japan's savings rate has been high because of the Japanese desire to accumulate wealth in order for their children to live as well as Americans do. He finds that the Japanese tax system at the personal level is geared to encourage saving whereas the Japanese corporate tax rates are higher and may have been responsible for capital outflows from Japan to the US.

But how do demographics come into play while considering macro variables? William Poole (2005) provides suggestive projections of how Japanese demographic projections might affect its current account balance. He focused on the slowing population growth, fraction of employed of the working age population, labour productivity and growth in per capita demand for goods and services. He projected that output per capita will grow much slower than output per worker. While he admits that there is significant uncertainty about the size of the projected long-term deficit in the Japanese current account, the conclusion that the balance will turn negative and chronically increase cannot be dismissed. He concludes by asking the following question: Why shouldn't we expect the Japanese elderly to use some of the assets owned abroad to support the consumption demand in excess of goods and services produced by an aging Japanese work force?

Japan's savings rates are amongst the highest in the world with only Italy, Singapore and Taiwan recording higher savings rates. Japan's high savings rates are a post-1955 phenomenon and therefore cannot be attributed to cultural factors. In an insightful paper reviewing the recent literature on Japanese saving, Hayashi (1997) shed light on certain **stylized macro facts, which are not always understood** and sometimes confused.

- Japan's national saving rate is not as high as commonly thought, but it is substantially higher than that of the US. Accounting adjustments lower the seemingly high rate.
- Japan's national saving rate peaked around 1970 and declined until 1983.
- The movement in the national saving rate in the 1980s and 1990s mirrors that in the government saving rate.
- The prewar saving rate is not high by international standards. Extremely high savings are a feature mainly of the 1970-1985 period.
- The prewar saving rate was not just lower than the postwar saving rate but was too low to initiate convergence to the steady state path.

[5] See Exhibit 3 for the projected and existing dependency ratios.
[6] He highlighted the fact that the post-1955 period does not have a continuous time series due to the Japanese government switching from the 1968 UN System of National Accounts (SNA) to the 1993 UN SNA in 2000. He relies largely on the 1993 UN SNA to highlight that whilst Japanese savings rates were amongst the highest of 23 OECD countries during the 1975-1985 period, it fell to 17th place and was 43% of the OECD average by 2005.
[7] Treatment of depreciation accounting and government capital are the main differences.

In addition, Hayashi cautions against lot of survey data and inconsistencies between longitudinal and cross-section data while emphasizing the following micro facts.

- About a quarter or so of Japanese households are extended households. The independent aged (who maintain an independent household) are on average wealthier than the dependent aged
- Both the independent and the dependent aged save until they get very old (about 80-85)
- A substantial fraction of wealth held by the aged is eventually transferred to their children mainly through bequests
- Consumption by young cohorts is so low that the young save over and above their accumulation of social security wealth. The profile is much steeper than that for the US

Dekle (2000) suggests that the most important reason for Japan's high private savings rate is rapid economic growth with the **age structure as the second most important**. Horioka (1991, 1992) finds that an increase in the dependency rate by 1% will cause the private saving rate to decrease by 1%. The surge in private saving from the mid 1970s to the early 1980s is related to the oil crises and on account of precautionary savings. The fall in private saving from the mid 1980s to early 1990s was due to increased consumption based on rising stock and land prices. The rise in savings since mid 1990s is due to recession, unemployment and pessimism which all contributed to raising the precautionary savings.

Analysis of total household saving attributed by motives, led Horioka and Watanabe (1997) to find that saving for retirement is by far the largest component accounting for 62.5% of household saving. Also, they find that household, private and national savings are influenced by the age structure of the population.

Japanese Elderly Savings patterns

As the Japanese age and the proportion of the elderly increase, it becomes important to monitor the savings behaviour of the elderly. If the elderly reduce their wealth on average, then it will have implications for a potential fall in aggregate household saving. But if the elderly keep their wealth intact then mere population aging should not reduce the aggregate household savings rate by much. The wealth of the elderly also has a bearing on the savings of the elderly as well as the saving rate of the whole economy.

The bequest motive of the Japanese elderly is an important factor to consider in the savings discussion of the old. The elderly are found to leave bequests for three reasons (a) altruism, old simply care for welfare of the young (b) accidental, elderly do want to hold wealth as insurance against increased longevity, but when they die they bequeath some wealth and (c) cost of child services to the elderly, part of long-term care including visits, phone calls, physical care etc.

The earlier Japanese research found that the Japanese old are saving until they are 80-85 years old and dissave very little. However, there is controversy according to Dekle regarding whether bequests reflect altruism or payment for services by the young. There was more support for bequests as payments in return for children's services. Dekle himself uses survey data not used earlier, Survey on the Living Behavior of the Aged, to find that the elderly are not dissaving partly on account of the bequest motive driven by altruism. He claims that his data includes more of the affluent elderly whose altruism motives may be stronger and whose saving behavior is more likely to influence the overall saving rate.

Robert Dekle (2005, Chapter 2)[8] bases his analysis and estimation of elderly Japanese household savings rates on using a household survey study called "Survey on the Living Behavior of the Aged" conducted by Tokyo University sociologists in 1983. He restricts himself to those above the age of 60.

$$\frac{W_t}{LTW} = a_t + b_t AGE1 + c_t AGE2 + d_t \frac{SSW_t}{LTW} + e_t LC + f_t MC + g_t SE + u_t$$

where W_t denotes total tangible wealth of elderly couple with age of household head is t, SSW denotes social security wealth of elderly couple, LTW denotes lifetime wealth, AGE1 denotes dummy variable = 1 if household head is aged between 65-69 else 0, AGE2 similarly for age range 70-74, LC & MC denote dummy variables if the elderly couple lived in a large city or medium city, SE is a dummy to indicate if head of household is self-employed.

The Japanese elderly households are of two types (i) intergenerational and (ii) independent. For those Japanese elderly living in intergenerational households, the age-wealth profile may mask their true savings behaviour. When Japanese parents join a younger family, the parents bring their assets with them and as per social norms, they leave as bequests almost all their total net assets to the younger generation. The parents impose costs on the younger family such as increased food expenditures, electricity and gas expenses, medicines and nursing care.

Dekle finds that average total wealth increases as the age group of the household head increases. Does that mean that the Japanese elderly are not dissaving? It depends on the fraction of elderly living with the younger generation. After correcting for the "net wealth measurement bias", he finds that there is no evidence that the Japanese dissave from their wealth. As the number of children increases, the wealth holding as a share of lifetime wealth increases, suggesting the presence of a bequest motive. But the above conclusions do not apply to the full sample of the elderly. The elderly who live with a younger family do not have to reduce their assets in order to finance their old-age consumption.

In a joint estimation controlling for the fact that certain elderly may report independence causing a self-selection bias, Dekle's study finds that an increase in earnings after age 60 increases the probability of independence. Kurz (1985) had argued that the decline in three-generation families after World War II was caused by the growth of the social security system. Dekle does not find evidence to support Kurz as the estimations yield insignificant estimates casting doubts on the view that "living alone" is a superior good for the aged in Japan. The survey also yields evidence suggesting that in large cities, the elderly are likely to be more independent. The result Dekle finds, suggests that the elderly are more likely to form an inter-generational household with children than with younger relatives.

Additionally, the estimates do not support the presence of bargaining between the parents and the children. Another result is that social security wealth does not displace private tangible wealth in Japan, in contrast to US studies by Kotlikoff and Hubbard who find substantial displacement of private wealth by social security wealth in US cross-section data. This supports the existence of strong altruistic motives in Japan. Increase in social security benefits implies that future social security payroll contributions will rise for a Pay As You Go (PAYG) system like Japan. Altruistic elderly parents will increase bequests to the young. The young will need increased resources to pay for the higher payroll taxes and therefore their parents will have to maintain a higher wealth level in order to leave the higher bequests.

[8] Understanding Japanese Saving: Does population Aging matter (Robert Deckle 2005), published by Rutledge Curzon.

Blinder, Gordon and Wise (1983) find that a greater number of children increase wealth by 1.25 times annual consumption of the average household. For the Japanese elderly, the mean increase in wealth holdings is six years of annual household consumption. While precautionary motives may explain the lack of dissaving by US elderly, the bequest motive plays an important role in explaining lack of dissaving by Japanese elderly.

Hayashi's 1995 study along with a similar US study casts doubt on the view that generations act as if they form a single dynasty (or are dynastic). Horioka et al (2007) accept that while age structure is a major determinant of past and future savings trends there are many other factors such as income growth, wealth holdings, consumer credit availability, public pension provision, government's saving promotion, culture and tradition which also have a bearing.

In a recent paper surveying the previous literature on saving behaviour of the aged and using recently available data, Horioka (2009) confirms that the retired aged dissave and that even the working aged dissave at very advanced ages, this suggests the applicability of the life cycle hypothesis model in Japan.

Horioka highlights the data issue that it is easier to get household savings data rather than saving data of the aged who live in multi-generation households. The proportion of the aged who live with their children was still 53% in 2000 as opposed to 73% in 1980. He also mentions that data often pertains to the head of the household who is the highest earner of the household but not necessarily the oldest household member, therefore it is difficult to identify households that have aged members. He stresses that even if we find that households headed by an aged individual do not dissave, we cannot conclude that all aged in Japan do not dissave. The failure to dissave could reflect the positive saving of cohabiting children and younger family members; in addition aged heads are more affluent that dependent aged and therefore are more likely to save. The retired aged have near zero total savings rates and a negative large rate for financial savings. Also data on household savings from the Household Survey of Financial Asset Choice show that the retired aged dissave on average in Japan and even the working aged dissave after the age of 70.

Horioka cites the Family Income and Expenditure Survey that pertains to households where the head was still working as a salaried worker. Using data for the 1990-2007 he finds that the savings rates of aged households is lower than that of younger households but is large in magnitude and positive, ranging between 7.8 % to 22.6%. Recent data on the retired aged savings patterns over 1995-2007 presented by Horioka (2009) find the following savings rates ranges by type of retiree households:

(a) households with retired head aged > 60	-9.9% to -29.2 %
(b) retired households with all aged members	-5.0% to –25%
(c) retired aged couples	-4.0% to -24.2 %

Thus retired aged households are dissaving about a quarter of their disposable income every year. Trends of the above categories of retirees' savings vary over time. What is uniform however is the increased trend towards dissaving since 2000. The increase in rate of dissaving is due largely to the decline in public pension benefits and to a lesser extent to an increase in consumption. Public pension benefits were reduced in a number of ways as part of the 2000 reforms (reduced earnings related component by 5%, wage indexed benefits temporarily suspended, earnings test imposed on the 65-69 year olds, gradual increase in pensionable age from 60 to 65 in 2001). The savings rates of households are based on gross saving and gross disposable income upwardly biasing the saving rate.

More evidence that Japan's elderly as a household group have been probably dissaving is that the labor participation rate, which is defined as the labor force divided by the total population of above 14-year olds and tends to decline with the proportion of aged above 64 years old increasing, has had a good correlation with the household savings rate over

the last two decades (see Exhibit 9). As the younger generation's average propensity to save has been rather stable, the decline in the macro level household savings rate has essentially been a reflection of a proportionate increase in dis-savers, namely the elderly.

Exhibit 9: Household Savings Rate and Labor Participation

Source: Credit Suisse, Cabinet Office, MIC

Investment and the elderly

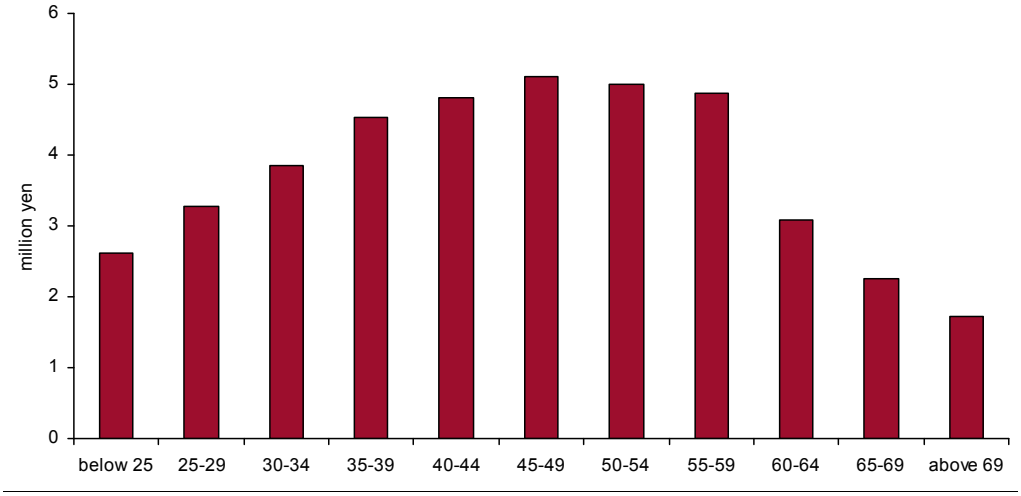
How does aging affect private investment? The intuitive reasoning is as follows: normally an economy invests to provide each worker with a given level of capital stock. In the case of an aging population and tight immigration policies, the number of workers declines and therefore the amount of capital declines too. Therefore as the workers within an economy age or the population ages, there ought to be less need for physical investment and the investment rate will also decline. This view is predicated on the fact that private investment is determined by short or long-term fundamentals and not non-fundamental variables.

The economics empirical literature has identified three important variables as influencing private investment: stock market q (stock market value), long-term fundamentals q (present value of discounted future profits) and current cash flow.

Dekle (Chapter 3) examines responsiveness of Japanese investment to the three variables mentioned above finding considerable support only for current profits but very weak support for stock market q or long-term fundamental q. Using post-war Japanese data he finds support for the cash flow theory of investment that claims investment is constrained by internal funds. He finds very strong support for the cash flow theory of investment based on data. His conclusion relating aging to investment suggests that as workers age and become more expensive to employers and companies, the profits will decline. Cash flow based on current profits will decline and worsening fundamentals will decrease private investment rates.

In the meantime, our Japanese economics team has argued that it is unknown or at least controversial whether the ageing population will damage corporate profitability and hence lower trend growth of corporate investment since the level of wages drops quite meaningfully for workers above 59 years old (see Exhibit 10).

Exhibit 10: Average annual income of household heads (CY2004)



Source: Credit Suisse, Cabinet Office, MIC

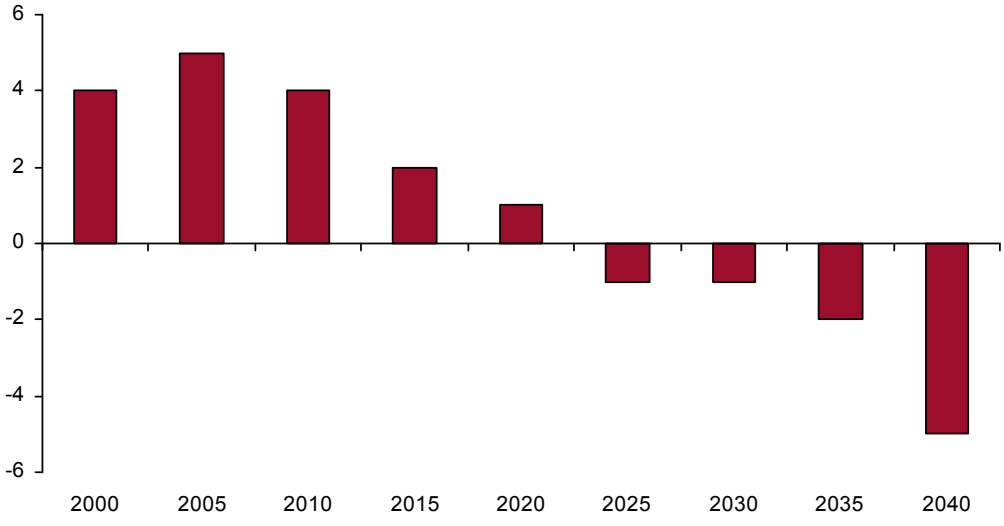
The wage cost for the second baby boomer generation is now increasing, but many companies can reduce the total wage cost along with the ageing of their workers. Also, the economics team has found that labor productivity tends to be less affected by the ageing. Thus, the corporate sector could benefit from the ageing labor force for some time in its view.

Saving, Investment & Current Account: the Future

Using government demographic projections which show the aging of the Japanese population, Dekle (2005) shows that aging will reduce the saving rate from 30% (2005) to 19% (2040) whilst investment correspondingly will decrease from 28% (2005) to 22% (2040). The important conclusion is that saving will decline more rapidly than the investment decline, causing the Japanese current account to steadily shrink from current levels and turn negative from 2015. This reflects a weaker current account than in the earlier paper, Dekle (2000), where the current account was projected to turn negative from 2025 as in Exhibit 11 below.

Exhibit 11: Current Account

Percentage of GDP



Source: Demographic Destiny, Per-Capita Consumption, and the Japanese Saving-Investment Balance by Robert Dekle (2000)

We also think the current account picture has deteriorated in the last decade based on higher old age dependency ratios, lower projected GDP growth (see footnote 3 on page 3), rapidly declining savings rates, lending support to the view that the current account could turn negative from 2015. Horioka also contends that the household savings rate in Japan that is 2.6% for 2006 (now revised to 3.8% and 3.3% for 2007) as per national accounts data could turn negative very soon.

Dekle (2005) states that population aging will worsen government finances as spending on health care and social security surge upwards. He contends that unless fiscal balances of government go from -7% to +5% over the course of a decade, the Japanese debt situation becomes unsustainable. He allows future population growth rates and support ratios to change every five years (rather than staying constant) as well as making projections consistent with well-accepted microeconomic foundations.

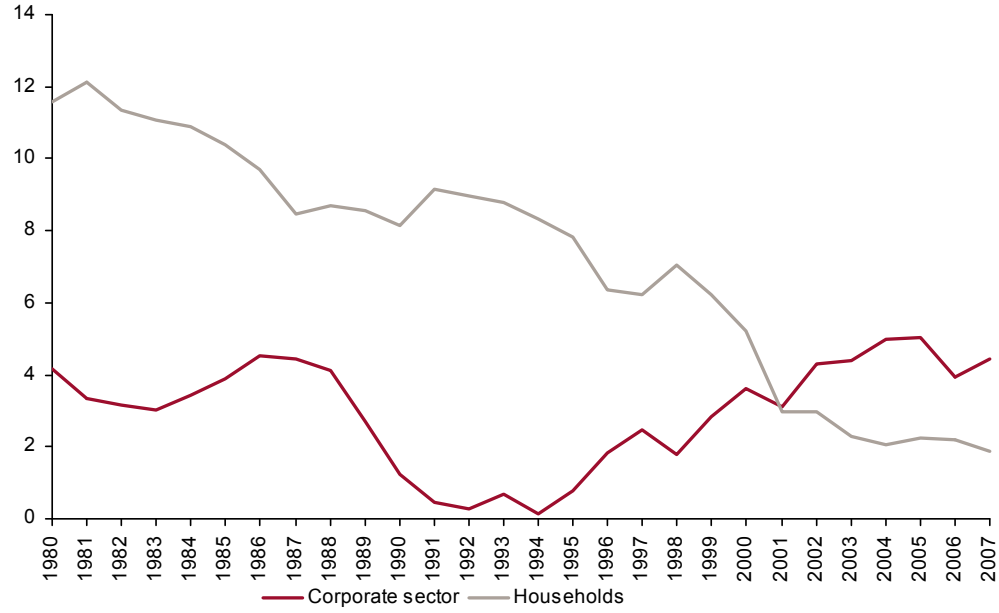
Dekle's assumptions underlying his projections for Japan are not standard neoclassical ones. He assumes Japanese households are dynastic and do not follow life-cycle behaviour, i.e. Ricardian equivalence holds which implies that government deficits do not affect the intergenerational distribution of wealth. The Japanese are concerned about the large unfunded liabilities of the social security system, the system transfers wealth from current young to the current elderly. He assumes that the elderly offset their net social security benefits by leaving larger bequests to the young, unfunded social security liabilities have no redistributional effects although they affect future tax rates and the division of saving into private and government saving.

Under the dynastic model assumption, population aging causes aggregate saving to fall by raising the consumption rate (the consumption to GDP ratio). The consumption rate rises although consumption per capita growth is reasonably constant the output per capita growth is lower (declining workers relative to population). Horioka (2001) finds evidence against the life cycle hypothesis in Japan and therefore Dekle's assumptions and models are plausible.

Horioka et al (2007) state that while household savings are likely to decline with an aging population, there is likely to be an offset from corporate and government savings. Also, investment for an aging population is likely to be lower as productive capacity needs will be limited. Japan's 2004 public pension reform has had some success in reducing future contribution rates and also intergenerational equities, but a lot more needs to be done.

Our Japanese economics team has also stressed the need to look at the dynamics of corporate savings while it tends to agree with the other researchers' conclusion that the household savings rate is likely to decline on a sustained basis. The key argument here is such that the ageing population could essentially raise corporate profitability or income other things being equal by reducing the wage cost as we have seen above. Therefore, unless fixed investment increases on a sustained basis, the corporate sector could remain a decent net-saver for a relatively long period in the team's view. Although it does not totally rule out the possibility that the Japan's current account balance could turn negative by 2015 or so, the economics team is more inclined to foresee the surplus being maintained for longer. For readers' reference, net savings of the non-financial corporate sector in terms of nominal GDP since the 1980s are shown along with household net savings (Exhibit 12).

Exhibit 12: Net savings as percentage of GDP



Source: Credit Suisse, Cabinet Office

Sustainability of Current Account

In an important research paper G. Milesi-Ferreti and A. Razin (1996) raise the following issue: when is a current account deficit unsustainable? They consider the solvency of a country which depends on future potential trade surpluses relative to current external imbalances. They highlight that the solvency notion using present value of future trade surpluses may not be appropriate to ascertain sustainability as it does not factor in "willingness to pay". The solvency notion also hinges on the assumption that foreign investors will lend to the country on current terms, which is unlikely in the face of an external shock or change in willingness to meet debt obligations.

Milesi-Ferreti and Razin develop a framework that takes willingness to pay and external lenders' willingness to lend into account, along with intertemporal solvency. They create a list of fundamental indicators to gauge the sustainability of the current account and study crises episodes to understand the performance of these indicators as a guide to sustainability. The justification is that financial markets may not act as a signal until problems get really acute.

They address the issue of current account sustainability by asking: will a continuation of the current policy stance require a drastic policy shift (sudden tightening of fiscal or monetary policy, leading to negative growth) or lead to a crisis (exchange rate collapse due to inability to service debt). If the answer is yes, the external imbalance is unsustainable. Private sector anticipation of future policy changes is reflected in interest rate differentials and capital flight, both of which are indicators of future capital flight or future taxation of domestic assets. But what could trigger a policy reversal according to them is different vulnerabilities to external shocks or to implement adjustment policies. The indicators that they focus on to assess current account sustainability during different country episodes are as follows: (i) current account balance (ii) national savings (iii) investment (iv) exports (v) fiscal balance (vi) growth rate (vii) real effective exchange rate (viii) interest payments and (ix) gross external debt. They assert that a combination of these indicators needs to be evaluated in order to gauge whether the current account deficit is sustainable or not.

Can immigration influence saving, investment and capital inflows?

Dekle (2005) makes a unique contribution by comparing capital flows in the absence of immigration to capital flows that occur with immigration. He assumes immigration of 400,000 annually over 2005-2040 in line with the UN recommendations. With the larger labour force through immigration, output in 2020 will be 22% higher and 50% higher by 2040. The higher output will imply lower need to import capital. Dekle projects that by 2015 only 15% of Japanese consumption will be sustained by foreign capital inflows.

With 400,000 immigrants, private savings rates decline by 10% until 2015. However, the decline in private saving is much milder with immigration than without due to improvements in the support ratio especially after 2015. With immigration, GDP growth is higher and projected government spending as a percent of GDP is smaller meaning that tax rates can be lower. By 2040, tax rates need to increase to only 45% of GDP with immigration instead of 50% without immigration.

The decrease in the private saving rate is projected to be larger than the increase in the government saving rate, causing a decline in total savings. The total saving rate declines from 30% (2000) to 27% (2020), rises to 28% (2030) and eventually to 31% (2040). Total investment declines from 28% (2000) to 25% (2030-40). The current account deficit worsening to 4% (2010) improves to balance by 2025 as government savings increase.

Housing Equity in Japan affects Saving and Consumption

Dekle analyses the effect of land and housing prices on the residential choice and saving behaviour of the elderly. He considers total wealth to be the sum of financial and real estate wealth. Earlier he found that the Japanese elderly do not decrease their wealth partly because of the desire of the elderly to leave bequests to the next generation. But if there are constraints to reducing their real estate wealth, then although some elderly may prefer to lower their wealth, they may be prevented from doing so because of existence of certain constraints. He contends that if the constraints on real estate are binding, then the removal of these constraints may result in greater consumption and dissaving by the elderly.

Given the high relative price of housing in Japan, the value of the home at death will typically always be larger than what the average elderly person desires to bequeath. Borrowing from home equity lets the person adjust their bequest to their desired level. The constraint on second mortgages for the Japanese elderly is therefore always binding. This binding constraint on home equity prevents the elderly from consuming his wealth in real estate. Using an argument from Ando that supports his analysis, Dekle argues that the removal of the home-borrowing constraint should increase dissaving by the independent elderly in the future and also reduce propensity of the Japanese to form intergenerational households.

What might delay the Current Account Deficit?

Following from the analysis above where we argue that demographic changes in Japan particularly for the old drive the savings and deteriorating current account, it is important to note what possible factors, other than the possibility of sustained net savings generation by the corporate sector argued above, could diminish the potential current account deterioration that we argued as likely to happen in the near future.

- An increase in the labor participation by the elderly seems quite possible. The government can discourage the elderly to retire by downsizing the social security benefits. Both the saving-investment balance of the government and of the households could be affected.

- The continued deterioration of the social security balance could push up the macro household savings rate some time in the foreseeable future.
- The non-financial corporate sector would increase net savings for the coming years and even at a faster pace simply because of less investment. In our view, the excess capacity of manufacturers would remain quite large, say 20% of production capacity despite the prospective decent recovery of GDP, into 2010/2011, which should dampen fixed investment for some time (please see Exhibit 13). It is possible that "net" fixed capital formation of the corporate sector would go negative on a more sustained basis for the coming few years, meaning the corporate net savings could grow bigger.

Exhibit 13: Manufacturing cap-U ratio (%)

Source: Credit Suisse, METI

- Finally, there will be some chances for the government to implement fiscal austerity programs more seriously though it remains uncertain whether the new administration is prepared for any concrete actions in this regard.
- In very recent research9, our Japanese Economic team highlights an increase in fertility rate as a consequence of the new ruling party DPJ's planned new child allowance. This would increase the fertility rate from 1.37 children/woman to slightly above 1.5 resulting in an initial flattening out of the median age profile followed by a decrease.

An open question answered in all typical analysis posed by the demographic features of increased life expectancy is the following emerging reality: how do rich countries and populations cope with multiple generations of retirees combined with one generation of young. It is not atypical to find in rich countries retirees aged 80-85 and those aged 60-62 for the same family.

The above point affects the bequest motive and no longer drives a bequest to the immediately succeeding generation. What of Ricardian Equivalence with multiple generations? These are open important questions for both theoretical and empirical analysis.

[9] See Credit Suisse's Japan Economic Analysis Issue No 6 (29 September 2009).

Immigration policies of the Japanese as well as greater labour force participation of Japanese women could increase efficiencies and lower costs too. Immigration is a complex and important feature of any country which can change dramatically based on political changes.

Conclusions

This report focuses on demographic structure as a key determinant of understanding aggregate savings behaviour. Demographic determinants and their interplay with budget constraints, and consumer preferences affected by psychology are emerging as very important variables in explaining macroeconomic and financial data unexplained by conventional asset pricing and macro models. Japanese households savings are an important part of the aggregate Japanese savings. They are a factor of economics of their income and wealth, changing behaviour in the face of increased longevity and expected political changes. Private sector savings and government savings are important too particularly relative to the corresponding investment levels.

We might be able to argue that the Japanese current account could turn negative based on the demographic structure and consumer behaviour in the next 4-5 years. Important to note, meanwhile, the prospects for the current account balance could differ, being affected by corporate and government savings dynamics. We highlight possible other factors that might cause the current account deterioration to either slow down or reverse as part of our analysis too, namely the multi-generational aspect of retirees, multiple generations of retirees, corporate strategies towards investment, political change, tax breaks and health expenditure changes on account of behaviour as well as policies.

At any rate, the Japanese example provides a leading case for other aging nations to follow in order to understand the possible future changes that they may face too. Demographics is not merely long term and is inextricably linked to the fiscal positions and external positions of economies.

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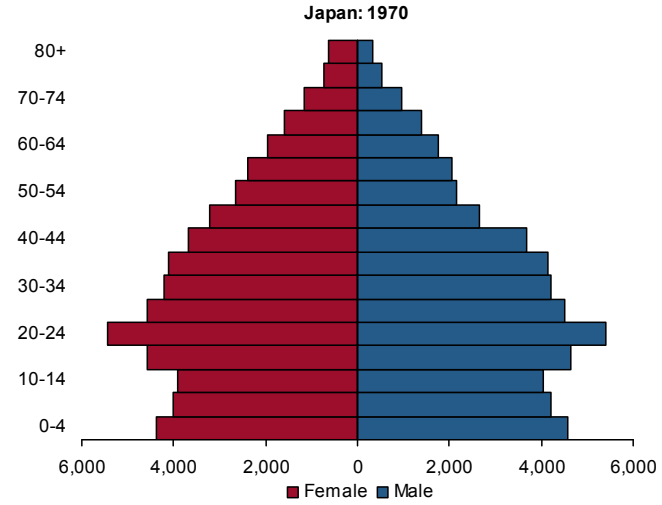
Appendix I

Exhibit 14: Population Pyramid: 1970

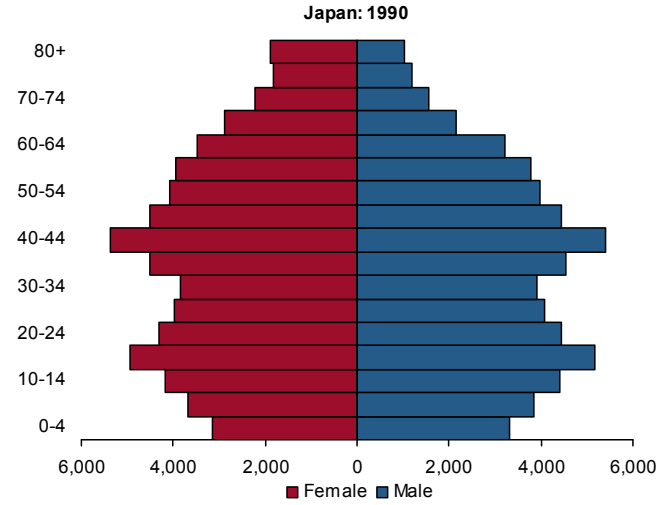
(in '000s)



Source: Credit Suisse Demographics Research, UN

Exhibit 15: Population Pyramid: 1990

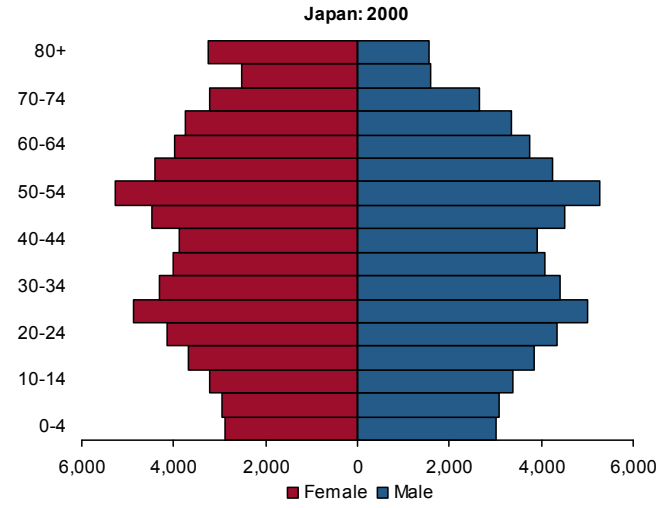
(in '000s)



Source: Credit Suisse Demographics Research, UN

Exhibit 16: Population Pyramid: 2000

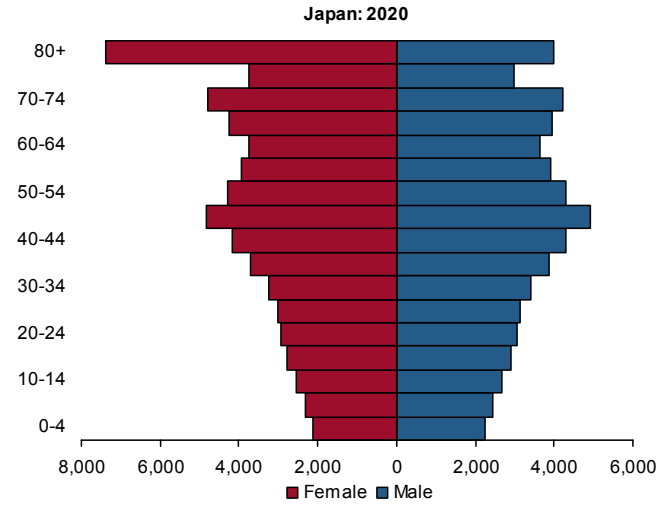
(in '000s)



Source: Credit Suisse Demographics Research, UN

Exhibit 17: Population Pyramid: 2020

(in '000s)



Source: Credit Suisse Demographics Research, UN

Disclosure Appendix

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Amlan Roy and Hiromichi Shirakawa each certify, with respect to the companies or securities that he or she analyzes, that (1) the views expressed in this report accurately reflect his or her personal views about all of the subject companies and securities and (2) no part of his or her compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this report.

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