Expected retirement age and pension benefits in Austria: evidence from survey data

In this paper we present evidence on Austrians' expectations about their retirement age and the size of their pension benefits. We find that young people expect to retire at an older age compared to the actual age. The answers indicate that this increase in the expected retirement age might be sufficient to counterbalance the forecasted rise in life expectancy over the next decades. Furthermore, the increase is also approximately in line with the assumptions that underlie official forecasts about the development of pension expenditures. People in Austria also expect to receive less pension benefits, i.e. they expect net replacement rates to decrease, although in this case our results are less conclusive. In general, there exists a considerable degree of uncertainty, in particular among younger people. Furthermore, we find that the main structure of the new pension account system does not seem to be well understood. This suggests that the rules of the new system could be better communicated (e.g. via individualized pension account information).

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The average Austrian worker retires before reaching the age of 60. In international comparisons this stands out as one of the lowest retirement ages and it is regarded as a major challenge for the Austrian pension system. In recognition of this fact, the pension reform of 2003/04 included a number of measures that directly aimed at increasing the effective retirement age. First, various pathways into early retirement were restricted or closed, e.g. early retirement on the grounds of long insurance records (referred to as "Hacklerregelung" in Austria). Second, the statutory retirement age for women was scheduled to increase between 2024 and 2034 from the age of 60 to 65 (in half-year steps). Third and foremost, the reforms established a new pension account system that completely reshaped the old defined benefit model. The new system is based on transparent accounts, lifelong assessment periods, higher deductions for early retirement and higher supplements for later retirement and a higher degree of actuarial fairness (see section 2).

The importance of the retirement age issue is also reflected in the current political agenda. The work program of the current federal government includes a plan to increase the effective retirement age from 58.4 (2012) to 60.1 years (2018). The success of this program is assessed by semi-annual monitoring and until February 29, 2016, the government will decide whether it has to take further measures in order to reach the goal of increasing the effective retirement age.

Despite the economic importance and the political prominence of this issue, it is at the moment difficult to evaluate whether the legislated reform measures will be sufficient to increase the effective retirement age. The main reason for this difficulty lies in the fact that many of the reform steps will yield their full benefits only in the future. This is not only true for the increase in the female statutory retirement age but also for the introduction of the pension account system that affects only the cohorts born after 1955.

Refereed by:
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There exist three possible strategies to assess the likely impact of the reform measures on future retirement behavior: the use of structural models, the analysis of the experience of other countries which have implemented similar programs and the examination of survey evidence. Each of these approaches has strengths and weaknesses and they should be regarded as complementary methods. In this article we take the latter route, analyzing the results of a survey that was conducted at the beginning of 2014. Survey evidence has been regularly used for other countries in order to elicit information about people's expectations, plans and preferences. To the best of our knowledge, this is the first study that applies this approach to the case of Austria.[2] The survey includes questions about respondents' expectations concerning their retirement age and their pension benefits and also about their knowledge of the pension system. The latter element is interesting since during 2013 (i.e. right before the survey was conducted) many insured persons from the cohorts 1958 to 1990 had received a letter from the pension insurance agency (Pensionsversicherungsanstalt – PVA) in which the new pension account system was described and individuals were asked to provide information about contributory and noncontributory periods (for education, childcare, employment abroad etc.). We use this "treatment" (and other questions about individuals' state of knowledge) in order to investigate whether people who are better informed also have different perceptions of the system and different expectations.

We are interested in four main questions. First, and most importantly, at what age do respondents expect to retire, and do younger people expect to retire at an older age? Second, how high do people think their future pensions will be? Third, how high is people's uncertainty about these issues? Fourth, are they aware of the new pension account system and do they understand the main rules?

Our findings can be summarized as follows. First, we find that younger people expect to retire at later ages. In particular, the expected retirement age increases from 62 (age group 50–59) to 64 (age group 20–29). A similar increase can be detected using alternative measures of the expected retirement age (e.g. respondent's partner's or the younger generation's retirement age). This increase would suffice to counterbalance the forecasted increase in life expectancy over the next decades. Furthermore, back-of-the-envelope calculations suggest that the subjective retirement expectations are in line with (and maybe even somewhat higher than) the assumptions concerning the increase of the effective retirement age that underlie official forecasts about future pension expenditures. Second, younger respondents expect lower (net) replacement rates than older or already retired respondents (around 70% for

[2] One of the first articles using subjective expectations about pension benefits and retirement is Bernheim (1989). Other studies (using U.S. data) include Chan and Stevens (2004), Benítez-Silva and Dwyer (2005) and Dominitz and Manski (2006). The related literature has also used data from Germany (Coppola and Wilke, 2014), the Netherlands (de Grip et al., 2013) and Italy (Brugiavini, 1999; Botazzi et al., 2006).

the age group 50–59 and 67% for the 20–29 cohorts). Third, the answers indicate that respondents show a considerable degree of subjective uncertainty about both their expected retirement age and their replacement rates. This uncertainty is particularly high among the younger generations. Fourth, better information does not seem to have a large effect on expected behavior and perceptions (with the exception of the expected retirement age). Fifth, people's knowledge about the main features and the rules of the new pension account system is limited. We present evidence that people do not fully grasp the importance of the length of the contribution period for the pension level and that they therefore underestimate the size of deductions for early retirement (an average of 3.5% instead of approximately 7%). We conclude by stressing the importance of clear and easily comprehensible communication about the new system in order to reduce uncertainty, increase acceptance and facilitate the desired behavioral responses.

This paper is structured as follows: Section 1 briefly describes the new Austrian pension account system. In section 2 and 3 we introduce the survey we used and analyze respondents' expectations about retirement age and net replacement rates. Section 4 studies the extent of uncertainty, section 5 the influence of better information on people's expectations and section 6 concludes.

1 The new Austrian pension account system

The pension reform of 2003–04 has reorganized the Austrian pay-as-you-go (PAYG) pension system into a system that is based on individual accounts. A detailed description of the main features of the system can be found in

Knell (2013), OECD (2013) and BMF (2014). In this section we are going to present the main elements of the new system that are important to understand and interpret the answers to the survey.

The centerpiece of the harmonized pension system is an individual defined benefit pension account specified in the General Pensions Act (Allgemeines Pensionsgesetz, APG). The target benefit level is expressed by the formula "45–65–80": after 45 years of insurance and retirement at the age of 65, the system provides an initial pension that corresponds to 80% of average lifetime labor income. This target is implemented by means of an accrual rate ("Kontoprozentsatz"). Every year 1.78% of total earnings (up to a ceiling) are credited to the account while past credits are revalued by the growth rate of the average contribution basis which gives 80% (=45x1.78%) after 45 years of contributions (or – to be precise – insurance). For early or late retirement (which in any case requires a minimum number of years of insurance) within an age corridor between 62 and 68 there are annual deductions and supplements: –5.1% for each year of early retirement and +4.2% for late retirement. This can be expressed in the formula for the first pension payment received by individual i:

$$P_i = \kappa \overline{Y} D_i \left(1 - \lambda_i \left(65 - R_i\right)\right), \qquad (1)$$

where $\kappa = 0.0178$ is the accrual rate, $\overline{Y}$ is the average lifetime pensionable labor income, D_i is the number of contribution (or insurance) years, R_i is the retirement age and λ_i is the annual deduction (supplement) for early (late) retirement ($\lambda_i = 0.051$ for $R_i < 65$ and $\lambda_i = 0.042$ for R_i). The gross replacement rate (to which the figure 80% of the formula 45–65–80 refers) is thus given by the

ratio of the first pension P_i to lifetime income $\bar{Y}$.[3]

Existing pensions are (typically) adjusted for the rate of inflation. In order to speed up the transition period from the old to the new pension account system it was decided in 2012 that all pension entitlements acquired in the old system will be transformed into an "initial credit" at the beginning of 2014.

2 Expectations about retirement age

In order to gain information about Austrians' knowledge, expectations and preferences with regard to the pension system we conducted a survey among 2,000 individuals in early 2014. Details of the survey are described in box 1.

2.1 Expectations about own retirement age

All respondents who indicated to be in the labor force were asked the following question: "At what age do you realistically expect to enter into retirement?" The answers to this question result in an average expected retirement age of 63.1 for all individuals aged between 20 and 59 (see table A1 in the annex). This is considerably higher than the current effective retirement age of 59 (including invalidity pensions) or 61 (old-age pensions only).

What is more interesting than the plain average, however, is to see whether we can expect an actual increase in the retirement age over the next decades. In chart 1 we plot the relationship between respondents' bio-

logical age (at the time of the survey in 2014) and their expected retirement age. The graph shows a clear downward trend. Younger cohorts expect to retire later than older working cohorts. The slope of the fitted line is -0.075, which implies that an age difference of 13 years between two birth cohorts is associated with a difference in retirement expectations of one year.[4]

In order to control for other influences on retirement expectations we used a regression analysis. In particular, we regressed the answer to the question about the expected retirement age on a number of standard sociodemographic characteristics. In the annex we present the full table with the results of all variables while in table 1 we only report the coefficients for a subset of explanatory variables. Looking at column (1) it turns out that the negative correlation between age and expected retirement that is visible in chart 1 remains highly significant even if one

Chart 1

Retirement expectations by age

Expected retirement age

Source: Own calculations based on an OeNB survey (2014).

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[3] *This is important to keep in mind to interpret respondents' answers to the question about a replacement rate that differs from this concept in two dimensions. First, it was related to the expected first pension relative to current labor income (instead of average lifetime income) and second, we asked about the net instead of the gross replacement rate. In the case of increasing wage profiles one would thus assume that — ceteris paribus — the expected net replacement rate is decreasing with individual age.*

[4] *If we look — for the sake of comparison — only at the retirees in our sample we get a mean actual retirement age of 57.2 which is about in line with historical data. However, this result cannot be directly compared to the data on past average retirement ages due to a survivorship bias.*

Survey on retirement expectations

The survey on retirement expectations used in this study was conducted via personal interviews of approximately 2,000 respondents older than 15 years between February and March 2014. Respondents were asked a number of questions related to the pension system and their retirement expectations, including questions concerning their knowledge about the system, their labor market history, their retirement expectations, their assessment of the system and their political preferences. In addition we also asked about the likely retirement behavior of respondents' partners, about their subjective life expectancy and about their subjective health status.

Due to the design of the survey the answers include information both about working and retired individuals. In total, the survey covers about 1,250 respondents between the ages of 20 and 59 who indicated to be in the labor force in 2014; 1,100 of this group answered our central question about their expected retirement age. On the other hand, the survey included 528 retired respondents, almost all of which (509) provided the age at which they entered into retirement. In this paper we use the answers of the retirees only for the results shown in column (3) of table 2 and for a couple of comparisons between the survey data and the official data. Summary statistics of our main variables can be found in table A1 in the annex.

controls for a large number of covariates. The size of the coefficient is −0.065, which is slightly lower than in the univariate relation illustrated in chart 1.[5] Although the effect is not huge, it at least indicates that the retirement age is likely to increase over the next decades. In order to analyze the causes for this expected increase and to determine the role of pension reforms and the accompanying public debate one would have to compare the expected retirement ages before and after the start of the pension reform process. The lack of available panel data, however, prevents us from pursuing this line of investigation and we can only speculate about the reasons that underlie the age pattern. First, it is likely to be related to the transition from the old to the new pension system. In particular, for older cohorts the expected pension benefits will be determined to a higher degree by the old pension rules (captured by the initial credit). Under the old system, which was typically more generous than the new system, an

aspired replacement rate could be achieved with a lower retirement age. Second, younger cohorts might expect further pension reforms in the future that will require them to work even longer in order to achieve the aspired replacement rates. Third, the public debate about the pension reform might have a particularly strong effect on younger cohorts that have become more pessimistic about the level of their expected public pension which is reflected in their higher expected retirement ages.

One way to put the expected increase in the retirement age into perspective is to compare it to the forecasted increase in life expectancy. Using the data provided in BMF (2014), life expectancy at the age of 65 is expected to increase until 2060 by about 0.1 per year. Approximating the current relation of pension years to work years as 1/3 (i.e. assuming that the average person works from the age of 20 to the age of 60 and dies at the age of 80), the average retirement age has to

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[5] *The use of age^2 does not lead to significant results, which confirms the use of a linear model.*

Table 1

Expected retirement age

	(1)	(2)	(3)	(4)
	Benchmark	No income	Male	Female
Dependent variable	*Exp. ret. age*	*Exp. ret. age*	*Exp. ret. age*	*Exp. ret. age*
Age	−0.065***	−0.061***	−0.068***	−0.069***
Male	2.25***	2.74***	−	−
Unemployed	1.57**	0.20	1.71*	1.57
Employed in public sector	−0.49	−0.47*	−1.05**	0.32
Bad subjective health	−1.71***	−0.82**	−2.40***	−0.90
University education	0.38	1.14**	0.26	0.53
Income	2.03***	−	2.79***	1.97
Income^2	−0.25**	−	−0.35**	−0.52
Constant	63.10***	64.55***	64.50***	63.72***
Adjusted R^2	0.26	0.22	0.16	0.12
N	770	1,095	373	397

Source: Authors' calculations based on an OeNB survey (2014).

Note: The table reports OLS estimates using population weights. ***, **, * denote significance at the 0.01, 0.05 and 0.10 level, respectively. The dependent variable is expected retirement age. Only a subset of variables is shown. The full set of variables is reported in table A2 in the annex. For reasons of readability the income variable has been divided by 1,000.

increase by 0.1x2/3=0.067 per year in order to hold this ratio constant at 1/3. This is almost exactly the size of the increase suggested by our regression analysis based on individuals' expectations.

Looking at the other variables in column (1), we see that men expect to retire more than two years later than female respondents. We will come back to this issue in section 2.4. On the other hand, unemployed people expect to retire later while people that assess their health as mediocre or bad expect to retire almost two years earlier. The impact of income is also strong. The numbers in column (1) imply that a move from the first to the ninth decile increases the retirement expectation by two years. This may have to do with different preferences, with different employment opportunities and also with the fact that due to the income ceiling on pension contributions, high-income earners will ceteris paribus achieve lower replacement rates, which they

might try to compensate for by a longer working life. On the other hand, many people decline to give information about their income and the inclusion of this variable implies a loss of observations. In column (2) we therefore present the results of a regression that leaves out this variable. The results remain qualitatively unchanged, although there are some changes in the size of the effects. Furthermore, now the completion of a university degree works as a substitute for missing income information and indicates an increase in retirement expectations.

It is interesting to compare our results to the findings for other countries, both concerning the plain average and the existence of a possible time trend. As far as the first dimension is concerned, we would have to look at comparable surveys from a similar point in time in order to make meaningful comparisons. Since these are not easily available we will leave this issue aside.[6]

[6] In table 4 we report, however, that the average expected retirement age for an Italian survey conducted in 2007 is 64.3 which is higher than the Austrian value (compare. also the findings in Botazzi et al., 2006).

As far as the time trend is concerned there exist a number of studies that have looked into the effect of an increase in the statutory retirement age (SRA) or the early retirement age on retirement expectations. Coppola und Wilke (2014) show for Germany that the increase in the SRA from 65 to 67 (adopted in 2007) has increased retirement expectations for men by almost two years (but a high degree of individual heterogeneity can be observed). De Grip et al. (2013) conducted a similar analysis of a Dutch pension reform implemented in 2010 that increased the SRA in two steps from 65 to 67. This increased the expected retirement age of the affected cohorts by 3.6 months and 10.8 months, respectively. Botazzi et al. (2006) have found that as a result of the Italian pension reform package adopted in the 1990s the expected retirement age increased by two years for men and by three years for women.[7]

The Austrian pension reform also included an increase in the SRA for women. We will discuss this topic below and show that there does not seem to be a measurable effect on expectations. On the other hand, we want to note that neither in Coppola und Wilke (2014) nor in de Grip et al. (2013) the authors found a significant effect of the age on the expected retirement age besides the impact of the increase in the SRA. In this respect the reaction in the case of Austria presents an interesting and slightly unusual pattern, where the increase in the expected retirement age seems to be a prolonged, continuous and across-the-board process.

2.2 Expected development of the average retirement age from 2015 to 2055

From a policy perspective it is interesting to translate the age pattern of individual expected retirement ages into a forecast of the average retirement age for the upcoming decades. This pattern can then be compared to the official forecasts that underline the studies and recommendations of the Austrian Pension Commission (2014) or the Ageing Report of the European Commission (2015).

At first sight this seems like a straightforward thing to do. In particular, the expected year of retirement RY_i for an individual i is given by the formula $RY_i = 2014 + R_i - Age_i$, where R_i is his or her expected retirement age. A person aged 44 in 2014 who indicates to retire at the age of 60 will thus expect to retire in the year 2030 while the same is also true for an individual aged 49 that expects to retire at the age of 65. One can calculate RY_i for each respondent in our survey and then take the average of R_i for each year in order to come up with a sequence of annual expected average retirement ages. We show the resulting pattern in chart 2 (blue line), where we contrast it with the official assumptions concerning the effective retirement age that have been published by the Austrian Pension Commission (2014, table 28b).

We observe that the survey data imply a faster increase in the effective average retirement age than assumed in the official report, where it is expected to increase only from 59.2 (in 2015) to 61.4 (in 2050).

We want to emphasize, however, that our calculations should only be regarded as rough estimates that are sub-

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[7] These studies about the effect of changes in the SRA on retirement expectations can be contrasted to articles that look at the effect of such policies on actual retirement behavior, e.g. Mastrobuoni (2009).

Chart 2

Effective retirement age

Averege effective retirement age
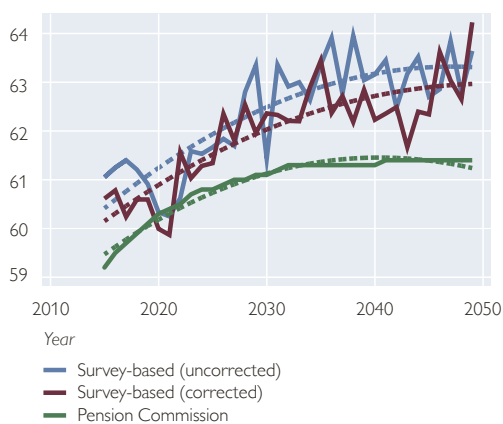
Source: Own calculations based on Pension Commission (2014) and an
OeNB survey (2014).

Note: The dashed lines shows polynominal fits.

ject to a number of serious caveats. First, our calculations are based only on a very limited number of observations (between 25 to 30 for each year). In order to reduce the degree of uncertainty about the estimates one would have to considerably increase the size of the survey. Second, we implicitly assume that the size of each cohort is identical while in reality there may be changes over time that will have an impact on average retirement ages. For the Austrian situation, however, this may not be overly important since the official forecasts assume an almost constant population in the age group 15—64 (see Pension Commission, 2014, table 11). Third, the survey answers only measure individuals' retirement expectations and it is not self-evident how to interpret these answers. In particular, we do not know whether respondents expect the current pension system to remain unchanged or whether they expect further pension reforms, which may contribute to the age pattern of the

results (while such expectations of future policy changes are absent from the official forecasts). Furthermore, it is unclear whether individuals' stated expectations refer to their first-best plans or whether they also account for the possibility that they might be forced to deviate from their preferred choices; either because they have to leave the labor market early (e.g. for health reasons) or because they decide to prolong their working career (e.g. in order to counteract bad income shocks).[8]

There are a number of responses to these potential objections. First, the existing literature provides solid evidence that subjective expectations about various variables are good predictors of actual behavior (Dominitz, 1998; Hurd and McGarry, 2002). This is also true for subjective expectations about the retirement age (Chan and Stevens, 2004) even though it has been argued that in this case the answers reflect modes rather than means (Bernheim, 1989). Second, our survey also asked respondents whether they believe that "in the next few years there will be further drastic pension reforms." If we split the sample according to the answers to this question we get an even larger age coefficient for the subsample that does not expect further reforms (−0.13 vs. −0.06). Third, we also try to account for the possibility that individuals neglect the occurrence of "bad life events" (e.g. chronic health problems). Twelve respondents in our survey indicate, e.g., that they expect to retire at the age of 75 and two expect to do so at the age of 80. Even if we took their stated intentions at face value we would have to consider the nonnegligible probability that they will not be able to follow through with their plans.

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[8] *In some countries there also exist differences between the time of permanent labor force exit and the collection of pension benefits. In Austria, however, these two events typically coincide.*

We have made a simple correction in order to account for this possibility.[9] The resulting time series for this corrected average retirement age is also shown in chart 2 (red line).

Although the correction reduces the estimated average effective retirement age by about half a year, it still suggests that it might increase to 63 by the year 2050. As said above, this estimation should be taken with a grain of salt since it is based on many strong assumptions. On the other hand, the assumptions of the Pension Commission might be overly cautious, in particular since they seem not to take fully into account the effects of the pension reform measures.[10]

2.3 Expectations about other people's retirement ages

In this section we want to investigate whether our findings about the increase in expected retirement are robust. We do so by looking at additional pieces of information. On the one hand, the Household Finance and Consumption Survey (HFCS) also included a question about the expected retirement age in Austria. If we use these data from 2010 we get an age coefficient of −0.089, which is broadly in line with our own result. On the other hand, our survey also included two questions asking respondents for their estimation of other people's retirement age: their own partner's and (in the case of retirees) that of people that are 30 years younger than they are themselves. In each case, about 500 individuals answered the question. The (unconditional) means

for the expected retirement age of 20–59 year olds are 62.7 years (for partners) and 65.9 years (for people who are 30 years younger) while the comparable number for respondents' own expected retirement age is 63.1. Respondents' expectations for themselves and their partners are therefore pretty much aligned. On the other hand, retired respondents expect a retirement age for the younger cohorts that is not only much higher (about 6 years) than their own retirement age but also higher than the retirement age that the younger cohorts expect for themselves.

We have performed a regression analysis with age, gender and regional dummies as the only independent variables (for the main reason that we do not have any other information about partners or the hypothetical juniors).

Table 2

Comparison of different retirement expectations

Dependent variable	(1) Own Exp. ret. age	(2) Partner Exp. ret. age	(3) 30 years younger Exp. ret. age
Age	−0.070***	−0.030*	−0.063***
Age difference	–	−0.015	–
Male	2.84***	−3.13***	0.45
Constant	64.68***	65.95***	69.89***
Adjusted R^2	0.19	0.24	0.05
N	1,104	548	467

Source: Authors' calculations based on an OeNB survey (2014).

Note: The table reports OLS estimates using population weights.***, **, * denote significance at the 0.01, 0.05 and 0.10 level, respectively. The dependent variable is the respondent's own expected retirement age (col. (1)), the retirement age of the respondent's partner (col. (2)) and the retirement age of a hypothetical person 30 years younger than the respondent (col. (3)). The regressions also contain regional dummies. "Age difference" is defined as the difference between the respondent's and the respondent's partner's age. The negative sign of "Male" in col. (2) reflects the fact that the partner is of the opposite sex.

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[9] The correction involves the following steps: We assume that all labor market exits before the age of 50 are involuntary and due to "bad health shocks." These exogenous exit rates are extrapolated to the age of 80 by assuming a proportional relation to mortality rates. We then calculate for each individual a "corrected retirement expectation" as a probability-weighted average between their planned retirement age and the retirement age that would be expected if they had to leave earlier than at the planned date. Finally, we repeat the same steps that we conducted for the uncorrected measure in order to derive the curve shown in chart 2.

[10] Interestingly, in the projection of the BMF (2014) that was prepared for the European Commission's Ageing Report 2015, the assumptions show a more pronounced increase in the effective retirement age until 2050 (see table 4 in BMF, 2014): up to 64.2 for men and 63.2 for women (although starting from higher ages in 2014).

As can be seen in table 2, the impact of age on expected retirement is consistently negative in all three specifications, although it is smaller in size for the retirement behavior of partners. In this case we have also added the difference between respondents' own age and their partners' age as an explanatory variable. The effect of this variable, however, is not significant. Interestingly, when considering the retirement age of juniors, gender does not seem to play a role.

2.4 Gender differences

As stated above, the statutory retirement age in Austria is currently 60 for women and 65 for men. The gender gap in effective retirement ages, however, is only around two and a half years. In the years before the survey (2013/14), e.g., the average retirement age for old-age pensions had been 63 for men and 59.5 for women while the corresponding figures for the overall retirement age (including invalidity pensions) had been 60.2 and 58, respectively. The size of this gender gap in the effective retirement age is rather large by international comparisons.

Looking at table 1 it stands out that this gender gap is still present in the expected retirement age, and even its size seems almost unchanged (between 2.2 and 2.8 years). This is surprising since it means that even the increase in the statutory retirement age for women to be phased in between 2024 and 2034 (i.e. for women that were between 46 and 50 years old at the time of our survey) did not increase the expected retirement age. This is also visible in the age categories. In particular, the average expected retirement age for the youngest age group (20–29) is 65.3 for men and 62.8 for women, which gives again a gap of 2.5 years.[11]

We have also run the benchmark regression separately for men and women. As one can see in columns (3) and (4) of table 1, there are some differences concerning the explanatory variables. In particular, income level and health status are not statistically significant in the regressions that only include female respondents.

The persistent gender gap in retirement age of around 2.5 years in Austria is much larger than in comparable countries, both concerning actual and expected retirement behavior. As far as the latter is concerned, the gender gap is estimated to be around 0.6 years in Germany (Coppola und Wilke, 2014), around 0.33 in the Netherlands (de Grip et al., 2013) and around 1 in Italy (Baldini et al., 2015). Possible explanations for the gap are a lack of information, strong persistence in behavior, the influence of social norms and the presence of spousal effects. The expected persistence of the gap also suggests that the public debate about the pension reforms may have caused young people to be particularly pessimistic about the adequacy of the pension system without them being aware about all the details of the new system. These issues are an interesting topic for further research.

3 Expectations about the replacement rate

Our survey also asked respondents to state their expectations about the size of pension benefits. In particular, we asked them about their assessment of the net replacement rate (i.e. the size of their net pension benefits compared to

[11] *The official labor market projections that underline the data published in the Ageing Report of the European Commission assume a faster closing of the gap, with a forecast value of only 1 for the years from 2040 to 2060 (see table 4 in BMF, 2014).*

their current net income). We did not pose this question directly but rather asked respondents a series of three questions that allowed us to also estimate the degree of people's uncertainty about their expected net replacement rate. Details about the procedure can be found in box 2. Furthermore, as already mentioned in section 1, the replacement rate concept of the survey differs from the target rate of 80% from the basic formula 45–65–80, which refers to the gross replacement rate and the size of the first pension payment relative to the lifetime *average* labor income (instead of current income).

The average expected net replacement rate for all respondents between the age of 20 and 59 is 68% (see table 3). There is a rather high degree of variation between individuals with a standard deviation (SD) of 12.6% and 10% of respondents expect the value to be below 52%, while another 10% expect it to be above 82%. Interestingly, the actual average net replacement rate of the retirees in our survey is almost identical to these expectations, amounting to a mean of 68.5% and a SD of 12.2%.

Chart 3 plots the expected net replacement rate against the age of respondents. There exists a positive relation indicating that younger cohorts expect a lower net replacement rate. The relation, however, does not seem to be very strong and somewhat erratic. To look more closely at the determinants of the expected net replacement rate we have again performed a regression analysis. As shown in table 3 we find that men expect a net replacement

rate that is significantly lower (between 2%–3%) than that of women. The same is true for unemployed persons although the effect is only marginally significant. Finally, in line with chart 3, we find that younger people expect a lower net replacement rate. The impact is, however, rather moderate and for each 10 years of age difference the expected net replacement rate is between 1% and 1.5% lower.[12] For other countries such an age pattern was not found for expected pension benefits (Dominitz and Manski, 2006).

In column (2) of table 3 we again leave out the income variable in order to increase the number of available observations. The results stay qualitatively unchanged while the coefficient on age increases. In column (3) we add the expected retirement age $\overline{R}$ (in case a respondent has provided answers concerning R_{min} and R_{max}) that has been used as the reference age in the question on

Table 3

Expected net replacement rate

	(1)	(2)	(3)
	Benchmark	No income	Exp. ret. age
Dependent variable	*Exp. NRR.*	*Exp. NRR.*	*Exp. NRR.*
Age	0.090*	0.157***	0.102*
Male	–3.14***	–2.11**	–1.43
Unemployed	–3.90	–4.19*	–3.83
Income	–0.24		–0.81
Income^2	0.33		0.64
Expected ret. age			–0.41*
Constant	63.81***	62.21***	89.67***
Adjusted R^2	0.08	0.07	0.10
N	667	850	535

Source: Authors' calculations based on an OeNB survey (2014).

Note: The table reports OLS estimates using population weights. ***, **, * denote significance at the 0.01, 0.05 and 0.10 level, respectively. The dependent variable is the expected net replacement rate. Only a subset of variables is shown here. The full set of variables is reported in table A3 in the annex.

[12] *The coefficient in table 3 is, however, likely to underestimate the true cohort effect. The reason is that we ask respondents to compare the expected net pension to their current net income. For persons with an increasing wage profile (as is typical for Austria, in particular for white-collar workers), we would expect a negative coefficient on age even if there were no additional cohort effects.*

expected replacement rates (see box 2). For an exogenously given retirement age one would expect a positive coefficient since in the Austrian system a higher retirement age is associated with a higher replacement rate. The retirement age used in this question is, however, not an exogenous variable but rather the expected individual value. The negative sign could thus indicate that individuals who expect a lower net replacement rate also expect to retire later in order to increase their old-age pension income.

As in section 2 we could again look at the net replacement rate expectations for respondents' partners and people 30 years younger than the respondents. The average figures are 68% (for respondents' own pension income), 68.3% (for their partner's) and 58.7% (for younger people). Working respondents thus expect their partners' replacement rate to be almost identical to their own while retirees expect the younger cohorts to have considerably lower rates (their own average is also around 68%). In order to test for a time trend one can look again at univariate regressions. The coefficients on age are 0.16 for respondents' own and 0.19 for the partner measure while the one for younger people is not statistically significant.

Chart 3

Net replacement rate expectations by age

Expected net replacement rate

Source: Authors' calculations based on an OeNB survey (2014).

Overall, people seem to find it hard to make accurate predictions about their pension benefits.

4 Uncertainty

There are many reasons why individuals may feel uncertain about their future retirement behavior and pension benefits, e.g. labor income risk, employment risk, uncertainty about their family and health status and about the future of the pension system (see Dominitz and Manski, 2006). Most of the sources of uncertainty are beyond the scope of pension policy. A pension system can, however, try to reduce the extent of political uncertainty by establishing a set of transparent and comprehensible rules, by communicating these rules and the inherent incentives in an effective manner and by safeguarding sustainability in order to reduce the risk of further changes and reforms.

It is thus interesting to also look at the extent of subjective uncertainty about one's own expected retirement behavior and expected pension benefits and also to relate it to socio-economic characteristics. This analysis is also important from an economic point of view since uncertainty can have an effect on precautionary savings and other crucial decisions concerning portfolio allocation, education and labor supply.

Our survey included a series of questions which allow us to infer the degree of uncertainty that respondents have about their answers concerning their expected retirement age and replacement rates (see box 2 on the details). We measure the individual degree of uncertainty by using the standard deviation and the coefficient of variation (the standard deviation divided by the mean, C.V.). In table 4 we present the summary statistics for this

Box 2
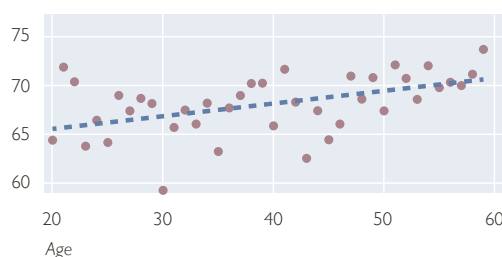
Eliciting uncertainty from the survey

We included two questions in our survey in order to elicit information about respondents' expected retirement age. On the one hand we directly asked: "At what age do you realistically expect to enter into retirement?" On the other hand, we also asked a series of questions that allowed us to gauge the extent of uncertainty surrounding individual expectations. In particular, we used a procedure that follows Dominitz and Manski (2006) and Guiso et al. (2013). We asked respondents about the earliest age (R_{min}) and the latest age (R_{max}) at which they could imagine to leave the labor force. In a further step, we asked them to provide a probability that the retirement age will be higher than the midpoint of this span, i.e.

$$Prob(R \geq \frac{R_{min} + R_{max}}{2} \equiv \overline{R}) = p.$$ *Making an assumption about the subjective distribution*

in the interval between R_{min} and R_{max} allows us to estimate subjective moments like the mean, the standard deviation or the coefficient of variation. Details of the procedure can be found in Dominitz and Manski (2006) and Guiso et al. (2013). In this article we show results that are based on the assumption of a triangular subjective distribution.

In a similar manner we also asked respondents a three-part question about their expectations about the future replacement rate that also referred back to the answer about their expected retirement age $\overline{R}$. In particular, the question concerning the minimum value was: "Imagine you retire at the age of $\overline{R}$ [if the question has not been answered then 60]. Think only about public pension benefits (i.e. disregard occupational or private pension insurance). What is the minimum percentage of your current net income that you expect your monthly net pension to be?"

A critical issue of these probabilistic questions is that they are complicated and lead to rather high nonresponse rates and shares of incorrect (inconsistent) answers (see Dominitz and Manski, 2006). In our survey the nonresponse rate on the retirement questions is 18% and the one on the replacement rate questions almost 30%.

exercise, comparing our own data with the results of a similar study conducted by Guiso et al. (2013) for an Italian sample.

The results show that expectations about the replacement rate vary considerably between individuals. The standard deviation for Austria is lower (12.6) than the one for Italy (19.5), which indicates that Austrians have more homogenous expectations about their replacement rate. At the same time, the subjective uncertainty about

the expected replacement rate is higher in Austria (4.64) than in Italy (3.11).[13]

The results for retirement age are qualitatively similar, showing less interpersonal dispersion in Austria but at the same time a higher degree of subjective uncertainty.[14] Retirement age uncertainty, however, is lower than uncertainty about the replacement rate (a C.V. of 1.75 vs. 4.64).

The degree of subjective uncertainty is not the same for all respon-

[13] *We want to note, however, that the figures are not directly comparable. First, the question in the Italian survey was "At the time of retirement, what is the minimum fraction of labor income that you expect to receive?" This question is less specific than our own questions and one could assume that respondents will refer to the gross replacement rate and that they will think of the fraction of the first pension as compared to the last labor income rather than to the current one. Furthermore, our question used a reference retirement age, which was not the case in the Italian survey.*

[14] *The figures in table 3 refer to the probabilistic question about the retirement age, in which we use a specific assumption about the subjective distribution to derive the subjective moments. Both the mean and the median are lower than the corresponding values (63) for the direct question of the expected retirement age that we have used in section 2. The standard deviation, however, is comparable (3.7 vs. 3.6, respectively).*

dents but varies with individual characteristics like age. Chart 4 illustrates that the degree of uncertainty is considerably higher among younger people than for those who are close to retirement: 2.3% vs. 0.8% for the retirement age and 5.5% vs. 3.2% for the replacement rate. Regression analyses confirm this pattern. The negative relation makes sense since young people face higher risks concerning their labor incomes and employment as well as the political risk of a change in the pension system. In addition, older people may be better informed about their pension benefits, which also reduces their subjective uncertainty. Finally, younger people may also have less faith in the sustainability of the entire pension system.

We can look into the latter issue by analyzing agreement with the following statements, which was part of the survey: "Young people can only expect a very small pension from the public pension system" while the second read: "There will be drastic pension reforms in the future." The percentage of respondents that agreed with these statements was very similar for both and astonishingly high: 43%–44% expressed

Table 4

Summary statistics of subjective replacement rate and retirement age distributions in Austria and Italy

	Austria			Italy		
	Mean	Median	SD	Mean	Median	SD
Replacement rate						
Mean	68.03	69.33	12.6	67.24	71.33	19.48
SD	2.98	2.47	2.21	1.78	1.78	1.59
Coeff. of variation	4.64	3.78	3.85	3.11	2.41	3.22
Retirement age						
Mean	61.63	61.6	3.6	64.36	63.68	5.85
SD	1.07	0.96	0.7	0.68	0.6	0.65
Coeff. of variation	1.75	1.56	1.17	1.06	0.96	0.99

Source: Authors' calculations based on an OeNB survey (2014) for Austria and Guiso et al. (2013) for Italy (whose data stem from a survey conducted in 2007).

Note: The table shows summary statistics of subjective replacement rate and retirement age distributions using probabilistic questions (see box 2).

Chart 4

Coefficient of variation of subjective replacement rate and retirement age

C.V. of the retirement age
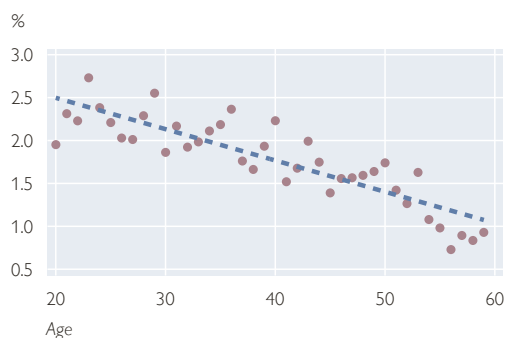
C.V. of the net replacement rate

Source: Authors' calculations based on an OeNB survey (2014).

strong agreement and another 40% said they agree somewhat. The age pattern of agreement, however, was rather weak.
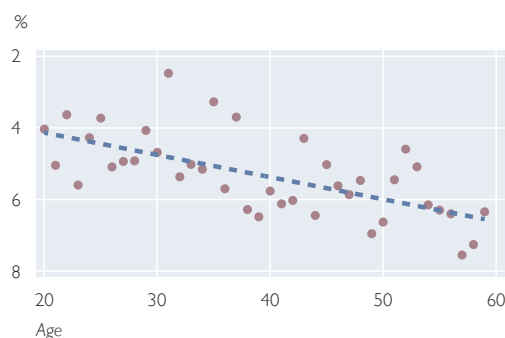
5 Knowledge about the pension system and the role of better information

One goal of the establishment of the pension account system has been to increase the transparency and comprehensibility of the system and pension calculation formulas. Every insured person has an individual pension account, which contains all their pension claims accrued so far, thereby helping people to estimate their future benefits. This will facilitate retirement planning, prevent negative surprises and reduce subjective uncertainty. In this section we investigate whether this goal has already been achieved. In the first part we use three survey questions in order to single out better informed respondents, and in the second part we study whether respondents' answers reflect the rules of the new system.

5.1 Do better informed people have different expectations?

At the time of our survey the pension account system has just been established and we want to use this "natural experiment" to investigate whether better knowledge about the structure of and the formulas used under the system have an effect on expected retirement behavior, expected pension benefits and the extent of uncertainty. Our survey included a number of questions that allow us to distinguish between individuals that are better informed and those who are less informed.

One question asked whether people have heard about the new pension account system. This is a rather coarse measure of knowledge but one would assume that knowing the system to be a precondition for understanding the formulas of the new system. Two additional questions were related to a specific episode of the pension reform process in Austria. We have mentioned in section 1 that the transition from the old to the new system involved the calculation of an initial pension credit that has been transferred to the pension accounts in 2014 for all persons born after 1955. In order to calculate those claims correctly the pension insurance agency PVA sent letters to insured persons from the cohorts 1958 to 1990 in which the new pension account system was described and people were asked to provide possibly missing information about contributory and noncontributory periods (for education, childcare, employment abroad etc.). We asked respondents whether they had received such a letter and whether they had returned the completed questionnaire to the agency. It can be expected that individuals who have received this letter and completed the form might differ from the rest of the population in that they have spent some time thinking about the new system and their own retirement plans, which in turn could have an effect on their expectations and their perceived uncertainty. We want to note, however, that these letters did not contain any direct information about the pension benefits the insured person may expect at retirement. This figure was provided in the "initial account information," which was sent to every insured person in 2014 after our survey has been completed.

Even before the calculation of the initial credits it had been possible to ask the PVA for a pension account statement. This statement also provided information related to one's accrued pension entitlements. This amount, however, was typically not indicative of a person's actual benefits since it only re-

ferred to the pension benefits that have been accumulated in the new system. The actual pension benefits, however, were based on "parallel accounting" (i.e. a mixed system of calculations based on previous and new legislation). We also asked respondents whether they had ever asked for such a pension account statement since one could again assume that this group of people is more interested in the topic of retirement and arguably also more knowledgeable about the pension formulas and retirement incentives, which may have an impact on expectations and perceived uncertainty.

In other words, we have three questions that allow us to distinguish between better and less informed respondents (see also table 5):

- the question whether they have heard about the new system ("have heard"),
- the question whether they have received the letter from and returned the questionnaire to the PVA ("received letter")
- and the question whether they have ever asked for a pension account statement ("asked for statement").

The percentages answering "yes" to these three questions were 73%, 30% and 36%, respectively. We would expect the last question to allow the clearest distinction between two groups. The application for an account statement is an active step that suggests a

high interest in one's own retirement. On the other hand, the first question is not very selective since the fact of having heard about the new system does not mean that one knows any of the details or that one has thought about the own future behavior.

In table 5 we document the coefficients of the three information variables in twelve separate regressions. Each of these regressions follows the benchmark specification in column (1) of table 1 and includes just a single additional variable. The dependent variables are expected retirement age, expected replacement rate and the coefficient of variation of these two variables as a measure of subjective uncertainty. In most specifications it does not seem to be the case that a higher level of information has a significant effect on expectations or subjective perceptions. Only for expected retirement age do the results indicate that communication with the PVA increased the expected age by 0.6 to 0.8 years. We cannot say more on the issue why information does not have more of an effect. Maybe the provided information is not helpful and sufficient to reduce uncertainty. On the other hand, it may simply have no effect on people's plans and expectations. This would be in line with the results of Mastrobuoni (2011), who has found for the U.S.A. that people who receive the annual Social Secu-

Table 5

The impact of knowledge

	(1)	(2)	(3)	(4)
Dependent variable	*Exp. ret. age*	*Exp. repl. rate*	*Coeff. of var. ret. age*	*Coeff. of var. repl. rate*
Have heard	0.30	1.44	0.01	−0.31
Received letter	0.57**	−0.41	−0.03	0.31
Asked for statement	0.76***	0.10	0.05	0.76**

Source: Authors' calculations based on an OeNB survey (2014).
Note: The table reports OLS estimates using population weights.***, **, * denote significance at the 0.01, 0.05 and 0.10 level, respectively. The dependent variable is different in the four columns. In each case we have run a regression like the benchmark specification in column (1) of table 1 and added one-by-one the three informational dummy variables. We report only the coefficient of these informational variables.

rity Statement have a better knowledge about their benefits without changing their retirement expectations or behavior.

5.2 Do the survey answers indicate knowledge of the new pension system?

There exists another dimension along which we can assess people's knowledge about the new pension system: If people are familiar with the workings of the system, their answers should reflect its basic rules. Equation (1) in section 1 expresses the core relation of the system: the 45–65–80 rule together with the deductions (supplements) for early (late) retirement.

As a first test we can analyze whether people have, on average, accurate perceptions of the system and realistic expectations about the benefits they will receive in the future. We can use a back-of-the-envelope calculation: in our core sample the average expected retirement age is 63.1 and respondents indicate to have started to work, on average, at the age of 17.8. This implies an expected number of insurance periods of almost exactly 45 years (if we disregard periods in which individuals might be out of the labor force). According to the formula this would imply a replacement rate of (45x1.78%)x(1−2x0.051)=72%. In the data we have found an expected replacement rate of 68%, which at first sight – seems to be more or less aligned with this back-of-the-envelope value.[15] There are, however, two caveats to this observation. First, the basic formula refers to the gross replacement rate while the question was about the *net* replacement rate. In OECD (2013, p. 217) the figures

suggest that the average net replacement rate will be about 17% higher than the gross rate. This would imply that the gross value of 72% corresponds to a net value of about 84%, which is considerably higher than the average answer of 68%. Second, the basic formula specifies the pension benefits as a fraction of average *lifetime* earnings while the question refers to respondents' *current* income. If there is an age-specific, upward-sloping wage profile, this difference is not innocuous. In order to evaluate the direction and the size of the bias, we would have to delve deeper into the age pattern of expectations and wage profiles.

Overall we can say that on average, the expectations measured in the survey are more or less in line with the rules of the actual system or at least not completely off the mark. However, repeating this exercise on an individual level produces more mixed results. A regression of expected replacement rates on individual expected insurance years (defined as the individually expected retirement age minus the individual age of labor market entry) gives a negative sign of the latter variable. This is similar to the negative sign of the expected retirement age in column (3) of table 3 and has to do with the fact that the expected retirement age cannot be treated as an exogenous variable. One way to circumvent this problem is to look at a difference-in-difference framework, in particular at the subjective assessment of how much the replacement rate will change if the retirement age decreases by one year. In the current system this value is given by the derivative of equation (1) with respect to R_i. The exact number depends on the

[15] *In a comparable study for the U.S.A., Dominitz and Manski (2006) come to a similar conclusion, i.e. that "respondents have a reasonable general sense of the benefits they would receive" (p. 222). Compare also the study by Liebman and Luttmer (2012).*

value of R_i but it can be calculated to be around 7% (note that this is also approximately equal to the sum of the deduction 5.1% and the "lost" accrual rate for one year 1.78%). In our survey we can approximate this subjective deduction by using the maximum and minimum values for the expected retirement age and replacement rate. In particular, we treat the expression

$$\frac{NRR_{max} - NRR_{min}}{R_{max} - R_{min}}$$ as a measure of this

subjective incentive. If we do so, the average subjective reduction is around 3.5% (the median 3%), i.e. about half the actual value. Again, there are a number of strong caveats to this statement. First, we assume in these calculations that respondents see a higher or lower retirement age as the only reason for a lower or higher replacement rate. Second, the survey question about the minimum and the maximum replacement rate indicated a reference retirement age. Our calculation thus assumes that people disregard this information and implicitly expect lower and higher retirement ages.

Overall we conclude that individual answers do not suggest that the main mechanisms of the new Austrian pension account system are well understood. Subjective uncertainty concerning the level of the expected net replacement is high and people do not seem to perceive the full size of the disincentives to early retirement that are inherent in the system. This would indicate that the efforts to communicate and popularize the main elements of the system should be stepped up. At the same time, however, we have to admit that the imprecision and sometimes inconsistency of the results may be not only due to respondents' ignorance of the system but also due to the complicated nature of the questionnaire itself.

It is simply much easier to provide one's own expected retirement age than to give a meaningful assessment of the expected net replacement rate, which is also confirmed by the different nonresponse rates for these two questions. Answering the latter not only requires some knowledge of the formulas of the system, but also taking into account the entire employment and earnings path up to the (unknown) retirement age; also, the implied gross replacement rate has to be calculated and, finally, translated into a net concept compared to current income. Doing all this requires quite a high degree of knowledge. Unfortunately, this complexity is inherent in the nature of the question about future pension benefits and it is not straightforward to come up with a less demanding alternative. Despite these difficulties we think that our survey answers provide us with useful information concerning expectations and possible behavioral responses.

6 Conclusions

Increasing the retirement age is a hot topic of public debate in Austria and a top policy priority. In this article we use survey evidence on retirement expectations to gain information about the likely future development of the average retirement age. Our results include encouraging, but also some cautionary messages.

On the positive side, we find that the expected retirement age is higher for younger cohorts, in particular it increases by about 1 year for every 13 years of age difference. This effect is not overly strong but it suffices to counterbalance the rise in the forecasted life expectancy for the next decades. Furthermore, subjective retirement expectations imply a path for the average effective retirement age that is above the assumptions that underlie official forecasts. Our data do not allow us to pre-

cisely determine the reasons for this expected increase. We conjecture that it has to do with the rules of the new pension account system, media coverage and the public debate surrounding the various steps of the pension reform process and possibly also with cohort-specific changes in preferences.

Our analysis provided, however, also results that are less favorable and in fact somewhat worrisome. First, we find that the current gap between the retirement ages of men and women (about 2.5 years) is not expected to be reduced in the next 50 years, despite the fact that in 2034 the statutory retirement age for women will be equal to the one for men. Second, we discover a high degree of uncertainty, insufficient knowledge about the main rules of the new pension system and an only modest influence of better information on behavioral expectations and uncertainty perceptions. There is good reason to speculate that the increase in expected (and subsequent actual) retirement behavior would

be even stronger if the incentives that are inherent in the new system were better or more widely understood.

Our results thus suggest that the main principles of the new pension account system should be communicated more effectively to the public.[16] Information about the pension account could play a key role in this regard. At the moment, all insured persons can obtain account information about their valorized contributions online from the pension insurance agency PVA. There is, however, no automatic mailing of the information, which could increase its general visibility. Furthermore, also the content could be improved, e.g. by providing more individualized information and more details about expected pension benefits at earlier or later retirement ages. Countries in which active and open communication between government and citizens has a longer tradition (like Sweden) could serve as useful role models in this respect.

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[16] *There is a debate about the effectiveness of informational interventions for labor supply and retirement behavior. Liebman and Lutmer (2015) found, e.g., that the provision of an informational brochure and the invitation to a web tutorial on the U.S. Social Security System increased labor force participation one year later by 4 percentage points.*

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Annex

Summary sample statistics

	Mean	SD	Min	Max	N
Age	39.68	10.73	20	59	1,251
Female	0.53	0.50	0	1	1,251
Marital status					
Married	0.55	0.50	0	1	1,251
Single/divorced	0.44	0.50	0	1	1,251
Widowed	0.01	0.11	0	1	1,251
Income	1,516.80	616.88	0	5,300	857
Education					
Compulsory	0.06	0.23	0	1	1,251
Vocational	0.64	0.48	0	1	1,251
Upper secondary	0.16	0.36	0	1	1,251
University	0.15	0.35	0	1	1,251
Employed in public sector	0.18	0.38	0	1	1,240
Labor market status					
ILF: unemployed	0.06	0.24	0	1	1,251
ILF: self-employed	0.07	0.25	0	1	1,251
Domestic resident	0.87	0.33	0	1	1,249
Bad health	0.15	0.36	0	1	1,250
Expectations					
Exp. own ret. age	63.07	3.73	53	80	1,104
Exp. partner ret. age	62.67	3.78	50	80	524
Exp. ret. age of younger people	65.87	3.02	55	80	467
Exp. net replacement rate	68.03	12.60	23.33	100	853
Subj. SD of exp. ret. age	1.07	0.70	0	4.83	891
Subj. SD of exp. NRR	2.98	2.21	0	14.18	853
Information					
Have heard	0.77	0.42	0	1	1,251
Received letter	0.59	0.49	0	1	1,251
Asked for statement	0.23	0.42	0	1	1,251

Source: Authors' calculations based on an OeNB survey (2014). Our sample is confined to all individuals that are in the labor force (a total of 1,310) and that are between 20 and 59 years old.

Expected retirement age (complete version of table 1)

	Benchmark	No income	Male	Female
Dependent variable	*Exp. ret. age*	*Exp. ret. age*	*Exp. ret. age*	*Exp. ret. age*
Age	−0.065***	−0.061***	−0.068***	−0.069***
	(0.014)	(0.012)	(0.022)	(0.019)
Male	2.247***	2.740***	–	–
	(0.266)	(0.219)		
Married	0.094	−0.049	0.190	−0.306
	(0.282)	(0.241)	(0.418)	(0.403)
Widowed	−0.450	−1.769***	−0.628	−0.578
	(0.467)	(0.652)	(1.028)	(0.580)
Unemployed	1.569**	0.196	1.706*	1.567
	(0.650)	(0.579)	(0.895)	(0.983)
Self-employed	1.084*	0.642	0.379	2.595*
	(0.604)	(0.450)	(0.694)	(1.556)
Employed in public sector	−0.485	−0.473*	−1.052**	0.322
	(0.305)	(0.272)	(0.466)	(0.384)
Domestic resident	0.167	−0.043	0.013	0.763
	(0.370)	(0.311)	(0.531)	(0.562)
Bad health	−1.714***	−0.819**	−2.404***	−0.899
	(0.474)	(0.417)	(0.774)	(0.594)
Education: vocational	−0.785	−0.511	−0.634	−0.875
	(0.580)	(0.471)	(0.934)	(0.810)
Education: upper secondary	−0.713	0.275	−0.305	−1.403
	(0.635)	(0.525)	(1.027)	(0.880)
Education: university	0.380	1.140**	0.262	0.526
	(0.692)	(0.547)	(1.033)	(0.987)
Income	2.029***	–	2.788***	1.970
	(0.586)		(0.898)	(1.599)
Income^2	−0.250**	–	−0.347**	−0.521
	(0.098)		(0.138)	(0.453)
Constant	63.104***	64.548***	64.496***	63.717***
	(0.957)	(0.805)	(1.420)	(1.726)
Regional dummies	YES	YES	YES	YES
Adjusted R^2	0.255	0.218	0.164	0.121
N	770	1,095	373	397

Source: Authors' calculations based on an OeNB survey (2014).

Note: The table reports OLS estimates using population weights. (Robust) standard errors are reported in parenthesis and ***, **, * denote significance at the 0.01, 0.05 and 0.10 level, respectively. The dependent variable is expected retirement age. Its average value for the two subsamples is 64.5 (male) and 61.8 (female).

Expected net replacement rate (complete version of table 3)

	Benchmark	No income	Ret. expectations
Dependent variable	Exp. net repl. rate	Exp. net repl. rate	Exp. net. repl. rate
Age	0.090*	0.157***	0.102*
	(0.052)	(0.048)	(0.055)
Male	−3.140***	−2.111**	−1.430
	(1.018)	(0.949)	(1.168)
Married	0.875	1.411	1.085
	(1.021)	(0.946)	(1.123)
Widowed	3.763	0.809	3.578
	(2.881)	(3.989)	(3.118)
Unemployed	−3.904	−4.189*	−3.828
	(2.581)	(2.382)	(3.096)
Self-employed	−4.853	−3.684	−4.141
	(3.144)	(2.331)	(3.320)
Employed in public sector	0.897	1.273	1.316
	(1.428)	(1.203)	(1.570)
Domestic resident	1.607	1.000	−0.077
	(1.652)	(1.567)	(1.775)
Bad health	−1.834	−1.115	−2.897
	(1.575)	(1.468)	(1.847)
Education: vocational	2.735	1.040	2.176
	(2.705)	(2.670)	(3.353)
Education: upper secondary	0.329	−1.946	−0.701
	(3.015)	(2.931)	(3.691)
Education: university	0.811	−0.211	−0.470
	(2.974)	(2.880)	(3.619)
Income	−0.243	–	−0.808
	(2.909)		(2.591)
Income^2	0.325	–	0.635
	(0.580)		(0.460)
Expected retirement age	–	–	−0.410*
			(0.230)
Constant	63.811***	62.214***	89.673***
	(4.249)	(3.443)	(15.119)
Regional dummies	YES	YES	YES
Adjusted R^2	0.084	0.068	0.096
N	667	850	535

Source: Authors' calculations based on an OeNB survey (2014).

Note: The table reports OLS estimates using population weights. (Robust) standard errors are reported in parenthesis and ***, **, * denote significance at the 0.01, 0.05 and 0.10 level, respectively. The dependent variable is the expected net replacement rate.