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The welfare effects of the Finnish survivors' pension scheme

Niku Määttänen *

* *Niku Määttänen*, The Research Institute of the Finnish Economy (ETLA), niku.maattanen@etla.fi.

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Abstract

The mandatory pension system in Finland includes survivors' pensions to surviving spouses. The survivors' pension scheme has been criticized on equity grounds because it represents a significant net transfer from singles to certain type of married couples. However, before possibly eliminating or reforming the scheme, it is important to understand its welfare effects. In this paper, I analyze survivors' pensions as part of the overall pension insurance system. I use a numerical life cycle savings model to evaluate the value of current survivors' pensions for different households in welfare terms. I find that the current survivors' pensions are likely to be a very valuable part of the overall pension insurance for many households. In the absence of distributional concerns, it would probably be optimal to further increase survivors' pensions.

Keywords: *Survivors' pensions, annuities, life cycle savings.*

JEL classification: *H55, D91, G22.*

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1. Introduction

Like other Nordic countries, Finland has a quite comprehensive compulsory pension system. Its main part is an earnings-related pension scheme which covers all workers. The benefits are relatively generous, with the median replacement ratio of retired employees being currently about 60% (Rantala and Suoniemi, 2010).

Under certain conditions, the Finnish pension system also pays survivors' pensions to widows and widowers.[1] In most cases, survivors' pensions complement surviving spouses' own earnings-related pensions. The survivors' pension is determined by both the surviving spouse's own pension and that of the deceased spouse. The survivors' pension is higher the higher is the pension of the deceased spouse relative to the surviving spouse's own pension. In 2011, the average monthly survivors' pension was 519 euros. Since there is no benefit ceiling, the very largest survivors' pensions amount to thousands of euros a month (Takala, 2013). The survivors' pension scheme also includes pensions that are paid to orphans. Throughout this paper, however, I focus on pensions that are paid to a surviving spouse.

While the mandatory earnings-related pension system is widely seen as a very important element of the overall social security system in Finland, the survivors' pension scheme has sometimes been heavily criticized (Lilja, 2012). The critique is mainly related to equity concerns. For one thing, since the pension contribution rate is the same for all households independently of their marital status, it is clear that survivors' pensions represent a net transfer from singles (and unmarried cohabiting couples) to (married) couples. At the same time, the benefit rules imply that survivors' pensions also represent a substantial net transfer to some couples with relatively high lifetime earnings. Such transfers are difficult to justify from a distributional perspective. An additional concern is the fiscal cost of survivors' pensions. In 2011, the survivors' pensions amounted to about 7 percent of the overall pension expenditure (Finnish Center for Pensions, 2012).[2]

There are of course several ways of addressing these concerns. One possibility is to abolish survivors' pensions altogether. Alternatively, we might change the benefit rules or require that those who are likely to benefit from survivors' pensions pay higher pension contributions than others.

When designing such reforms, we should have an understanding about the welfare effects of the current survivors' pension scheme. For instance, it is possible that most households do not value survivors' pensions nearly as much as what it costs to provide them. In that case it would be rational to at least reduce the benefits. On the other hand, survivors' pensions might be a very valuable form of social insurance for some households.

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[1] If the spouses do not have a child, the key requirement is that the spouses had been married at least 5 years when the deceased died and the surviving spouse was under the age of 50 and the deceased person under the age of 65 when they married. If the spouses do have a child, it is required that the spouses were married before the deceased turned 65.
See http://www.tyoelake.fi/EN/ELAKEETUUDET/PERHEELAKE/ for details.

[2] This includes orphan's pensions. However, surviving spouse's pensions are fiscally far more important than orphan's pensions.

In this paper, I analyze survivors' pensions as part of the overall retirement insurance provided by the Finnish compulsory pension system. I consider example couples where spouses have certain own pensions which in turn determine their possible survivors' pensions according to the actual Finnish benefit rule. I first compute the expected present value of survivors' pensions to the example couples. The expected present value is an estimate of the average present value of survivors' pensions for a large number of identical households. In the context of private annuity markets, the expected present value is often referred to as the 'actuarially fair price' of an annuity.

I then evaluate the value of survivors' pensions in welfare terms. To that end, I use a life cycle savings model very similar to that used by Brown and Poterba (2000) to study the welfare properties of different private joint life annuities. [3] In my model, a couple household makes joint consumption and savings decisions taking into account lifetime uncertainty and the related fact that one of the household members is likely to live alone for some time. Households attempt to smooth consumption over time and they also wish to leave a bequest. The household members have their own pensions and possibly also survivors' pensions that are paid to a widow or widower. Both pensions are paid until death. Pensions therefore provide insurance against lifetime uncertainty and help to smooth consumption over time. Because of pensions households do not have to cover the possibility that they will live to a very old age with savings. In the absence of (well-functioning) private annuity markets, at least small pensions therefore generally increase welfare relative to a corresponding lump sum transfer. However, a household may also be 'over-annuitized' in the sense that it would be willing to have less pension insurance in exchange for a corresponding lump-sum transfer. In the model, the main reason for that would be the bequest motive. Households would not be able to leave a bequest if all their resources were in the form of a pension stream.

I solve the household savings problems with and without survivors' pensions for the example households. For each household, I then compute the increase in its initial wealth that would make its expected remaining lifetime utility (at the age of 65 in my baseline examples) without survivors' pensions equal to its expected remaining lifetime utility with survivors' pensions. The result, which I refer to as the equivalent wealth compensation, is a welfare based measure of the value of survivors' pensions.

The difference between the equivalent wealth compensation and the expected present value of survivors' pensions measures the insurance value of survivors' pensions. The larger is the difference, the larger is the welfare gain provided by survivors' pensions relative to ordinary savings. Again, this welfare gain stems from the insurance properties of survivors' pensions.

The main question I am interested in is whether the current survivors' pension scheme is likely to increase household welfare relative to a lump-sum transfer that equals the expected present value of survivor's pensions. I also seek to understand whether the current benefit rule is well-designed in the sense that it targets the largest benefits to households that value them the most in welfare terms.

[3] Unlike Brown and Poterba (2000), I incorporate a bequest motive into the model.

In the next section, I describe the household life cycle savings problem and the baseline calibration. In section 3, I present the results. I conclude in section 4.

2. Model

2.1. Household problem

The decision maker is a household that consists of a single man (widower), a single woman (widow), or a husband and a wife (a couple household). The household has predetermined pension income as well as ordinary savings. It faces uncertainty regarding remaining lifetime. In the case of a couple household, it needs to take into account that most likely one of the spouses is going to live alone for some time.

Time is discrete and denoted by $j=1,2,\ldots,J$. Household problem starts in period $j=1$ and lasts at most until period J. The conditional probability that the husband survives from period j to period $j+1$ is denoted by s_j^m. The same probability for the wife is denoted by s_j^f. No one survives beyond period J, so $s_J^m = s_J^f = 0$. I will calibrate these survival probabilities based on observed age- and sex-specific survival probabilities. Given spouses' ages in the first period, the time period suffices to determine their ages in all subsequent periods.

In every period, the household needs to decide how much to consume and how much to save. The household attempts to maximize its expected remaining lifetime utility which consists of periodic utilities and the prospect of leaving a bequest. Periodic utilities depend on consumption. The concavity of the periodic utility function gives rise to a standard consumption smoothing motive. The utility from leaving a bequest reflects a 'warm glow' bequest motive.

Household members have own pensions and, in the case of a single person household, possibly also survivors' pensions. Let b^f and b^m denote, respectively, wife's and husband's own pensions and s^f and s^m widow's and widower's survivors' pensions. I will later specify s^f and s^m so that given b^f and b^m, they are consistent with the actual benefit rules of the Finnish survivors' pension scheme.

In the case of a single person household, periodic consumption is denoted by c and periodic utility by $u(c)$. In the case of a couple household, periodic utility is denoted by $u(c^m, c^f)$ where c^m and c^f denote husband's and wife's consumption, respectively. The utility from leaving a bequest of size d is denoted by $g(d)$. I use $v_j^f(a)$, $v_j^m(a)$ and $v_j^c(a)$ to denote the expected remaining lifetime utility in period j given current savings a for a widow, a widower, and a couple household, respectively.

In its recursive form, the problem of a widow, for instance, can now be written as:

$$
\begin{aligned}
& v_j^f(a_j) = \max_{c_j} \{u(c_j) + \beta S_j^f v_j^f(a_{j+1}) + (1 - S_j^f) g(a_{j+1})\} \\
& s.t. \\
& c_j + a_{j+1} = (1+r)a_j + b^f + s^f \\
& a_{j+1} \geq 0
\end{aligned}
\tag{1}
$$

where β is the subjective discount factor and r the interest rate. The second term in the right hand side of the first equation is the expected remaining lifetime utility from next period onwards weighted by the survival probability and the subjective discount factor. The third term is the value of leaving a bequest weighted by the probability of not surviving to the next period. The amount of the bequest is determined by savings. The second equation is the periodic budget constraint. The last inequality states that individuals cannot borrow. (The bequest motive may imply that households always wish to leave a strictly positive bequest. In that case, the borrowing constraint is never binding.)

The problem of a widower is of the same form as the problem of a widow. The problem of a couple household in turn can be written as:

$$
\begin{aligned}
& v_j^c(a_j) = \max_{c_j^f, c_j^m} \{u(c_j^f, c_j^m) + \beta[S_j^f S_j^m v_{j+1}^c(a_{j+1}) + S_j^f (1 - S_j^m) v_{j+1}^f(a_{j+1}) \\
& + (1 - S_j^f) S_j^m v_{j+1}^m(a_{j+1})] + (1 - S_j^f)(1 - S_j^m) g(a_{j+1})\} \\
& s.t. \\
& c_j^f + c_j^m + a_{j+1} = (1+r)a_j + b^f + b^m \\
& a_{j+1} \geq 0
\end{aligned}
\tag{2}
$$

The second term in the right-hand side of the first equation relates to the case where both the husband and the wife survive to the next period. In that case, the next period 'value' is determined by v_{j+1}^c. The following two terms relate to the cases where only one of the spouses survives. The last term relates to the case where they both die before the next period.

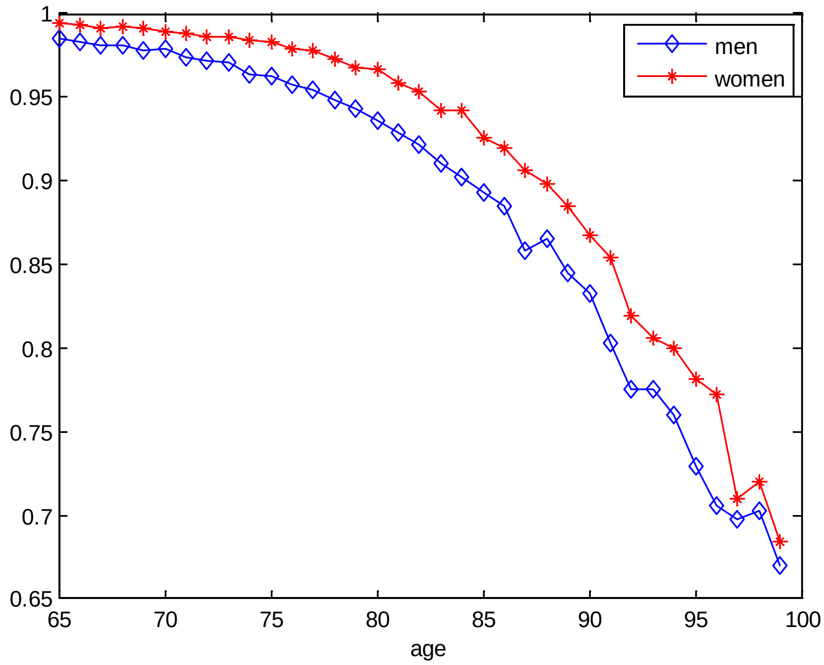
I solve the household problem separately for different combinations of wife's and husband's own pensions and also with and without survivors' pensions. The household problem is solved recursively. I consider a discrete savings grid. Corresponding to the borrowing constraint, the first grid point is zero. The last grid point is set high enough so that it is never binding. I first determine the period *J* value functions by solving the problems of a widow, a widower and a couple household for all savings in the grid. Since survival probabilities in period *J* are equal to zero, there is no need to know period *J+1* value functions when solving for period *J* value functions. Given period *J* value functions, I can then determine period *J-1* value functions, and so on until period 1. I allow the savings decision to be continuous and use interpolation to determine the value of the value functions between grid points.

2.2. Calibration

Before solving the model numerically, I need to specify all functional forms and parameter values. I now describe the baseline parameterization.

I assume that a model period corresponds to one year. I set the annual (real) interest rate at $r = 0.02$. I consider a couple where both spouses are initially (in period $j=1$) age 65. The survival probabilities are taken from Finnish 2006 life tables for the total population. I further assume a maximum age of 99 implying J=35. Figure 1 displays the annual survival probabilities. As can be seen from the Figure, there is a significant survival gap between women and men in every age.

Figure 1: Survival probabilities.



I consider different combinations of spouses' own pensions. I consider monthly own pensions equal to 700, 1400 and 3000 euros (I multiply these figures by 12 to get annual pensions). In 2011, the average new (old age) pension in Finland was approximately 1400 euros (Finnish Center for Pensions, 2012). In all cases, I assume that the initial savings (in period 1) of the household are 230 000 euros, which is the average net worth of households in age group 60-65 in Statistics Finland's 2008 Wealth Survey.

Given spouses' own pensions, survivors' pensions are determined according to the benefit rules of the Finnish pension system. The resulting survivors' pensions are shown in Table 1 (see Takala 2013, p. 29). The monthly survivors' pension depends on the difference between the own pension of the surviving spouse and that of the deceased spouse. Since there is no upper limit, the survivors' pension can be very large in cases where the own pension of the deceased was much higher than that of the surviving spouse.

Table 1: Monthly survivors' pensions, euros.

	Deceased's pension		
Survivors' own pension	**700**	**1400**	**3000**
700	332	682	1482
1400	0	332	1132
3000	0	0	332

Following Brown and Poterba (2000), periodic utility for a couple household is determined as:

$$u(c^m, c^f) = \frac{1}{1-\sigma}\left(c^m + \lambda c^f\right)^{1-\sigma} + \frac{1}{1-\sigma}\left(c^f + \lambda c^m\right)^{1-\sigma} \tag{3}$$

Parameter $0 \le \lambda < 1$ captures the degree of consumption 'jointness' or complementarity between spouses' individual consumptions. Because of complementarities it is likely that members of a couple household achieve the same economic welfare with lower per capita expenditures than a person that lives alone. Higher λ means higher degree of consumption jointness. Notice that it is always optimal to choose $c^m = c^f$. Parameter $\sigma > 0$ measures both relative risk aversion (aversion to consumption changing across states of nature) and intertemporal substitution. When σ increases the utility function becomes more concave in consumption. With very concave utility function, households have a strong motive to try and smooth consumption over time. The case where $\sigma = 1$ is not defined by (3) but corresponds to the logarithmic utility function.

In the case of a single person household, the periodic utility function is simply

$$u(c) = \frac{1}{1-\sigma} c^{1-\sigma}. \tag{4}$$

Utility from leaving a bequest is determined as

$$g(a) = \theta \frac{1}{1-\sigma} c^{1-\sigma}, \tag{5}$$

where $\theta \ge 0$ determines the strength of the bequest motive.

I assume that the subjective discount rate is close to the interest rate by setting the discount factor at $\beta = 0.98$. In the baseline calibration, I set the consumption jointness parameter at $\lambda = 0.5$. This means that half of all consumption is joint in the sense that it benefits both members of the couple. This assumption is in line with the results in Bradbury (1996).

I am left with the bequest weight parameter θ. This parameter largely determines the optimal amount of pension insurance relative to ordinary (non-annuitized) savings. Because of the bequest motive, households would not like to annuitize all their savings even if they could do it for a price that is actuarially fair (i.e. for a price that corresponds to the expected present value of the pension payouts). More generally, given savings and pensions the welfare gain from pension insurance decreases as we increase the utility weight on bequests.

I am not trying to evaluate whether the size of the overall Finnish pension system is appropriate. Instead, I want to focus on the importance of survivors' pensions relative to the overall pension insurance. I therefore set the utility weight on bequests so that roughly speaking the size of the overall pension insurance is optimal for a household with average pension income and average savings.

Specifically, for a given value of θ I ask how much a couple with average pensions (1400 euros for both members) and average savings (230 000 euros at age 65) would be willing to pay for a small (5 per cent) increase in all their pensions (including survivors' pensions). I then compare that value, the equivalent wealth compensation for the increase in pensions, to the expected present value of the increase. I find a value for θ such that the equivalent wealth compensation roughly equals the expected present value of the increase together with administrative costs of providing the pensions which I assume to be 10 % of the expected present value. Following this procedure, I end up setting the utility weight on bequests at $\theta = 1.0$. As I show below (in Table 5), even though pensions vary across the example households, the size of the overall pension system is roughly optimal also for the other example households.

3. Results

3.1. Baseline results

Table 2 reports the expected present value of survivors' pensions for the example households at age 65. The expected present value is computed using the same interest rate and survival probabilities that are used in the calibrated household problem. [4]

The highest expected present value in the Table is 87 000 euros and it corresponds to the case where husband's own pension is 3000 euros a month and wife's own pension 700 euros a month. Naturally, these present values reflect

[4] For simplicity, I abstract from taxation. The expected present values of *after-tax* survivors' pensions would be somewhat smaller. In what follows, I mainly compare the expected present value of survivor's pensions to the welfare increase that they provide as measured by the equivalent wealth compensation. Taking progressive income taxation into account would not affect those results substantially since it would decrease both the expected present value and the equivalent wealth compensation.

differences between the survival rates of men and women. In particular, it is much more likely that it is the wife, rather than the husband, who will receive survivors' pensions.

Table 2: Expected present value of survivors' pensions, 1000 euros.

	Wife's pension		
Husband's pension	**700**	**1400**	**3000**
700	28	16	36
1400	40	28	27
3000	87	67	28

I now consider how much survivors' pensions increase the welfare of the example households. I first solve the household savings problem with and without survivors' pensions. I then compute the increase in initial savings, or the equivalent wealth compensation, that would make the expected remaining lifetime utility (again, at age 65) of households without survivors' pensions equal to the expected remaining lifetime utility of households with survivors' pensions. The equivalent wealth compensation is a welfare based measure of the value of survivors' pensions.

The results are shown in Table 3. For instance, a couple where husband's pension is 1400 and wife's pension 700 euros a month, would not be willing to give up current survivors' pensions for a lump-sum transfer that is less than 55 000 euros. Comparing Tables 2 and 3 shows, first of all, that the equivalent wealth compensation for survivors' pension is always substantially higher than their expected present value. As I discussed in the Introduction, the difference between the expected present value and the equivalent wealth compensation stems from the insurance role of survivors' pensions. Hence Table 3 tells us that survivors' pensions are a valuable form of insurance for all example households.

The households that receive the largest survivors' pensions in expected present value terms also value them the most in welfare terms. In this sense, the benefit rule is well designed. Intuitively, a useful survivors' pension scheme helps to smooth per-capita consumption over time and across different household states (couple, widow, and widower). The survivors' pensions provided by the Finnish pension system reflect this idea, since they provide a large pension in case the survivor's own pension is small relative to that of the deceased spouse.

However, the equivalent wealth compensation varies quite a bit relative to the expected present value. This is easy to see from Table 4, which displays the equivalent wealth compensation divided by the expected present value of survivors' pensions. The ratio of the equivalent wealth compensation to the expected present value is the highest (2.09) for a couple where wife's own pension is 3000 euros a month and husband's own pension only 700 euros. Intuitively, relative to the cost of providing insurance, insurance against low-probability risks is more useful than insurance against relatively high-probability risks. In this case, since women are likely to live longer than men, the low-probability risk is that the husband lives alone for a long time. Therefore, survivors' pensions are most useful to a couple where husband's own pension is low relative to wife's own pension.

Table 3: Equivalent wealth compensation for survivors' pensions, 1000 euros.

	Wife's pension		
Husband's pension	**700**	**1400**	**3000**
700	32	24	75
1400	55	32	45
3000	144	98	33

Table 4: Equivalent wealth compensation for survivors' pensions relative to their expected present value.

	Wife's pension		
Husband's pension	**700**	**1400**	**3000**
700	1.16	1.48	2.09
1400	1.37	1.18	1.66
3000	1.64	1.47	1.18

The example households have different levels of pension insurance relative to ordinary (non-annuitized) savings. This implies that the optimal size of the overall pension insurance differs among these households. It is therefore possible that the differences in the insurance value of current survivors' pensions among the example households merely reflect differences in the appropriate level of the overall pension insurance, rather than differences in the appropriate level of survivors' pensions.

Table 5 shows, however, that that is not the case. It displays the equivalent wealth compensation for a small (5 %) increase in all pensions, relative to the expected present value of the increase. Recall that I calibrated the model so that this ratio is approximately 1.1 for a couple where both spouses have an own pension equal to 1 400 euros a month. As can be seen from the table, the ratio is roughly the same for all example couples considered. Together with the results in Table 4, this implies that the example households really disagree about the optimal level of survivors' pensions relative to the current system, and not so much about the optimal size of the overall pension system.

Table 5: Equivalent wealth compensation for a 5 % increase in all pensions relative to the expected present value of the increase.

	Wife's pension		
Husband's pension	**700**	**1400**	**3000**
700	1.13	1.11	1.06
1400	1.11	1.09	1.06
3000	1.07	1.07	1.05

3.2. Sensitivity analysis

There are three preference parameters in the model, namely θ, σ, and λ. They govern, respectively, the strength of the bequest motive, the degree of risk-aversion, and the degree of consumption jointness in a couple household. I now discuss the sensitivity of the welfare results with respect to changes in these parameters. Recall that the baseline parameter values are $\theta = 1.0$, $\sigma = 2$ and $\lambda = 0.5$. In addition, I consider a case where there is an age difference between the spouses.

The degree of consumption jointness is likely to be important for the results. When λ is very high, living alone is effectively much costlier than living in a couple household. Survivors' pensions should be particularly useful in that case.[5] Table 6 displays the equivalent wealth compensation for survivors' pensions relative to their expected present value assuming that there is no consumption jointness at all, that is λ =0. All other parameters are the same as in the baseline calibration.

Comparing Table 6 with Table 4 shows that without consumption jointness, survivors' pensions are indeed less valuable in welfare terms than in the baseline calibration. In particular, the ratio is about 1 in cases where the spouses' own pensions are equal. Intuitively, in the case where there is no consumption jointness and the spouses' own pensions are equal, becoming a widow or a widower does not reduce per capita consumption possibilities. Hence survivors' pensions are not needed to smooth per capita consumption over time and across household states. On the other hand, Table 6 also reveals that survivors' pensions are still quite valuable in cases where spouses' own pensions are very different. Survivors' pensions complement the income of the spouse that has a smaller own pension in case he or she lives alone.

[5] In the special case of logarithmic utility, however, consumption jointness does not matter for the welfare results. With $c^m = c^f = c$, utility for a couple household can be written as $2\log(1+\lambda) + 2\log(c)$. Hence, the consumption jointness parameter simply adds a constant to the objective function and does not affect optimal behavior or the welfare results.

Table 6: Equivalent wealth compensation for survivors' pensions relative to their expected present value. No consumption complementarities ($\lambda = 0$).

	Wife's pension		
Husband's pension	**700**	**1400**	**3000**
700	0.98	1.30	1.86
1400	1.18	1.00	1.45
3000	1.46	1.27	1.00

It is clear that the lower is the value of the risk-aversion parameter, the lower is the value of survivors' pensions in welfare terms. This is because a higher risk-aversion means a stronger desire to smooth consumption over time. It is also clear that increasing the strength of the bequest motive would decrease the value of survivors' pensions. However, both lower risk aversion and stronger bequest motive would also decrease the value of the overall pension insurance. Hence, it is not clear that these parameters affect the relative importance of survivors' pensions in the overall pension system, which is what I am mainly interested in.

Table 7 presents the equivalent wealth compensation for survivors' pension relative to the expected present value with $\sigma = 1$. This value is at the lower end of the range of conventional estimates for the risk-aversion parameter. In addition, as explained in footnote 7, consumption jointness does not play a role in this logarithmic case. Hence, if anything, this case should underestimate the value of survivors' pensions in welfare terms.

Comparing Table 7 with Table 4 shows that the insurance value of survivors' pensions is again indeed smaller than in the baseline case. However, it is still true that those that receive the very highest survivors' pensions in expected present value terms, also value them the most in welfare terms. Moreover, in this case, the value of the overall pension system is also somewhat lower than in the baseline case. For instance, for a household were both spouses have own pensions equal to 1400 euros, the equivalent wealth compensation for a small increase in all pensions falls by about 5 % (results not shown).

Table 7: Equivalent wealth compensation for survivors' pensions relative to their expected present value. Logarithmic preferences.

	Wife's pension		
Husband's pension	**700**	**1400**	**3000**
700	1.00	1.14	1.38
1400	1.10	1.00	1.20
3000	1.22	1.13	0.99

So far I have assumed that the spouses are of the same age. Naturally, the role of survivors' pensions can be very different in cases where there is a large age difference between spouses. In Finland, the average age difference in married couples is 3.4 years, with men being older. Based on that figure, I now consider couples where the husband is initially (in period $j=1$) age 68 and the wife is age 65. I set other parameters at their baseline values.

Naturally, compared to the baseline calibration where the spouses are of the same age, the expected present value of survivors' pensions increases in (typical) cases where husband's own pension is higher than wife's own pension. For instance, in the case where husband's own pension is 3000 euros and wife's own pension is 700, the expected present value of survivors' pensions increases from 87 000 euros to 105 000 euros. At the same time, the expected present value of survivors' pensions decreases in cases where it is the wife that has a higher own pension. More generally, it is clear that in present value terms survivors' pensions are particularly valuable for couples where the spouse having a higher own pension is also much older than the other one.

Table 8 presents again the equivalent wealth compensation for survivors' pensions relative to their expected present value. The ratios are quite close those in the baseline case (Table 4). Taking the average age difference into account does not change our previous results regarding the insurance value of survivors' pensions substantially.

A closer comparison reveals that compared to the baseline case, the ratio of the equivalent wealth compensation to the expected present value is now about 5 % higher for a couple where wife's own pension is 3000 euros and husband's own pension is 700 euros. In other words, relative to their expected present value, survivors' pensions paid to a widower are even more valuable in welfare terms than in the baseline case. This reflects the fact that the probability of the husband becoming a widower is now lower than in the baseline case. As discussed above, relative to the cost of providing insurance, insurance against low-probability risks is particularly useful.

Table 8: Equivalent wealth compensation for survivors' pensions relative to their expected present value. The husband is 3 years older than the wife.

	Wife's pension		
Husband's pension	**600**	**1400**	**3000**
700	1.19	1.45	2.19
1400	1.38	1.20	1.67
3000	1.57	1.45	1.19

4. Conclusions

Survivors' pensions in Finland provide a significant net transfer from singles to certain type of married couples. Moreover, the households that can expect to receive high survivors' pensions are generally not poor in terms of lifetime income. It is therefore easy to criticize survivors' pensions on equity grounds.

On the other hand, the results of the present paper suggest that the insurance provided by the survivors' pension scheme is likely to be very valuable for the households that are effectively covered by it, at least assuming that the overall pension system is not too large. The scheme helps couples with very different own pensions to smooth per capita consumption over time. The current benefit rule for survivors' pensions is well designed in the sense that it reflects the need for such insurance. In fact, in the absence of distributional concerns, it would probably be optimal to further increase survivors' pensions relative to other pensions.

Survivors' pensions are not important in preventing old age poverty. The overall pension system in Finland features elements such as disability insurance and the flat-rate national pension, that are far more important in that respect. Arguably, if well-functioning private markets for survivors' pensions existed, survivors' pensions could therefore be eliminated from the compulsory pension system altogether. Individual households could then purchase the kind of 'survivor annuities' that best fit their needs.

Unfortunately, the market for private annuities is almost inexistent in Finland. Simply abolishing the survivors' pension scheme might therefore imply a significant welfare loss as households would be less protected against longevity risks. One way to address this concern would be to try and promote the emergence of a private annuity market with e.g. tax incentives. Alternatively, the government should consider linking pension contribution rates to household status so that those who can expect to benefit from the survivors' pension scheme would pay higher pension contributions than others.

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