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## Working Paper 2006:4 Department of Economics

# The Distribution of Wealth in Sweden:Trends and Driving factors

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THE DISTRIBUTION OF WEALTH IN SWEDEN: TRENDS AND DRIVING FACTORS

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#### The Distribution of Wealth in Sweden: Trends and Driving factors

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#### **Abstract**

Reviewing trends in the Swedish distribution of wealth it is demonstrated that the baby-boom cohorts have become relatively wealthy, both in terms of private wealth and in claims on the pension system. Results from a simulation model suggest that the elderly in the future will no longer belong to the relatively poor. They will though become relatively vulnerable to swings in the financial markets because a large share of their wealth is in the form of financial assets.

This paper also argues that private life-cycle savings have been relatively weak in Sweden, while most of these kind of savings have been done through the public and collective pension systems. We see, however, indications of increasing life-cycle savings.

Key words: Distribution of wealth, portfolio composition, notional pension wealth, baby-boom cohorts, liabilities, financial assets.

JEL code: D31

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#### 1. Introduction

Sweden has been known as a relatively wealthy country with an inequality of income and wealth that is low in an international comparison. The public sector is large and it includes rather generous transfers to private households many of which are not means tested. Largest among them are the public pensions. Most Swedes who retire thus receive a major share of their pensions from the public. Until recently the incentives to accumulate private wealth for retirement have thus been less in Sweden than in countries with different pension systems. A relatively high taxation of the return to capital, on the stock of wealth and of gifts and bequests have reduced these incentives even further.

It is rather difficult to get a coherent picture of the Swedish wealth distribution for a longer period than the last five to ten years. Statistics Sweden only publishes comparable household wealth data starting in 1999. Prior to this year one has to piece together data from the taxation process with data from the Swedish Household Panel Survey HUS<sup>1</sup>. Klevmarken (forthcoming) noted that the former source suggested an increase in median wealth by about 30 per cent in constant prices from the end of the 1970s to the end of the 1990, while the latter source suggested about the same increase but in the five years shorter period 1983-1997. Using these figures we thus find that private median Swedish household wealth in constant prices on average increased by about 1.5 per cent annually in the last decades of the previous century. Wealth changes in the years around the turn of the century were rather atypical because of the dramatic increase and fall in the stock market. According to Statistics Sweden the household mean net worth reached a peak in year 2000 of 740 thousands crowns<sup>2</sup> and a through in 2002 of 673 thousands, a decrease of 9 per cent in two years. The latest estimate is for 2003 and it amounts to 720 thousands.<sup>3</sup>

In an international comparison Sweden nowadays comes out as a relatively poor country as measured by household private wealth. The left part of Table 1 displays the estimates of median net worth for the population 50+ in a few European countries obtained from the SHARE survey and in Australia as measured by the HILDA survey <sup>4</sup>. Among these countries Swedish households have the smallest PPP-adjusted net worth of all countries.

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 $<sup>^1\</sup> www.handels.gu.se/econ/econometrics/hus/husin.htm$ 

 $<sup>^{\</sup>rm 2}$  There are about 9.5 Swedish crowns to a euro.

<sup>&</sup>lt;sup>3</sup> Förmögenhetstatistik 2003. Sammansättning och fördelning. Statistics Sweden, Örebro 2005, Table 14a.

<sup>&</sup>lt;sup>4</sup> Survey of Health Ageing and Retirement in Europe, see <a href="www.share-project.org">www.share-project.org</a>, and The Household. Income and Labour Dynamics in Australia (HILDA) Survey, <a href="www.melbourneinstitute.com/hilda/">www.melbourneinstitute.com/hilda/</a>.

The estimates in Spånt (1987) suggested that the inequality of declared net wealth declined from the beginning of the previous century to the middle of the 1970s. According to Jansson & Johansson (1988) the decline then came to a halt in the 1970s. Statistics Sweden (2000) estimated the Gini coefficient of household net worth to 0.78 in 1978. It then increased to 0.84 in the beginning of the 1990s and remained at about 0.86 until 1997. Due to the large increase in the value of stocks and shares in the last few years of this decade and the subsequent fall, inequality should first have increased above this level and then fallen. The latest estimates from Statistics Sweden give a Gini coefficient of 0.86 for 1999. It then fell to 0.845 in 2001 but increased again to 0.85 in 2002 and 2003.

Jointly with other Nordic countries Sweden is known to have a small income inequality. This finding is replicated using data from the SHARE survey, Table 2. But the cross national comparison of wealth inequalities within the SHARE project shows that Sweden does not deviate much from other European countries in wealth inequality. Table 2 shows that almost all included countries in 2003 had a wealth inequality of about 0.6 as measured by the Gini coefficient. This contrasts with wealth inequality in the United States. Klevmarken et al (2003) compared wealth inequality in Sweden and the United States and found for instance that the ratio of the 75<sup>th</sup> to the 25<sup>th</sup> percentile of the distributions of household net worth at the end of the 1990s was 4.5 in Sweden and 30.8 in the U.S. Both tails of the Swedish distribution but in particular the right tail was much shorter than the tails of the U.S. distribution. The mean wealth in Sweden was only about half of that in the United States, while the median wealth exceeded the U.S. median by the order of 10-20 percent.

In summary, these rather shaky estimates thus suggest that Swedish private wealth only increased by a modest annual real rate of 1.5 per cent and that Swedish households now in the beginning of the 21<sup>st</sup> century on average have less private wealth than households in other comparable countries. This parallels estimates of the Swedish standard of living as measured by the GDP per capita which shows that the rank of Sweden has fallen from one at the top to an average among West European countries in the second half of the 20<sup>th</sup> century. Household disposable income increased by an average of only 1.3 per cent annually in real terms in the period 1980-1997 and with about twice as much 1997-2003. The savings rate averaged a modest 3.6 per cent for the entire period.

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<sup>&</sup>lt;sup>5</sup> Statistics Sweden (2000), Table 16

<sup>&</sup>lt;sup>6</sup> Please note that the SHARE survey and thus also this table only cover the population 50+, which explains why the Gini coefficients in the table are much smaller than those for the entire population.

In the end of the 1980s the financial markets were deregulated which resulted in a credit expansion and increased the demand for credit financed real estate and consumer durables. In the beginning of the 1990s a major tax reform was passed in the Swedish Parliament that lowered marginal tax rates for labour incomes, introduced a flat tax rate of 30 per cent on capital incomes and broadened the tax base. Capital incomes were previously taxed at the high marginal rates of labour incomes, but the reform made taxation of labour and capital incomes more conformable.

It is also possible to trace effects from demographic changes on the distribution of wealth. In the 1990s the large baby-boom cohorts of the 1940s reached the age when people typically reach the peak of their wealth. They also started to retire at the end of the 1990s. Because both the size of the accumulated wealth and the portfolio composition are functions of age, the ageing of the population have and will influence both these aspects of the wealth distribution.

#### 2. The large baby-boom cohorts retire and age wealthy

The life-cycle hypothesis is a main vehicle in analysing the wealth distribution and its implications have been studied empirically in the previous literature. Most cross-sectional studies show a hump shaped relation between wealth and age while studies based on panel data do not always confirm that households consume their wealth after retirement. Andersson et al (2002) showed that the age-wealth profile for the 90<sup>th</sup> percentile of the distribution shows a strong hump shape while it is much less pronounced for the median and has completely disappeared in the 10<sup>th</sup> percentile.

Those who permanently are in the left part of the distribution have very little they could liquidize for consumption when they retire. The wealth of the large group in the middle of the wealth distribution primarily consists of owner occupied houses and condominiums and many choose not to liquidize this asset when they grow old. They prefer to stay in their old home and they also seem reluctant to increase their mortgages. As a result we only see a weak hump shape. Only in the right, upper part of the wealth distribution we find households with financial wealth that is easier to use for consumption purposes. Is this the explanation to the hump shape of the 90<sup>th</sup> percentile? The wealth of many of these households generate a return that jointly with pensions are likely to maintain the consumption standard of these people when they grow old. Thus they might not need to reduce their wealth. So, can we find an alternative explanation to the hump shape?

Birth cohorts have different experiences which influence their accumulated wealth. Figure 1 shows median age – net worth profiles for two years 1983 and 1997. The shape of the profiles has changed. The peak is higher in 1997 than in 1983 and in these 14 years it is pushed from the age range around 50 years beyond the age of 60. The lack of stability in the age – wealth profiles suggests that there are other forces than stable life-cycle savings that determine the wealth distribution. In Andersson et. al. (2002) and Klevmarken (2004) it was argued that most of the cross-sectional hump shape originated from cohort differences in wealth accumulation. In an attempt to separate birth cohort effects on wealth from the age effect it was shown that the cohorts of the 1940s and 1950s did better than older cohorts. They also did better than younger cohort in the left tail of the distribution while among those who were relatively wealthy the cohorts of the 1960s and 1970s had succeeded better than any previous cohorts relative to their age. The latter observations might be a "dot.com" effect that would have vanished if we had have access to more recent data covering the period after the recent stock market decrease. The relative success of the large baby boom cohorts is though likely to have survived the stock market swings (Berg, 2002). The cohorts of the 1940s could take advantage of the relatively prosperous 1960s and 1970s, periods of relatively high growth not disturbed by periods of high unemployment. These cohorts were able to get a job and to keep it, buy a house or a condominium and then surface on the price increases in the real estate and stock markets. Some of them also benefited from subsidies to those who invested in their own houses. Older generations had to carry on the heritage of the depression in the 1930s and the war-time economy in the 1940s.

The age – wealth profiles estimated net of these cohort effects showed almost now hump shape. Only the profile for the  $90^{th}$  percentile had a week tendency to level off after the age of 70 (see Klevmarken 2004, Figure 7). The estimates in this age range were however rather uncertain because the number of observations of the oldest-old is small in the HUS surveys.

One implication of these findings is that there is relatively little private lifecycle savings in Sweden. Most of this kind of saving was done through the social security system and through the negotiated group pensions. Table 3 compares the value of the notional wealth accumulated in the public and negotiated pensions for a few selected age groups of employed workers. Although an unfunded pension system like the (old) Swedish system does not have any funds expect for buffer funds, it implies a liability to those who have participated in the system. Workers have a claim on a future stream of pension payments that can be evaluated in the form of an implicit pension capital that can be attributed to everyone who is

covered. For most Swedes this is a large amount compared to private wealth. The magnitude of the capital value of public pensions and negotiated group pensions was estimated in Andersson et. al. (2002) using 1999 data from Statistics Sweden and assumptions about the future that are detailed in an appendix of this publication. Table 3 is obtained from two of the tables in Andersson et. al. (2002). It compares for two age groups and four major occupational groups private wealth to the capital value of public old age and negotiated group pensions. The table shows median assets, so it is not possible to add public and private assets and compare, but it is still quite clear that the claims on the public pension system and on the negotiated group systems by far exceed private wealth. For blue collar workers the value of the public old age pensions exceeds 60 per cent of the median gross wealth (including pension wealth) and for white-collar workers it amounts to about half median gross wealth.

Using the microsimulation model SESIM at the Ministry of Finance the future path of the wealth distribution has been simulated. Figure 2 displays average age-financial wealth profiles for three four year periods: 2000-2004, 2016-2020 and 2036-2040. The first of these profiles shows the typical hump shape we have been used to find in cross-sectional data, but the latter two have no down turn at the higher ages. They increase through the age range. Even if the increase in financial wealth with increasing age might be exaggerated in these simulations and the simulations for the very old are uncertain due to small samples, this figure suggests that the baby boom cohorts will keep their wealth as they grow older. Figure 3 shows the same kind of diagram but for owner occupied houses and condominiums. All three profiles are now hump shaped, which implies that at least some of the elderly will sell their house (or condominium) and to some extent transfer this wealth into financial assets. But we find also in this case that there will be a shift of wealth towards higher ages as the baby boom cohorts get old. Adding other private assets and deducting debts we can study changes in the simulated distribution of net worth. The result is displayed in Figure 4. According to these simulations we will witness a new trend. The elderly will in the future no longer belong to the relatively poor, but they will have considerable wealth.

#### 3. Portfolio composition

#### Swedish households hold much financial wealth and risky assets.

The Share data also offer a cross national comparison of the portfolio composition. The right panel of Table 1 compares holdings of financial assets. Next to Swiss and Danish households

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<sup>&</sup>lt;sup>7</sup> www.sesim.org

Swedish households hold more financial assets than households in the other countries. There is a large difference between the three mentioned countries and Germany, Austria and the Mediterranean countries the households of which have very little financial wealth. Figure 5 details the financial assets. Comparatively many Swedish households hold mutual funds and also stocks and shares, while these assets are rather uncommon in Austria and the Mediterranean countries.

#### The 1991 tax reform changed the portfolio composition in Sweden

At the end of the 1980s and in the beginning of the 1990s major changes in the Swedish income tax system influenced household portfolios. Cuts in the marginal tax rates and limitations in the possibilities to deduct interest paid had been introduced in the second half of the 1980s and then followed the major tax reform in 1990/91. To recapitulate, this reform decreased the marginal income taxes, broadened the tax basis and included major changes in the taxation of the returns from financial assets and real estate. The expected effects on the distribution of wealth were a decrease in the share of liabilities, real estate and consumer durables and an increase in the share of financial assets, in particular, bank deposits and bonds. Using HUS-data and comparing assets held by households before and after the reform Klevmarken (forthcoming) found that most of these changes took place. The ratio of debts relative to gross wealth decreased from 28 per cent to 22 per cent. The share of financial assets increased from 17 per cent to 28 per cent while that of durables decreased from 31 per cent to 21 per cent. The share of real estate remained approximately the same.

### Doubts about a viable public pension system give incentives to increase private savings in pension policies

In the post war period all Swedes above the age of 65 have been covered by a basic social security pension<sup>8</sup> and in 1960 an income related supplementary pension was introduced in the form of a pay-as-you-go system that covered all employees and many self-employed. Above a low income threshold and below a ceiling the income related pensions were 60 per cent of the average income for the 15 best years. These pensions were indexed by the CPI. In the 1990s the viability of this system became a concern facing the aging of the large baby boom cohorts and the relatively low growth of the Swedish economy. Economic and political discussions of the future of the pension system and proposals for reforms resulted in 1994 in a decision in

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<sup>&</sup>lt;sup>8</sup> Before 1976 the eligibility age was 67.

Parliament about a new pension system. It is less vulnerable to demographic and economic shocks, but it might also result in lower pensions than the previous system. (See Klevmarken, 2002)

As we have seen above that the notional pension wealth is of great importance to Swedish households. Reduced pensions would thus have a major impact on total wealth of an average Swedish household and the increased uncertainty about future pensions have increased private investments in pension policies. In the middle of the 1980 less than 15 per cent of all households had private pension policies and the mean holding was rather small, about 90 000 crowns among those who had the asset. At the end of the 1990s more than 30 per cent had this kind of asset and the average value had increased to an estimated 150 000 crowns per household. (See Klevmarken(forthcoming).)

#### The debt ratio is high in Sweden

Table 4 shows the share of households 50+ that have mortgages and other liabilities. There are remarkably large national differences. The share of households that have taken at least one loan is highest in the two Scandinavian countries. Also in the Netherlands and in Switzerland a majority of households have liabilities while the share is much lower in the other countries and in particular in the Mediterranean countries.

We thus find that Swedish households not only invest proportionally much in financial assets but also in risky financial assets. Figure 6 pictures national differences in the share of gross financial wealth invested in risky assets. Swedish and Swiss households here emerge as the least risk averse. Many Swedish households have also increased their exposure to risk by having (large) mortgages and loans.

#### 4. Concluding remarks

In the 1990s household median wealth in Sweden increased by about 30 per cent in real terms. Part of this increase came from increased savings after the tax reform in the beginning of the 1990s. Although the average Swedish savings rate is below 4 percent it peaked at about 12-13 per cent in 1993/94 immediately after the tax reform. We have observed that savings in private pension policies have increased, but it is hard to know to what extent this is new savings and to what extent it is a reallocation of portfolios. Part of the increase in wealth can also be attributed to the exceptional increase in the stock market, but its influence on median wealth is not as large as one might think because stocks and shares take a

large share of the portfolio only among the wealthy. The increase in the value of stocks and shares is though the major explanation to the increase in inequality of wealth during this period. More important for ordinary people than stock prices is the value of one and two family houses. It only increased by a modest three per cent in real terms in the 1990s. However, the difference between peak and trough was larger and there were large regional differences. Price increases were higher in the three big cities and in particular in Stockholm that contributed to an increased regional inequality in wealth and probably also to the over all increase in inequality (c.f. Berg 2001).

An important finding that has implications for the future is that the baby-boom cohorts have become relatively wealthy, both in terms of private wealth and in claims on the pension system. They will now retire, but still keep an influence in society, not only because of their size but also because of their wealth. Their wealth is though more vulnerable to volatile prices in the financial markets than before because the share of financial assets has increased and because the pension reforms have made future pensions more depended on the financial markets. There is also a political risk that the large baby-boom cohorts to an increasing extent will have to pay for the health services and care they will need in the future, services that now are financed through the general tax fund. If these forces do not erode the wealth of the baby-boomers, which their children will inherit, bequests will then become more common than today and the amounts inherited will most likely increase. Most people think this will in the future increase the inequality of the wealth distribution even further, but as demonstrated in Klevmarken (2004) that is not necessarily the case.

Finally, it has been argued in this paper that private life-cycle savings is not so strong in Sweden, but that most of this kind of savings have been done through the public and collective pension systems. The 'savings boom' in the beginning of the 1990s should be seen as an exception, an adjustment to the change in the tax system. However, the concern for the future viability of the pension systems, the change of these systems in the direction of funded systems and the boom in the stock market have made Swedish households more aware of financial instruments like mutual funds, stocks and shares. Ownership of these assets have spread down the wealth distribution and this change jointly with the increased savings in pension policies might well signify a change in the savings behaviour of Swedish households towards more life-cycle savings.

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Table 1. Household net worth and gross financial assets for the population 50+ in 2003, by country (medians in 1000 euro).

	Net Worth		Gross Fina	ancial Assets
	PPP-adjusted	Not PPP-adjusted	PPP-adjusted	Not PPP-adjusted
Sweden	86,7	97,5	21,3	24,0
Denmark	110,6	139,9	31,9	40,3
Germany	99,1	102,0	16,5	17,0
The Netherlands	135,3	138,0	16,7	17,0
France	136,3	140,3	8,7	9,0
Switzerland	201,3	273,8	42,2	57,4
Austria	103,9	103,0	6,0	6,0
Italy	159,3	150,5	2,6	2,5
Spain	149,5	127,1	2,4	2,0
Greece	109,5	93,1	2,4	2,0
Australia	172,5	158,0	16,3	14,9

<u>Source:</u> Hesselius, Johansson & Klevmarken (2005), Table 6.1 (SHARE-data), and the HILDA survey (Australia)

Table 2 Gini-coefficients for income, consumption and wealth by region and country for the population 50+ in 2003

Macro-Region and Country	N	Income	Consumption	Wealth
Northern Europe	2,981	33%	24%	60%
SE	1,787	33%	22%	59%
DK	1,194	32%	28%	62%
Central Europe	6,867	46%	35%	63%
DE	1,825	42%	25%	62%
NL	1,741	49%	46%	65%
CH	743	47%	38%	63%
AT	1,589	51%	33%	58%
FR	969	47%	45%	61%
Southern Europe	4,021	47%	41%	65%
IT	1,445	41%	47%	64%
ES	897	56%	26%	68%
GR	1,679	45%	28%	52%
Australia				58%

Note: The unit of analysis is the household and the population of households consists of all households with at least one member born in 1954 or earlier. N is the number of observations.

Source: Bonsang, Perelman and Van den Bosch (2005), Table 1 (SHARE), and the HILDA Survey (Australia)

Table 3 Private wealth and the capital value of public pensions and negotiated group pensions in 1999. (Medians in 1000SEK computed at the individual level)

	Age 45-64			Age 65 -	
	Blue collar workers	White collar workers	Government Employees	Local government employees	
Financial assets	70	121	119	80	114
Tangeble assets	293	429	439	362	34
Debts	128	167	176	140	0
Old age pension	1117	1286	1278	1087	660
"Premiepension" (funded social security)	37	45	41	34	
Negotiated group					76
pensions					
Blue collar workers	204				
White collar workers ITP		245			
White collar workers ITPK		207			
Government employees STAT			232		
Government empl. STATF			129		
Local gov. empl. KOM				177	
Local gov. empl. KOMF				72	
Gross wealth	1690	2522	2362	1775	1238
Net wealth	1546	2354	2199	1634	1222

<u>Source</u>: Andersson et al (2002) Tables 3.8 and 3.10. Computational details in Andersson et al (2002) Appendix. <u>Note</u>: This table was obtained using the individual and not the household as a unit.

Table 4 The share of households 50+ that had mortgages and loans in 2003 by country

Country	Share (%)	
Austria	24	
Germany	28	
Sweden	58	
The Netherlands	54	
Spain	22	
Italy	22	
France	34	
Denmark	66	
Greece	19	
Switzerland	54	
Australia	42	
Australia excl. credit cards	34	

Source: Preliminary estimates from the SHARE survey, and the HILDA survey.

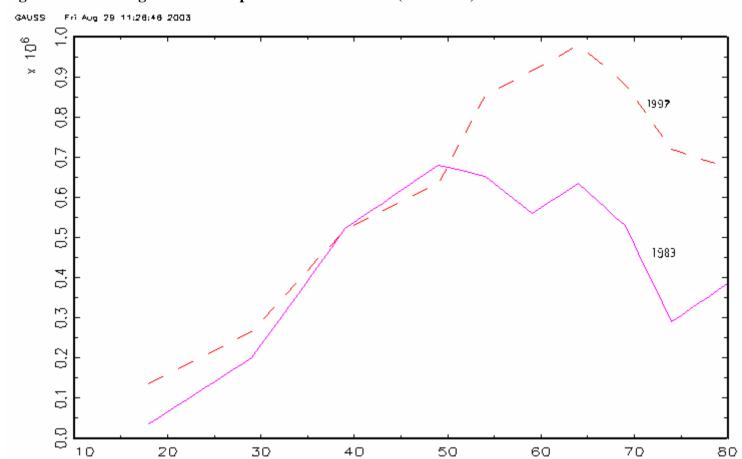
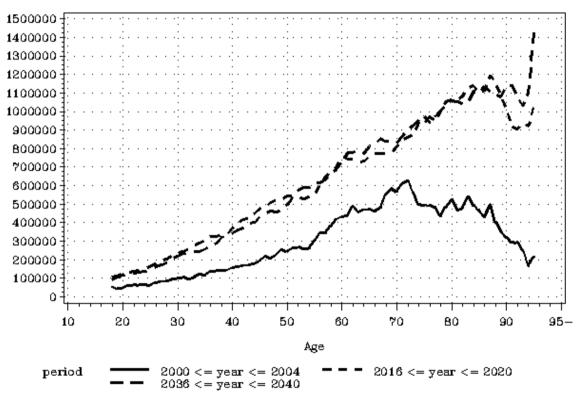


Figure 1. Median age – net worth profiles 1983 and 1997 (1993 SEK)

<u>Note</u>: Source Klevmarken(2002) Table 2. The figure shows cross-sectionally estimated piecewise linear splines. Data originate from the HUS surveys. Net worth does not include private pension policies and annuities

Figure 2 Mean financial wealth by age of the oldest household member and year as simulated by the microsimulation model SESIM. (1999 Swedish Crowns)



<u>Note</u>. Financial wealth does not include assets within the public and collective pension systems.

Figure 3. Mean housing wealth by age of the oldest household member and year as simulated by the microsimulation model SESIM (1999 Swedish Crowns)

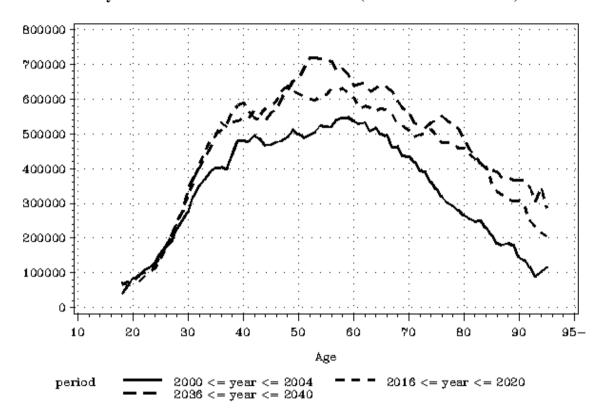


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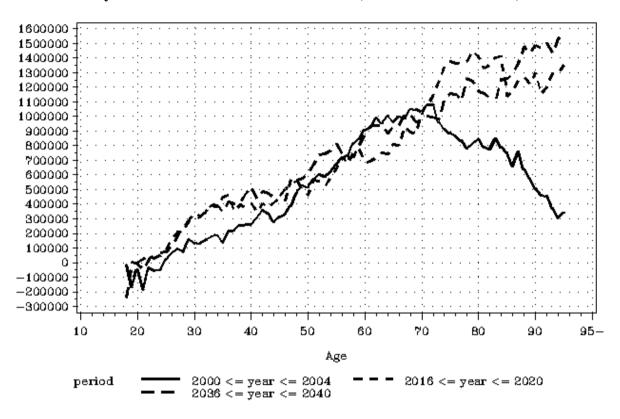
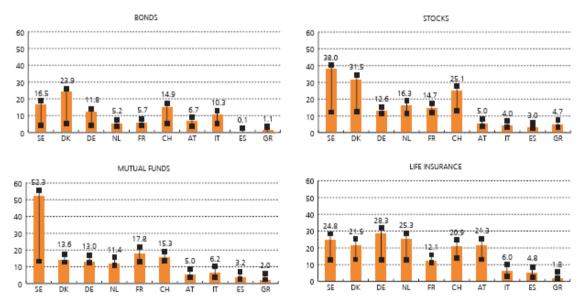


Figure 5. Share of households 50+ owning assets in 2003 by country and type of asset.



Source: Christelis, Japelli & Padula (2005), Figure 3

Note: The graph displays the proportion of households owning bonds, stocks, mutual funds and life insurance policies. The numbers are expressed in percentage points. 95% confidence intervals are shown as black bands.

Figure 6. Share of gross financial assets invested in risky assets, households 50+ in 2003



Source: Christelis, Japelli & Padula (2005), Figure 4

<u>Note</u>: The graph displays the ratio of total risky assets to total gross financial assets. Risky assets include direct and indirect stockholding (equity held in mutual funds and individual retirement accounts). Ratios are expressed in percentages.

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