Early Pension Claiming and Expected Longevity: A Register-Based Study on the Take-up of the Partial Old-Age Pension in Finland

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Abstract

As of February 2017, Finns have been able to claim a partial old-age pension early at age 61 independent of their working hours or earnings. Focusing on the take-up of the partial old-age pension in Finland, this article investigates whether early pension claiming is associated with expected longevity. We assume parental longevity to signal expected longevity. We use total register data on those eligible to claim a partial pension at age 61 in 2018 or 2019 and link this data to the information on their parents' birth and death dates. To our knowledge, there exists no previous register-based study that uses parental longevity to explain pension claiming behaviour. Since the longevity of the same-sex parent in particular influences subjective life expectancy, the variables of interest were the same-sex parent being alive and the age (at death) of the same-sex parent. The baseline results show a negative connection between the same-sex parent being alive and claiming. The connection disappears after controlling for gender, but the negative connection between the age (at death) of the same-sex parent and the claiming remains significant in a fully adjusted model. Known risk factors for shorter longevity, such as being male, having a lower income and wealth, also increase the likelihood of claiming. The results indicate that people take their expected longevity into account when making pension claiming decisions. This may hold critical implications for actuarial neutrality, the key assumption of the pension system design, and can lead to an unexpected increase in public pension expenditure.

Keywords: Old-age pension, early pension claiming, expected longevity, parental longevity

Early Pension Claiming and Expected Longevity: A Register-Based Study on the Take-up of the Partial Old-age Pension in Finland

This article examines whether expected longevity influences when pensions are claimed. According to a life-cycle framework, retirement decision-making involves individuals' subjective evaluation of the costs and benefits of pension claiming and retirement. It is assumed that an individual claims pension benefits and retires at an optimal age that maximises the expected present value of life-time utility. The decision to claim pension benefits and the decision to retire are not necessarily the same. While the expected utility depends on many factors, such as the level of accrued pension and wealth, a central factor in defining the expected life-time utility is the expected lifespan of an individual (e.g. Hurd, Smith, & Zissimopoulos, 2004).

By design, pension benefits are intended to be actuarially neutral. This means that the expected present discounted value of the pension benefits that an individual receives during their remaining life time is invariant to the age of taking out pension benefits. If benefits are taken out early, the level of the monthly benefits decreases, and if the benefits are drawn late, the level of the monthly benefits increases so that the lifetime stream of pension benefits remains constant.

Actuarial neutrality is based on the expected average lifespan of a representative individual in each cohort. Due to individual-specific mortality rates, the actuarial adjustment of benefits cannot be truly neutral for the entire eligible population. Individuals with shorter-

than-average longevity will receive lower lifetime benefits than the representative individual who retires at the same age, and vice versa for those with longer-than-average longevity.

The aforementioned does not affect the neutrality of the actuarial adjustment from a public policy standpoint, unless people act on these differences by choosing different claiming ages. For example, if persons with shorter expected longevity claim early, this creates losses to the pension system due to adverse selection; more pensions will be paid than is assumed in actuarial neutrality calculations. For the same reason, those with a shorter expected longevity benefit from early claiming. They receive more pension payments during their lifetime than they would otherwise. In addition, they do not live long enough to compensate all the costs of early claiming in the form of a lower monthly pension benefit. For those with a shorter-than-average expected longevity, it would therefore be beneficial to claim pension benefits as early as possible in order to maximise the expected present value of their life-time utility.

Many factors influence individual's life expectancy. It is known that men tend to die at an earlier age than women. Likewise, those in higher socio-economic positions tend to be healthier and have a longer life expectancy than those in lower positions, and a higher educational level is related to higher life expectancy, and vice versa. Finally, those with more wealth or higher income tend to live longer. (Brinch, Fredriksen, & Vestad, 2018; Mirowsky & Ross, 2000; Pörtner & Wong, 2013.) These factors also influence retirement decisions and are typically controlled for in retirement models. An often neglected factor that may influence the timing of retirement via its effect on subjective life expectancy is parental longevity. In this article, we take parental longevity into account in the retirement model.

Very limited empirical evidence exists on the association between life expectancy and retirement or pension claiming behaviour. There are only a handful of studies, and practically

all of them are based on surveys and use subjective life expectancy as a proxy for expected longevity (Bloom, Canning, Moore, & Song, 2006; Delavande, Perry, & Willis, 2006; Griffin, Hesketh, & Loh, 2012; Hurd et al., 2004; Khan, Rutledge, & Wu, 2014; O'Donnel, Teppa, & van Doorslaer, 2008; van Solinge & Henkens, 2010). An exception is Brinch et al. (2018). They use Norwegian total register data, including a whole cohort, and estimate their expected longevity based on the connection between observed characteristics and mortality for the entire population over several years. Brinch et al. (2018) use information on parental longevity in estimating the expected longevity but do not directly utilise this information as an explanatory variable in the retirement model.

The use of parental longevity as a measure for expected longevity is justified since there is a significant positive connection between parents' longevity and subjective life expectancy (Beauchamp & Wagner, 2020; Bloom et al., 2006; Hurd & McGarry, 1995; Khan et al., 2014; van Solinge & Henkens, 2010, 2018). Not only is parental lifespan connected with subjective longevity expectations, but there is also a strong link between actual parental and offspring longevity. Individuals with longer-lived parents exhibit a lower mortality risk, and this connection remains even after controlling for the health status of the offspring, suggesting the presence of a genetic component (Kemkes-Grottenthaler, 2004; Pörtner & Wong, 2013; Vågerö, Aronsson, & Modin, 2018).

The longevity of the same-sex parent in particular significantly influences subjective life expectancy. Van Solinge & Henkens (2010, 2018) found that the current age or age at death of the same-sex parent, as well as the same-sex parent being still alive, strongly and positively affect subjective life expectancy. Khan et al. (2014) made similar observations. Longevity of the other sex parent had a much smaller effect. In a similar manner, the longevity of the same-sex parent influences actual offspring longevity. There is a strong and

significant association between the paternal lifespan and male offspring longevity, on the one hand, and maternal lifespan and female offspring longevity, on the other (Brandts, van Poppel, & van der Brandt, 2020).

There is some evidence that life expectancy is connected with retirement and pension claiming decisions. Hurd et al. (2004) observed that, in the US, those with very low subjective probabilities of survival claim pensions earlier than do those with higher subjective survival probabilities. In a similar manner, Delavande et al. (2006) discovered a positive relationship between a longer expected longevity and a delay in claiming. In Norway and in the US, those with a shorter expected longevity have been observed to claim a pension earlier (Beauchamp & Wagner, 2020; Brinch et al., 2018). A connection between subjective life expectancy and the retirement decision has also been found in the Netherlands: those who expected to live longer intended to retire later, and vice versa. However, these intentions were not realised in the form of a higher actual retirement age. (van Solinge & Henkens, 2010.) In Australia, Griffin et al. (2012), in turn, found not only a connection between subjective life expectancy and intended retirement age but also observed that those with a lower subjective life expectancy were more likely to actually retire sooner than those with a higher subjective life expectancy.

The Finnish pension system was reformed in 2017. As of February 2017, individuals have been able to claim a partial old-age pension (25 or 50 per cent of their accrued monthly pension) at any time starting from age 61, with no restrictions regarding working hours and earnings. In this particular Finnish case, retirement and pension claiming are hence separate decisions. The aim of the partial old-age pension was to increase individual flexibility in the transition into old-age retirement and to motivate and enable people to work longer by increasing individual choices in combining work and personal life needs without a significant

decrease in total income. Reasons for taking out a partial old-age pension early have been investigated in several surveys (e.g. Finnish Centre for Pensions, 2017). In all surveys, the main reason for taking out a partial old-age pension early was related in one way or another to an uncertainty about the future. The second most cited reason was a desire to improve one's financial situation. It is therefore reasonable to expect that shorter expected longevity would increase the early claiming of a partial pension.

The main research question in this article is whether an early pension claiming is associated with expected longevity. In order to test this, the focus is on the take-up of a partial old-age pension in Finland. Unlike previous studies, which have been based on surveys and used subjective life expectancy in their retirement models, the present study is based on register data and therefore offers an exceptional possibility to investigate the connection between expected longevity and pension claiming behaviour. We use parental longevity as a proxy for expected longevity. Earlier studies have established a link between a) parental longevity and subjective life expectancy and b) parental and offspring longevity. Longevity of the same-sex parent in particular has proved important in both respects. Therefore, in this article, we assume shorter longevity of the same-sex parent to signal shorter expected longevity, and assume this to be associated with claiming behaviour. In particular, we derive the following hypotheses:

Hypothesis 1. If the same-sex parent has died, the likelihood of claiming the partial old-age pension early is higher

Hypothesis 2. A shorter lifespan of the same-sex parent is associated with a higher likelihood of claiming a partial old-age pension early

We use total register data and focus on *all individuals* who became eligible to claim a partial old-age pension early during the first and second full calendar year, that is, at age 61 in 2018 or 2019. We then link this data to the information on their parents' birth and death dates. To our knowledge, there exists no earlier register-based study using parental longevity to explain retirement or pension claiming behaviour.

Flexibility in Pension Take-up in Finland and Other Countries

Statutory earnings-related pensions, which accrue throughout the working life with contributions by employees and employers, form the main pillar of the Finnish pension system. The Finnish pension system was reformed in 2017 (see e.g. Reipas & Sankala, 2015). As a result, the lowest eligibility age for the old-age pension (63 years) increases by three months for each cohort, starting from those born in 1955. After reaching 65, the lowest eligibility age is linked to the increase in life expectancy.

The reform of 2017 introduced a new type of pension in the form of a partial old-age pension. Under this scheme, as of February 2017, individuals have been able to take payment of 25 or 50 per cent of their accrued monthly earnings-related pension benefits between ages 61 and 68, with no restrictions on their working hours or earnings. The partial old-age pension is paid in monthly benefits. If the partial pension is taken out early, that is, before the eligibility age for a full old-age pension, the portion of the pension that is taken out early is reduced by 0.4 per cent for each month prior to that age. The reduction is permanent. If the partial old-age pension is taken out late, after reaching the eligibility age for a full old-age pension, the pension is increased by 0.4 per cent for each month that the pension is deferred.

Every year more than 10,000 Finns claim a partial old-age pension. Statistics show that 90 per cent of partial old-age pension claimers have claimed the pension early. The most common age of claiming is 61: around 10 per cent of persons aged 61 take out a partial old-age pension. In the following years, before reaching the earliest eligibility age for a full old-age pension, another 10 per cent of each cohort draws a partial old-age pension. Nearly 90 per cent of the claimants have drawn half of their accrued monthly old-age pension. (Finnish Centre for Pensions, 2020.)

The partial old-age pension is a flexible pension. The only condition is that a person cannot receive any other earnings-related pension when claiming a partial old-age pension. Hence, while drawing the pension, a person can continue to work as before, decrease their working hours or stop working altogether. Also unemployed and persons outside the labour force are entitled to a partial old-age pension. The partial old-age pension does not affect the amount of the unemployment benefit. Statistics show that a majority of the claimants have continued working as before: only one third of employed claimants has reduced their working hours after claiming a partial old-age pension (Finnish Centre for Pensions, 2020).

With rising retirement ages and the pressures to lengthen working lives, the current trend in pension system design in many countries seems to lean towards increasing individual choices and options for pension take-up. The Nordic countries seem to be forerunners in this respect. For example, the systems in Sweden and Norway closely resembles that in Finland: as of age 61 (Sweden) or 62 (Norway) people can draw an early old-age pension regardless how much they work or earn. In both countries it is possible to draw the full old-age pension early. (Vidlund, 2017.) Some other countries, for example Germany, also have partial old-age pension systems, but typically the earnings or working hours are restricted (Finnish Centre for Pensions, 2021a). Drawing pensions is becoming more flexible in many countries. For

example, in the United Kingdom, most people over 55 can choose how to use their supplementary pension savings (Finnish Centre for Pensions, 2021b). In the Netherlands, people will soon be able to draw up to 10 per cent of their accrued pension entitlements as a lump sum when they retire (Meijburg, 2021). Hence the connection between life expectancy and pension claiming is becoming topical in many countries.

Data and Methods

Data

The data used in this study are from the longitudinal census file of Statistics Finland, which contains information collected in population and housing censuses, supplemented with information from various official registers. Consequently, the data offer rich information on the Finnish population. This large data set contains information on various individuals' characteristics (for example education, socioeconomic status, economic activity, income). Crucial for the purposes of this study is that individuals' parents can be identified.

For this study, all persons who were eligible for a partial old-age pension at the age of 61 in 2018 or 2019 were selected. We then linked this data to the information on their parents' birth and death dates. Since it has been observed that the longevity of, in particular, the same-sex parent influences subjective life expectancy, we focused on the information concerning the same-sex parent. The persons included in the data were born between December 1956 and November 1957 (2018) as well as December 1957 and November 1958 (2019). The number of observations in 2018 was 56,332. Information on the same-sex parent's birth and death dates was available for 50,818 persons, that is, for 90 per cent of all observations. Of these, 5,091 (10%) claimed a partial pension. The number of observations in 2019 was 55,578. Information on the same sex parent's birth and death dates was available for 50,101 persons,

that is, for 90 per cent of all observations. Of these, 5,528 (11%) claimed a partial old-age pension. For the target group of this article, the full retirement age varies between 63 years and 6 months (those born in 1956) and 64 years (those born in 1958).

Variables

Dependent Variable

This dummy variable indicates the claiming status of a partial old-age pension, that is, whether a person has taken out the pension during one of the years under study (2018 or 2019).

Independent Variables

It has been observed that the longevity of the same-sex parent in particular influences subjective life expectancy (Khan et al., 2014; van Solinge & Henkens, 2010), so central variables of interest relate to the longevity of the same-sex parent. Parental longevity was constructed on the basis of the parent's actual age at the year of inspection, or the age at death if the parent had died (cf. O'Donnel et al., 2008; van Doorn & Kassl, 1998; van Solinge & Henkens, 2010). On the basis of the individual's gender, this information was transformed into a variable indicating age (at death) of the same-sex parent. Moreover, a dummy variable indicating whether the same-sex parent was still alive was constructed.

Control variables

Several factors influence retirement decision-making. Some of them are also known to influence longevity. In this article we control for gender, health, education, socio-economic status, working sector, labour market status, family situation, income and wealth, and length of working career, all of which are well-known determinants of the retirement decision with

varying emphasis in different countries (see e.g. Scharn, Sewdas, Boot, Huisman, Lindeboom, & van der Beek, 2018; Wang & Schultz, 2010).

The health of an individual is measured via sickness benefits received during a year. A dummy variable indicates whether the person has received sickness benefits exceeding 1,000 euros per year. This equals receiving approximately one month of sickness benefits during one year. Education includes four categories: 1) basic education, 2) secondary education, 3) lower tertiary education and 4) higher tertiary education. Wage-earners' socio-economic status is based on an occupational classification and separates upper-level and lower-level non-manual employees and manual workers, and the group "other", which includes the self-employed and farmers, as well as the unemployed and persons outside the labour force for whom occupation cannot be identified going back several years. The employment sector controls for private and public sector employees, self-employed persons and farmers. The sector is defined based on the longest employment contract for each individual and therefore applies to virtually all persons. Labour market status is measured at the end of the year and indicates whether the individual is employed, unemployed or outside the labour force. Family situation controls for having a partner or being single. Income includes an individual's annual income subject to state taxation. Wealth is measured via the indicator of home-ownership.[1] Length of working career indicates the number of years the person has been employed or self-employed. All explanatory variables are measured prior to claiming a partial old-age pension, that is, in 2017 or 2018.

[1] Especially among older people, housing equity is the most significant component of wealth (Statistics Finland, 2018).

Statistical Analysis

We began by making a descriptive analysis of the data, presented in Tables 1, 2 and 3. Next, we used the claiming status of a partial old-age pension (claimant vs. non-claimant) as a dependent variable in logistic regression models. Separate models for the years 2018 and 2019 were estimated. Two separate years and two separate sets of individuals were investigated in order to verify that the results hold independent of inspection year. At first, the connection between parental longevity and the claiming of a partial pension was examined (non-adjusted baseline model). After that, gender was added to the model (specification 2). Finally, education, socio-economic status, working sector, labour market status, family situation, income, home-ownership status and length of working career were included in the model (full model specification 3). The results of the logistic models are presented as odds-ratios (OR). ORs and confidence intervals of the explanatory variables, as well as test statistics for the baseline and full model (model: $\chi 2$), are presented in Table 4.

Results

Table 1 describes the characteristics of the data. As can be seen, the means of variables and their standard deviations are fairly similar in both years. The same-sex parent was alive for 30 per cent of the individuals, and the average age (at death) of the same-sex parent was almost 79 years. The share of females is 53 per cent, and 70 per cent have a partner. Around 15 per cent have only a basic education, while the share of the highly educated is slightly over 10 per cent. The share of manual workers is slightly less than 30 per cent, and around 20 per cent are upper-level employees. Over 50 per cent work in the private sector, while around 10 per cent are self-employed. About 15 per cent were unemployed at the

end of the previous year, and 80 per cent own their home. The length of working career is 35 years on average.

<Table 1 around here>

The number of observations and the share of those claiming a partial old-age pension by each dummy explanatory variable are presented in Table 2, while Table 3 describes the distribution of continuous variables by claiming status. It can be seen that the claiming rate is about 10 per cent in both years. Those claiming a partial pension differ from those not claiming the pension. With regard to parental longevity, Table 2 shows that those whose same-sex parent has died, more often claim a partial pension. Table 3, in turn, shows that the same-sex parents of those claiming a partial pension are younger (died younger) than the parents of those not claiming the pension.

The majority of the claimants of the partial pension are men. Health does not impact the claiming rate in 2018, but in 2019 those who had received sickness benefits, claimed a partial pension less actively. As a rule, the claimants of the partial pension have a basic education and are manual workers. Less often they have a higher tertiary education and are upper-level employees. Those who work in the private sector or are self-employed take out a partial pension more actively. The unemployed claim a partial pension more frequently than employed persons, although the difference is not significant in 2018. The claimants of a partial pension are more often in a relationship and do not own their home. Furthermore, Table 3 shows that those who claim a partial pension have a lower income and have longer working careers than those who do not claim the pension.

<Table 2 and 3 around here>

Table 4 shows the estimation result of logistic models. The non-adjusted odds-ratio (OR) for the same-sex parent being alive is significant and 0.92 in 2018 and 0.93 in 2019. In other words, those whose same-sex parent has died, claim a partial pension more often. The age (at death) of the same-sex parent has a significant negative effect: the ORs are 0.90 in both years. This means that those whose parents are younger, that is, died at a younger age, have a higher likelihood of claiming a partial pension early.

From Table 2 it appears that men claim a partial pension more actively than women. It is well-known that men tend to die younger than women, so the effect of the same-sex parent being dead could reflect the overrepresentation of men in the data. Therefore, the next step was to include gender into the model. Specification 2 shows that gender is significant: women are less likely to claim a partial pension. Moreover, after gender is included in the model, the variable indicating the same-sex parent being alive becomes non-significant. However, the age (at death) of the same-sex parent remains significant. Hence, the effect of the same-sex parent being alive mainly reflects the effect of gender. Hypothesis 1 is hence not supported. In the full model (specification 3), where all other factors are controlled for, the OR of age (at death) of the same-sex parent remains significant and is 0.93 in both years under review. Hence, in line with Hypothesis 2, independent of other factors, a shorter longevity of the same-sex parent increases the claiming of the partial old-age pension.

When it comes to other determinants of claiming a partial old-age pension, the results show that health (as measured here) has no effect in 2018, and in 2019, those who drew a sickness benefit during the previous year claimed a partial pension less often. Education is not systematically linked to the claiming behaviour; only those with a lower tertiary education are

more likely to claim a pension than others in 2018, and in 2019 there is no difference between educational levels. In relation to upper-level employees, employees working in lower-level non-manual occupations have a higher likelihood of claiming in both years. In 2018 also manual workers claim a partial pension more likely than upper-level employees. In relation to private sector wage-earners, those working in the public sector and farmers have a lower probability of claiming, while self-employed persons are more likely to claim the benefit. The unemployed claim the pension more likely than employed persons. Also those with a partner have a higher propensity to claim, while home-owners claim a partial pension less likely. Moreover, the claimants of the partial pension have significantly lower incomes and longer working careers than the non-claimants.

<Table 4 around here>

Conclusion

The aim of this study was to explore the effect of expected longevity on early pension claiming. This was examined via take-up of the partial old-age pension in Finland. Parental longevity was used as a measure of expected longevity, since parental longevity is connected with subjective life expectancy and actual offspring longevity. The longevity of the same-sex parent in particular is important in both respects. (Brandts et al., 2020; Kemkes-Grottenthaler, 2004; Khan et al., 2014; Pörtner & Wong, 2013; van Solinge & Henkens, 2018; Vågerö et al., 2018.) Previous studies have been mainly based on surveys and used subjective life expectancy in their retirement models. The present study was based on total register data which offered an exceptional possibility to investigate how the expected longevity, as measured by parental longevity, is connected to early pension claiming behaviour. In the

present study, parental longevity was controlled for with two variables: same-sex parent being alive and the age (at death) of the same-sex parent.

The results show that the same-sex parent of claimants of the early old-age pension has more often died. Moreover, the age (at death) of the same-sex parent is negatively related to the claiming of the partial pension. In other words, the same-sex parent of the claimants has died at a younger age than the same-sex parent of the non-claimants. While the effect of the same-sex parent being dead disappears after controlling for various personal characteristics (gender in particular), the negative connection between the age (at death) of the same-sex parent and claiming a partial pension remains strongly significant in the fully adjusted model. Hence, the results indicate that people take their expected longevity into account when making pension claiming decisions. This is in line with earlier results derived mainly using surveys and subjective life expectancy (Beauchamp & Wagner, 2020; Brinch et al., 2018; Hurd et al., 2004).

According to surveys, major reasons for claiming an early partial old-age pension in Finland are uncertainty about the future and a desire to improve one's financial situation (e.g. Finnish Centre for Pensions, 2017). Overall, the results of our study are in line with this. It is known that men tend to have shorter longevity than women. Hence it is not surprising that men more often claim the partial old-age pension. The lower tendency for women to claim the partial pension could also partly be related to their need to delay pension claiming due to their interrupted careers and lower accumulated pension benefits (e.g. Damman, Henkens, & Kalmijn, 2015; König, 2017). However, an adjustment for the length of working career did not explain the gender difference.

For the self-employed and the unemployed, and persons with a lower income and lower wealth the reasons behind more active claiming are likely to be related to the desire to

improve their financial situation, although it is also known that those with a lower income or wealth tend to die earlier (e.g. Pörtner & Wong, 2013). Weaker health as measured by sickness absences prior to the claiming decision seems to lower the risk of claiming. While this may seem contradictory at first glance, it actually makes sense since those with longer sickness absences have a greater tendency to retire early in particular via the disability pension (e.g. Nivalainen, 2020). The explanation for the positive connection between a longer working career and claiming may be related to accrued pension benefits: those with longer working careers are likely to have large enough accrued pension to have a marked impact on their financial situation, even when only half of the pension can be claimed at most.

This study has many advantages compared to earlier studies. We were able to observe the behaviour of the whole cohort and could link information on the parents' longevity for the majority of the cohort. In addition, we were able to control for a rich variety of individual characteristics related both to life expectancy and retirement in our models. Moreover, two separate years were inspected, which decreases the likelihood that the result is a coincidence. There are also some limitations. The major disadvantage is that, while we could control for sickness absences prior to the claiming decision, we could not observe the health of the individuals in terms of chronical illnesses or serious health conditions (such as heart-related diseases or cancer), which may also affect their expected longevity and their pension claiming decisions. However, this shortcoming can be accepted at least for three reasons. Firstly, parental longevity has a substantial impact on subjective life expectancy and the longevity of their offspring even after controlling for health conditions of the offspring (Pörtner & Wong, 2013; van Solinge & Henkens, 2018). Secondly, it has been shown that the effect of survival expectations on retirement remains significant even after the above-mentioned health factors are extensively controlled for (O'Donnell et al., 2008). Thirdly, those with severe health

conditions are more likely to withdraw from the labour force via the disability pension than claim a partial old-age pension.

To summarise, our study provided evidence adding to the scarce existing empirical research concerning the relationship between expected longevity and the timing of pension claiming. The results show that early claiming is connected with a shorter expected longevity as indicated by parental longevity and hence demonstrate that the expected lifespan is indeed a significant factor that guides individual retirement behaviour. The results relating to other variables are in line with this: known risk factors for shorter longevity, such as being male, having a lower income and a lower wealth, also increase the likelihood of early claiming. At the same time, the results support the view that parental longevity can be used as a landmark for expected longevity in empirical investigations; a measure that is quite easily accessible in register data.

The findings of this study are in line with the predictions of the life-cycle theory: when making pension claiming decisions, individuals with shorter expected longevity behave rationally and – within the existent pension policy framework - maximise their lifetime pension benefits by claiming their pension early. However, what is optimal from an individual's point of view is not necessarily optimal from a pension policy perspective. Individuals' private information about their longevity and active selection on a shorter expected lifespan implies that actuarial neutrality, the key assumption of the pension system design, may not hold on average. This can lead to an unexpected increase in the public costs of the pension system.

A practical implication of the present study is that financial incentives to postpone retirement in pension systems may not work very well, at least not when it comes to individuals with a shorter expected longevity. Then again, if financial incentives mainly

encourage persons with a longer expected lifespan to postpone their retirement, this also signals adverse selection and will strain the financial sustainability of the pension system.

One of the central pension policy goals around the world is to lengthen working lives. When pension claiming and working hours are separate decisions, as in Finland, early claiming does not automatically mean shorter working careers. In fact, statistics show that a majority of early claimers of the partial old-age pension in Finland continue to work as before (Finnish Centre for Pensions, 2020). Hence, early claiming is not necessarily at odds with the policy goal of longer working lives. However, it is yet too early to say anything definite on this matter.

In this article, we could only investigate the effect of the expected longevity on early pension claiming. From both an individual and a pension policy standpoint, the connection between expected longevity and delayed claiming is equally important. Moreover, we do not know how well the actual lifespan of an individual coincides with the expected one. On the other hand, neither do the individuals themselves when making decisions. Nevertheless, to gain deeper knowledge on the accurance of this estimate, attention should be paid to the connection between expected and actual longevity, especially among early claimers. Moreover, to assess the implications of early claiming on working careers, more information on the connection between expected longevity, early claiming and retirement as a means of exiting the labour force is needed. These issues obviously merit further investigation.

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Table 1

Means and Standard Deviations (SD) of Explanatory Variables in 2018 and 2019

Variable	Mean 2018	SD	Mean 2019	SD
Same-sex parent alive	0.30	0.46	0.30	0.46
Age (at death) of same-sex parent (years)	78.64	10.97	78.57	11.09
Female	0.53	0.50	0.53	0.50
Health: Received sickness benefits	0.05	0.21	0.06	0.23
Education				
Basic	0.16	0.37	0.15	0.36
Secondary	0.43	0.50	0.43	0.50
Lower tertiary	0.29	0.45	0.29	0.45
Higher tertiary	0.12	0.32	0.13	0.33
Socio-economic status				
Upper-level employee	0.20	0.40	0.21	0.41
Lower-level employee	0.34	0.47	0.34	0.47
Manual worker	0.27	0.44	0.26	0.44
Other	0.19	0.39	0.19	0.39
Employment sector				
Private sector employee	0.53	0.50	0.54	0.50
Public sector employee	0.31	0.46	0.31	0.46
Self-employed	0.12	0.32	0.12	0.32
Farmer	0.03	0.18	0.03	0.18

Labour market status				
Employed	0.80	0.40	0.83	0.38
Unemployed	0.15	0.36	0.13	0.33
Outside labour force	0.04	0.20	0.05	0.21
With partner	0.71	0.46	0.70	0.46
Log (income)	10.07	1.78	10.11	1.76
Home-owner	0.81	0.39	0.81	0.39
Length of working career (years)	35.12	7.62	35.15	7.54
N	50 818		50 101	

Table 2

Number of Observations (N) and Claiming Rate (%) of the Partial Old-age Pension in 2018 and 2019

Variable	N 2018	Claiming rate of partial old-age pension, 2018	N 2019	Claiming rate of partial old-age pension, 2019
All	50 818	10.0	50 101	11.0
Same-sex parent		***		***
Dead	35 655	10.5	34 858	11.6
Alive	15 163	8.8	15 243	9.8

Gender		***		***
Male	23 933	12.4	23 724	13.8
Female	26 885	7.9	26 377	8.5
Health		ns		*
Not received sickness benefits	48 414	10.0	47 192	11.1
Received sickness benefits	2 404	9.5	2 909	9.6
Education		***		***
Basic	8 071	11.3	7 410	12.6
Secondary	21 927	10.1	21 765	11.4
Lower tertiary	14 724	10.4	14 529	10.7
Higher tertiary	6 096	7.1	6 397	8.5
Socio-economic status		***		***
Upper-level employee	10 262	8.0	10 456	9.5
Lower-level employee	17 312	9.7	17 085	10.5
Manual worker	13 786	11.0	13 271	12.6
Other	9 458	11.4	9 289	11.5
Employment sector		***		***
Private sector employee	27 158	10.6	26 886	12.0
Public sector employee	15 917	7.8	15 494	8.3
Self-employed	6 019	13.7	5 970	14.0
Farmer	1 724	8.4	1 751	10.1
Labour market status		ns		***
Employed	40 762	9.9	41 447	10.8
Unemployed	7 852	10.6	6 339	13.2

Outside labour force	2 204	9.4	2 315	9.5
Family situation		***		***
Living alone	14 986	9.0	15 097	10.0
With partner	35 832	10.5	35 004	11.5
Home ownership		***		*
Home owner	41 312	9.8	40 615	10.9
Other	9 506	11.2	9 486	11.6

Significance level * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 3

Distribution of Continuous Cariables Among Non-Claimants and Claimants of the Partial Old-age Pension in 2018 and 2019

	Not claiming a partial old-age pension, 2018 (2019)				Claiming a partial old-age pension, 2018 (2019)			
	p25	p50	p75	mean	p25	p50	p75	mean
Age (at death) of the same-sex parent (years)	73 (73)	82 (82)	86 (86)	78.8 (78.7)	71 (70)	80 (80)	85 (85)	77.2 (76.9)
Log (income)	10.02 (10.06)	10.41 (10.44)	10.73 (10.76)	10.08 (10.12)	9.92 (9.99)	10.39 (10.42)	10.69 (10.72)	9.94 (10.01)

Length of working career (years)	32.7 (32.8)	37.1 (37.1)	40.0 (39.8)	34.9 (34.9)	34.4 (34.5)	37.8 (37.9)	40.5 (40.7)	36.6 (36.8)

Table 4

Determinants of Claiming a Partial Old-age Pension in 2018 and 2019, Odds-Ratios (OR) and 95% Confidence Intervals (CI) of Logistic Regression Models

Variable	OR 2018	(CI)	OR 2019	(CI)
BASELINE MODEL: Non-adjusted				
Same-sex parent				
Dead	1.00		1.00	
Alive	0.92*	(0.85-0.99)	0.93*	(0.87-1.00)
Age (at death) of same-sex parent/10	0.90***	(0.87-0.92)	0.90***	(0.87-0.92)
SPECIFICATION 2: Gender added				
Same-sex parent				
Dead	1.00		1.00	
Alive	1.00	(0.93-1.08)	1.03	(0.96-1.11)
Age (at death) of same-sex parent/10	0.92***	(0.90-0.95)	0.92***	(0.90-0.95)
Gender				
Male	1.00		1.00	
Female	0.62***	(0.59-0.66)	0.60***	(0.56-0.64)
SPECIFICATION 3: Fully adjusted model				
Same-sex parent				
Dead	1.00		1.00	
Alive	0.98	(0.91-1.06)	1.03	(0.96-1.10)

Age (at death) of same-sex parent/10	0.93***	(0.91-0.96)	0.93***	(0.90-0.95)
Gender				
Male	1.00		1.00	
Female	0.67***	(0.63-0.72)	0.66***	(0.62-0.71)
Health				
Not received sickness benefits	1.00		1.00	
Received sickness benefits	0.91	(0.79-1.05)	0.82**	(0.72-0.93)
Education				
Basic	1.00		1.00	
Secondary	1.02	(0.94-1.11)	1.02	(0.94-1.11)
Lower tertiary	1.21***	(1.10-1.34)	1.08	(0.98-1.19)
Higher tertiary	0.97	(0.84-1.12)	0.99	(0.86-1.13)
Socio-economic status				
Upper-level employee	1.00		1.00	
Lower-level employee	1.23***	(1.11-1.36)	1.12*	(1.02-1.23)
Manual worker	1.17**	(1.05-1.31)	1.04	(0.94-1.16)
Other	1.07	(0.92-1.25)	0.83*	(0.71-0.96)
Employment sector				
Private sector employee	1.00		1.00	
Public sector employee	0.87***	(0.81-0.94)	0.82***	(0.76-0.89)
Self-employed	1.33***	(1.16-1.53)	1.39***	(1.21-1.58)
Farmer	0.70***	(0.58-0.86)	0.83*	(0.69-0.99)
Labour market status				
Employed	1.00		1.00	

Unemployed	1.25***	(1.15-1.36)	1.58***	(1.45-1.73)
Outside labour force	1.04	(0.85-1.26)	1.12	(0.93-1.35)
Family situation				
Living alone	1.00		1.00	
With partner	1.18***	(1.10-1.27)	1.13***	(1.06-1.21)
Log (income)	0.92***	(0.90-0.94)	0.91***	(0.90-0.93)
Home ownership				
Home owner	0.72***	(0.67-0.78)	0.79***	(0.73-0.85)
Other	1.00		1.00	
Length of working career	1.05***	(1.04-1.05)	1.05***	(1.05-1.06)
N	50 818		50 101	
Baseline Model: χ^2 (2)	95.30***		99.66***	
Full Model: χ^2 (19)	888.87***		1057.82***	

Significance level * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$