

## Risky Ageing and Pensions in Finland

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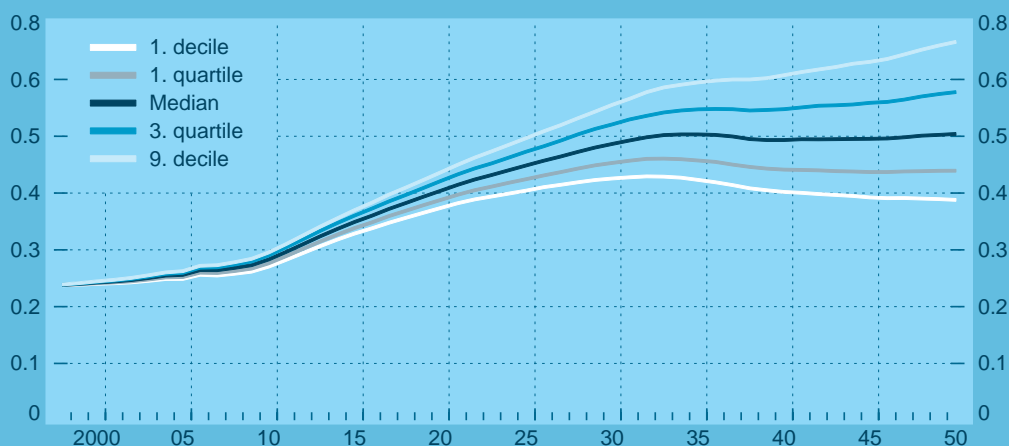
*Finnish society is ageing more rapidly than most other EU countries. This process involves profound changes in the economy. The two key features are scarcity of labour and substantially increasing pension and health care costs. The policy implications are complicated, since there is widespread uncertainty about the scale of ageing. There are some pension system rules already in use or proposed to be used, which behave as insurance against demographic uncertainty. We suggest that these rules should be considered more broadly as preferred means to prepare for ageing.*

### The Population is Ageing, but How Much?

The share of elderly people in the Finnish population will increase in the future. By 2020, the ratio of people aged 65 years or more to those of working age will be about 40 percent. This increase, from the current 25 percent figure, will probably be larger than in any other EU

country. But on a longer horizon other countries will catch up, if current demographic projections are to be trusted. And that is a big if in itself. Fertility, mortality and migration are surprisingly difficult to foresee. Judging from previous errors in population forecasts, one ends up with rather large confidence intervals for ageing, as the figure below displays.

**Ratio of Population Aged over 64 to the Working-age Population (20-64 years)**



An example of how to interpret/read this: There is a 10 % probability that the ratio of retirement aged people to those in the working age will exceed 61 % in 2040, and a 10 % probability that the ratio is below 40 %. The ratio also lies as likely between 45 % and 55 %, as outside of these limits.

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Source: Calculations by Juha Alho.

### *Some Implications of Ageing on Private Economies*

From the point of view of individual citizens, ageing is likely to appear as a positive phenomenon, at least if the outcomes via the public sector are left aside. A smaller number of children is often a result of successful family planning and leaves more time and money to spend for the parents. Fewer babies leads to future scarcity of labour, which raises wages. Future generations also observe that the bequests, which they receive, are larger. Furthermore, improved health and longer lifetime allows more enjoyment from the higher incomes. These facts affect, e.g., the career plans and retirement, and are reflected in savings and wealth holding behaviour.

Firms see ageing as changes in, e.g., demand structure and in the quantity and quality of human resources. The demand for leisure goods and services aimed to old age people increases. The working community has to be adjusted for a higher average age of workers and an increased number of immigrants. The availability of local skilled labour will be a vital criterion for a global investment strategies.

All these changes are further reflected in the relative prices of both products and factors of production. The reactions of market prices generate further responses from private sector agents.

### *Ageing and the Public Sector*

The economic interactions between ageing, the public sector and private economies are rich. The use of public services and most of the income transfers are strongly connected to some particular phase of life. The most important age-related items are pensions and health care. A shift in the age structure of the population generates major changes in the demand for these transfers and services. The induced intergenerational redistribution of resources can be large. These transfers also displace or accentuate private mechanisms of shifting resources over time, e.g., by affecting the need to save for old age.

Another issue is the financing of increasing public expenditures. An ageing society has less labour incomes to tax. Although this may be

partly compensated by larger receipts from consumption and capital income taxation, it is likely that the tax rate of labour incomes rises. This hike might not, by itself, be outstanding, but it can eventually reduce the political support of the generous welfare state with initially high tax burdens. Furthermore, it also undermines the efforts of both raising the participation rate of working-age citizens and promoting the desired type of immigration.

The third area of interaction between an ageing population, private economies and the public sector is labour market. Ageing reduces the aggregate size of the labour force, but increases the demand for public sector employees. This consequently tends to elbow out the needs of the private employers and raise labour costs. The fundamental questions in this respect will be the future productivity growth of labour in the public sector, and the political decisions made about the amount and quality of old age care and the health care services provided. The lower the productivity growth and the larger the political support for extensive public care, the more important is the "crowding out" phenomenon. Ageing also has a regional dimension. A vicious circle of emigration, ageing of a population, reduction of tax receipts and the deterioration of public services is already familiar in the less developed areas.

Ageing of the population is one of the rare future phenomena, which can be seen quite long before it actually takes place. The current discussion about the implied intergenerational income transfers and needed policy measures is likely to have a permanent effect on the methods and the time horizon of public policy planning. There is also evidence that more educated people have longer planning horizons. This gives room for more sophisticated long-term policy measures, such as use of individual social security accounts to smoothen the lifetime incomes.

Ageing thus inevitably changes the inter- and intragenerational income distribution both through markets and through the public sector. The magnitude of these changes, and whether they could and should be alleviated through welfare policies, remain open issues. The difficulty of foreseeing changes in fertility, mortality and migration has also to be taken into account.

*The Finnish Earning-related Pension System is Prefunding, but not Enough*

The Finnish pension system consists of two main parts. The earnings-related pension system aims to provide retirement income sufficient for consumption comparable both to that of working years and to current workers' consumption. It covers risks related to old age, disability, long-term unemployment of ageing workers, and death of family earners. The residence-based national pension guarantees a minimum income in cases where the earnings-related pension is absent or insufficient. Voluntary pensions, whether employer-based or industry-wide supplementary pensions or personal pension arrangements, are of minor importance in Finland.

The Finnish earnings-related system has some rather unique features: it is statutory by law but largely privately run, and it has collected funds to smoothen the contribution increases due to ageing in the future. Funding is based on individual pension rights but is collective in the sense that individual pension benefits do not depend on the existence or yield of funds. Funds only affect the level and timing of contributions.

The statutory earnings-related system was created in co-operation with labour market organisations, and they are represented in the administrative bodies. The administration is decentralised among several pension institutes. The largest of them are private pension insurance companies and the Local Government Pensions Institution. These institutes collect the contributions, pay the pensions and invest the retained funds. The Central Pension Security Institute maintains the central register, compiles statistics and redistributes between the institutions the pooled component of contributions collected in the private pension scheme (Tuomisto 1999).

The earnings-related pensions in the public sector are very similar to those in the private sector described above. The amount of annual funding, however, is discretionary and not formally based on any formulae concerning accrued pension rights or future expenditures. The Local Government Pensions Institution, handling the earnings-related pensions for municipal employees, has funds amounting to 137 percent of the sector's annual wage bill in

**Assets of Pension Funds in 2000**

	Euros	In relation to GDP
Private sector	55.6	42.0
Local government	12.2	9.2
Others	3.1	2.3
Total	70.8	53.6

Source: Työeläkevakuuttajat, TELA.

1999, thus roughly comparable to the TEL system. The pension fund of the central government is still small, but there is an agreement of raising the funding rate to the same level as in the private sector by the year 2010.

The main justification officially presented for the partial prefunding was to alleviate the burden due to the baby-boom generations. The expressed aim was to use the funds to lower the projected peak in the contribution rate. The current population forecasts imply, however, that there will be no marked reduction in pension expenditures after the large cohorts have died. This has created a situation in which there is no general agreement about the future funding rates.

The importance of prefunding to the pension system can be evaluated by noting that according to the recent forecasts, when the funds are stabilised at their equilibrium level around the year 2050, the yield lowers the private sector contribution rate by 5 percentage points. This calculation assumes that the real rate of return on the pension fund assets is 3 percent.

*The Financial Prospects of the Pension System are Uncertain*

The overall prospects of the current Finnish pension system are dominated by rapid ageing. The ratio of the population aged 60 and over to that aged 20-59 is expected to increase from the current 0.35 to 0.66 in 2030. The stochastic population simulations of Alho (1998) challenge even this gloomy baseline scenario. These simulations, based on previous forecasting errors in fertility, mortality and migration, show that uncertainty is higher than usually

recognised. The 80 percent confidence interval of the age dependency ratio is 0.61–0.79 in 2030. The lower limit (0.61) results mostly from non-increasing life expectancy, the upper limit (0.79) from declining fertility and emigration.

The age dependency ratio does not comprehensively describe the ratio of pensioners to employees. The other often-used measure is the economic dependency ratio, which takes into account labour market conditions. There are several contradictory trends affecting the future labour force participation rate in Finland. First is the expected reduction in the unemployment rate from the current level of 9 percent. Another is the already high female participation rate, which does not allow much potential for improvement. Also the average retirement age, while expected to rise somewhat, is as low as 59 years and only 10 percent of each cohort retires at the statutory retirement age of 65 years.

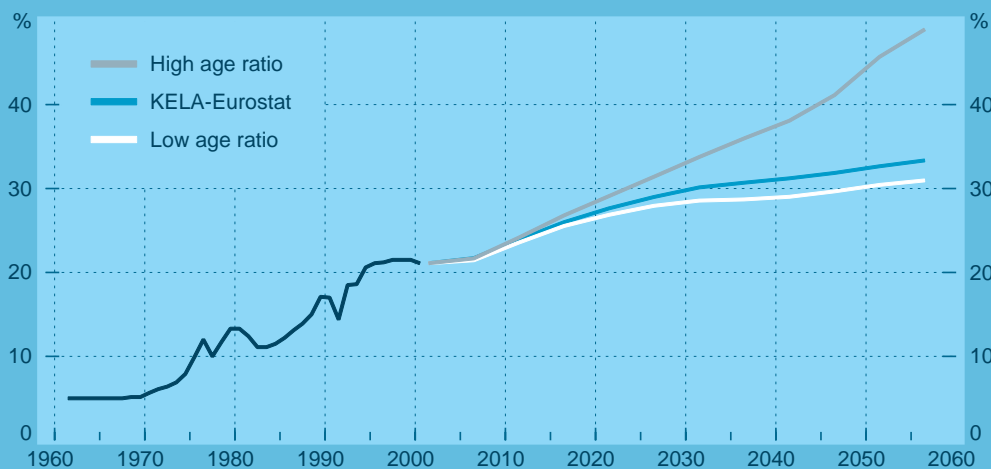
Furthermore, the pension system is still maturing. The first employees in the private sector have just reached the right to retire with full pension (after contributing for the required number of years to the system), and it will take

approximately 30 years until this is possible for all pensioners.

The Central Pension Security Institute calculates long-term scenarios primarily for the private sector scheme, but also for the public sector pensions and the national pensions. The latest is published in Klaavo et al. (1999). According to the baseline scenario, the ratio of all pension expenditures to GDP rises from 11.7 percent in 1998 to 16.4 percent in 2034. After that the ratio declines somewhat due to the means-testing of the basic pensions, passing away of the baby-boom generations and the growth of incomes. The private sector average pension contribution rate rises from the current 21.1 percent of wages to 32 percent in 2050. During the same period the private sector pension funds rise from 132 percent of the corresponding total wage bill to 250 percent in 2050.

Lassila and Valkonen (1999) show that this baseline scenario is very sensitive to demographics. If the above mentioned upper limit (0.79) scenario of the confidence interval of the age ratio is followed, the private sector contribution rate exceeds 50 percent in 2060.

### Contribution Rate in the Private-sector Earnings-related System



Contribution rate includes employer's and employee's contributions.  
Sources: Central Pension Security Institute and Lassila & Valkonen, 1999

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People in the administration of the pension systems argue that increasing pension expenditures and rising contributions will not necessarily be a problem. An oft-used argument is that the increase in productivity will probably be rapid enough to allow the living standards of the working-age population to increase, despite the growing share of the elderly. The opponents argue that growth in incomes does not necessarily make high contributions rates any more attractive.

*Is the Pension System Fair?*

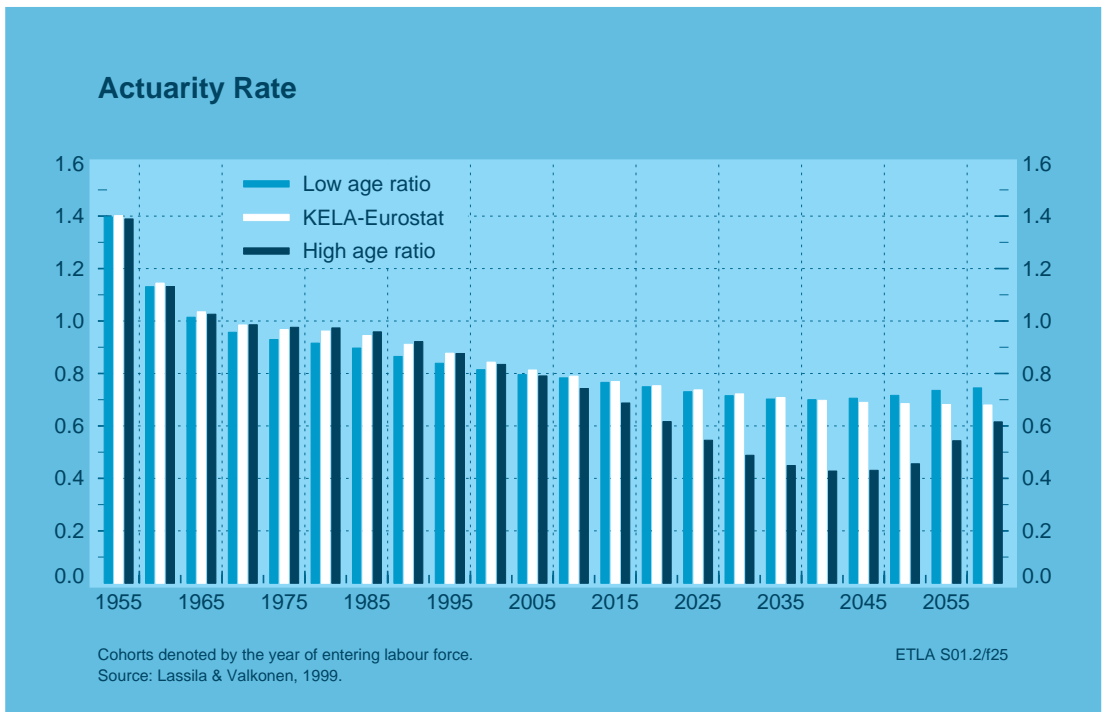
As an intergenerational measure of the connection between benefits and contributions we define the following. *The actuarial ratio is the ratio of a cohort's discounted benefits from the pension system to its discounted sum of payments to the pension system.* The benefits include old-age pensions, disability and unemployment pensions and all other pensions from the earnings-related pension system. National pensions and the effects of taxation are not included.

If the actuarial ratio equals 1, an average person in that cohort gets the same rate of return on pension contributions than he or she would

have got from financial markets. A ratio less than 1 describes a typical situation in PAYG pension schemes, after the initial generations who have a ratio in excess of unity. The actuarial ratio is closely related to the money's worth calculations familiar from the pension reform discussion in the United States.

When comparing the rate of return from a pension system to alternative yields, one should keep in mind that markets cannot provide assets that are quite equivalent. In the statutory system the insurance for e.g. disability and living to exceptionally old age are provided, and at rather low cost. This may, however, cast some doubt only about the level of actuarial rates but not their movements over time.

The figure below describes the actuarial rate in the three demographic scenarios. Each bar displays the actuarial rate of one cohort. The cohorts that started their work careers before the pension system was established, or during its early phases, have got more than they have paid in. This is commonplace, and often even aimed for, in systems where funding is absent or small. More recent cohorts and all future cohorts have rates below one. Furthermore, the rates are on a declining trend for at least a few



decades. The later born cohorts will receive worse actuarial rates than those born earlier. This is due to the ageing of the population. There are less payers in relation to beneficiaries, and the contribution rate must rise substantially even though the target rate for benefits remains constant in relation to wages.

Although prefunding makes the Finnish position better than in many European countries facing the ageing problem, it may be that the contribution increases required to keep current benefit promises are deemed too high. The question then is how much and in which way the benefits will be reduced. But there are better policy alternatives, especially if implemented before the ageing fully takes place.

### *Policy Rules Can Insure Against Demographic Risks*

The financial prospects would be much better if people stayed longer in the labour force. Increasing the retirement age by one year lowers the contribution rate by 1.5-2 percentage points. A three-year postponement – if it somehow could be achieved – would thus cut about 5 percentage points off the future contribution increase. Another lucrative scenario is increasing the yield on pension funds. A one percent rise in the rate of return on the existing funds would lower in the short term the contribution rate by 1.3 percentage points. In the long term the corresponding reduction is 2.5 percentage points. Faster productivity growth would also help. If the growth rate in productivity and real wages is 2 percent, instead of the baseline assumption of 1.5 percent, the ratio of pension expenditures to wages will decline over 2 percentage points in the long run (Klaavo et al. 1999). The contribution rate would decline by half of that amount under current funding rules.

Pension policies in Finland aim, quite correctly, at postponing the actual retirement age and increasing the rates of return on funds. One cannot, however, count on the success of these policies. And even if they succeed, unfavourable demographic outcomes may result in very high contribution rates.

The reformed Swedish pension system reduces the pension benefits, if life expectancy increases. The updated Finnish population forecasts

assume that life expectancy continues to rise for several decades, implying higher pension expenditures. These two starting points have generated a discussion about whether also the Finnish pension system should adopt a similar life expectancy adjustment.

Another suggestion is to link the pre-funded amount of contributions in Finland also to current birth rates. This idea is based on the observation that, from the point of view of pension expenditures, uncertainty about the future birth rate is much more important than the uncertainty about longevity. Therefore, intergenerational insurance against unfavourable trends in the birth rate is necessary (Lassila and Valkonen 2001b). The corresponding adjustment on the benefits side could be e.g. indexation of the pensions to total wages (Lassila and Valkonen 2000).

The mechanisms and rules mentioned above would react automatically to demographic developments. If no demographic surprise would take place, the measures would have no effects, except the longevity adjustment, which would react to the increase in life expectancy. If demographics would turn out to be very unfavourable, the measures would effectively alleviate the consequences to the pension system.

If current pension systems would use more efficiently all the information included in population forecasts, the allocation of risks could be improved without fundamentally changing the systems. As many of the benefits require that the measures are carried out early enough and

### **Demographic Risks and Associated Pension Policy Measures**

Measure	Risk type		
	Fertility	Longevity	Migration
Link between life-expectancy and benefits	-	effective	-
Wage bill indexation	effective	-	effective
Fertility-adjusted prefunding	effective	-	-

planned using a very long horizon, it is better that the reactions are based on rules rather than on discretion.

The current strong position of the general government and the outstanding uncertainty about the long-term demographic trends is a very challenging combination. What we can learn from the pension policy studies described above is that we need to smooth out in time the increasing tax burden caused by ageing. Since the size of the additional burden is not known, there is room for insurance against unlucky states of world. Furthermore, since it is less efficient and politically more difficult to implement the insurance rules after a negative ageing surprise has taken place, early implementation is necessary.

An example of the new policy measures would be the creation of a fund for the future old age and health care expenditures. The new fund would not necessarily be very large. More important is that the prefunding rules are planned to generate an intergenerational insurance against demographic and other relevant risks. A regular check of the effects of new information on the probability distribution of future expenses would by itself offer a backbone to the political discussion.

There is, of course, considerable uncertainty also about non-demographic trends. Bovenberg and van der Linden (1997) stress uncertainty in employment, wage growth, the return on capital, and in family formation and dissolution. They conclude: "To spread these risks, policymakers in OECD countries should take action on several fronts. The use of several policy instruments is attractive not only from the point of view of risk-sharing but also for political reasons: costs and benefits are spread over various groups. A package of measures may facilitate the building of consensus about reform."

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