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Expectations of older workers regarding their exit from the labour market and its realization

Abstract

The objective of the paper is to analyse the labour market behaviour of older workers, specifically cross-country differences in expectations regarding the exit from the labour market and subsequent realization. Using longitudinal Survey of Health, Ageing and Retirement in Europe (SHARE) data and econometric analysis, we provide an international comparison of the situation of older workers in the Czech Republic with the other countries of Europe. The data show that although expectations about work activity at the age of 63 are quite similar in the Czech Republic from an international perspective, the work activity realized differs significantly between the Czech Republic and other countries. Our principal finding is that the Czech Republic has a high rate of unexpected retirements compared to all other European countries included in this analysis, even if we control for the socioeconomic background of respondents. The econometric analyses further show that up to about one-third of this difference can be explained by the lower retirement age set by the institutional environment in the Czech Republic, which is anticipated by employees at preretirement age. Conversely, the health status of older workers, and even the different allocation of employees to physically demanding occupations, does not have a significant impact on these cross-country differences in unexpected retirements.

Keywords

labour supply | expectations | retirement age | SHARE

JEL Codes

J14, J 26, J32

1. Introduction

One of the greatest challenges of the twenty-first century for the Czech Republic and the whole of Europe is population ageing. The current demographic projections of the Czech Statistical Office (2018) clearly show that the number of people over 65 in the Czech Republic is set to grow in the long run, and by the middle of this century, there will be one million more of them than today.[1] This will logically put pressure both on social and health services and on the activation of older workers in the labour market.

This study therefore aims to analyse the behaviour of older workers on the labour market, specifically

1 According to the projections of the Czech Statistical Office (CSO), the number of people over 65 will increase significantly over the next decades. While today there are two million people aged 65 and over, the CSO expects this group to grow to three million within thirty years. At the same time, the number of people of working age (15–64) is likely to fall by up to 900,000. Although any projection suffers from a certain degree of uncertainty by definition, the general trend here is clear and is based on the number of births since the 1970s. At the beginning, these are the so-called "Husák's" children, of whom up to 190,000 were born annually, significantly more than were born in the 1980s and especially in the 1990s. This late twentieth-century development will then have a significant impact on the demographic situation after 2035, when there will be a significant decline in the labour force and an increase in the number of pensioners.

their expectations of retirement, and provides an international comparison of the Czech Republic with Western European countries. Our ambition is to offer empirical evidence on expectations about future retirement and how these expectations are subsequently fulfilled. We investigate how various factors explain differences across countries in unexpected retirements, specifically in the Czech Republic and eight Western Europe countries: Germany, Sweden, Denmark, Belgium, the Netherlands, France, Spain, and Italy. The results show that the expected age of eligibility for retirement pension is important in explaining cross-country differences. Throughout the study, retirement is understood exclusively as retirement into inactivity.[2] Analysing the causes of retirement despite earlier expectations to work can create space and specific advice for a more appropriate setting of the pension system in order to increase the labour market participation of the older population. The foundation of this analysis is the international longitudinal Survey of Health, Ageing and Retirement in Europe (SHARE), which allow us to follow individuals before and after retirement. At the same time, these data enable us to focus on various factors that could explain the differences in unexpected retirements, such as the subjective health of workers, the different allocation of workers to physically demanding occupations, or simply the shock of becoming eligible for a retirement pension.

There is a general consensus in the foreign literature that the expectations of preretirees regarding their entry into retirement are fairly accurate, with respect to both timing and the expected income (Chan & Stevens, 2004). In addition, a number of international studies show that the determinants of expectations about retirement entry are consistent with each individual's situation, including, for example, health status or type of employment (Benítez-Silva & Dwyer, 2005). The transition from retirement back to work, a phenomenon much more common in the USA than in Europe, has been further explored by Maestas (2010), who has pointed to a strong relationship between expectations to work after retirement age and the transition from retirement to re-employment (unretirement). Overall, however, these studies mainly map the situation in the USA; in European countries, the effect of expectations on the transition to retirement has been virtually unexplored. In the Czech literature, only one study has addressed the topic of retirement and the expectations of older workers. Vidovičová (2013) compares a group of people aged 55–64 who are close to retirement with a group of retired people. The results show that respondents before entering retirement imagine retirement as a joyful event, with this idea reflecting dissatisfaction in their current job. The two groups also differ in their perception and evaluation of the benefits of retired life, indicating that entering retirement is not wholly perceived as a positive step in hindsight. Unfortunately, this study is not longitudinal in nature and therefore it cannot be ruled out whether the measurements and conclusions are influenced by time or cohort effects.

Concerning the retirement decision itself, the literature looks at several factors here. Empirical studies show that poor health is an important element in the decision to retire (McGarry, 2004; van den Berg, Elders & Burdorf, 2010; Jones, Rice & Roberts, 2010; Gupta & Larsen, 2010). Poor working conditions, and the associated job dissatisfaction, appear to be another important factor in the decision to leave the labour market (Siegrist et al., 2007; Schnalzenberger et al., 2008; Bockerman & Ilmakunnas, 2020). The study by Riedel, Hofer, & Wögerbauer (2015) also shows that intellectual workers, defined on the basis of the International Standard Classification of Occupations codes 1 and 2[3] (ISCO), plan their retirement later than workers in other groups. The statutory retirement age also appears to be another important factor for retirement. Studies looking at the effects of the shift in the statutory retirement age in Germany suggest that this shift has led to a delay in retirement (Engels, Geyer & Haan, 2017) as well as a shift in expectations about retirement (Coppola & Wilke, 2014). In this study, we therefore further seek to explain the differences in unexpected retirement between the Czech Republic and Western European countries based on the above-mentioned factors.

The basic research question of our study is whether and how older workers' expectations are reflected in their actual behaviour when leaving the labour market. Specifically, we test whether becoming eligible for retirement can explain higher rates of unexpected labour market exits in the Czech Republic versus other European countries. In a regression analysis, we also test whether the observed cross-country differences can be explained by subjective

2 Situations in which the respondent works at least one hour per week and receives a pension are evaluated as work activity.

3 It is an occupational classification in which codes 1 and 2 belong to a group of legislators and managers and a group of specialists.

health status, different segregation of job types across countries, or replacement rates. This analysis does not aim to capture all possible factors that may enter into the different realisations of expectations across Europe. However, it is the first analysis of its kind to look in detail at the factors impacting retirement, particularly for those workers who previously expected to work longer than is actually the case.

In the context of the current literature, our research shows that although expectations about work activity at the age of 63 are quite similar in the Czech Republic from an international perspective, the work activity realized differs significantly between the Czech Republic and other countries. Our principal finding is that the Czech Republic has a high rate of unexpected retirements compared to all other European countries included in this analysis. The econometric analysis suggests that up to about one-third of this difference can be explained by the lower retirement age set by the institutional environment in the Czech Republic, which is anticipated by employees at preretirement age. Conversely, the health status of older workers, and even the different allocation of employees to physically demanding occupations, does not have a significant impact on these differences in unexpected retirements. The same can be said for replacement rates, which are higher in the Czech Republic than, for example, in Germany, but only for the low-income group. Our evidence thus shows that the retirement age is crucial for the labour supply of older workers in the labour market.

Our findings are important for public policy measures focused on prolonging labour market activity, such as the extension of the retirement age (i.e., the age of eligibility for early retirement), or the incentives of older workers in highly skilled occupations to remain in the labour market after they become eligible for old-age pensions. At the same time, this study offers basic statistical facts on the situation of older workers in the Czech Republic in comparison with Western European countries.

2. Data and Methodology

This study is based on the SHARE project.[4] It is an international multidimensional longitudinal microdata database with more than 140,000 individuals and their partners (approximately 380,000 interviews in total) aged 50+ in 27 European countries and Israel. The research focuses on demographics, family and social ties; education; health and health care; work and retirement; income, consumption, assets; family assistance and financial transfers; housing; activities; expectations; life history; quality of life, and numerous other topics. Importantly, the survey also includes measures of physical and mental health. The result is a unique data set providing information on the state, history, and development of Czech and European society. The first wave of data collection began in 2005 and has been repeated every two years since. Since 2007, i.e., since the second wave, the Czech Republic has participated in all waves of data collection on a panel sample of approximately 5,600 respondents.

In this study, we mainly use waves from 2007, 2011, 2013, 2015, and 2017[5], which allows us to compare health, ageing, and retirement trends in different European countries over a sufficiently long period. The great advantage of these data is the possibility to follow an individual over time and therefore his/her decisions over a certain period of time. In our analysis, we focus on nine European countries, namely, the Czech Republic, Germany, Sweden, Denmark, Spain, Italy, France, Belgium and the Netherlands. The selection of these countries is based on the fact that they are included in all previous waves and therefore provide a chance to fully exploit the longitudinal structure of the data. At the same time, these countries represent various social and economic systems in Europe.

The key variables in this study are workers' expectations about their transition to retirement and the subsequent realization or non-realization of these expectations. In SHARE, we use questions aimed at working respondents, who are asked about their likelihood of working full-time at age 63 for these purposes. The average age of a respondent answering this question is 55. Since this is an expected probability, the response values here range from 0 to 100. Our sample thus consists of those respondents who appear at least in two SHARE waves: in the first wave answering the question about their expectations to work at age 63, and in the second wave those who

4 See Börsch-Supan et al. (2013) for methodological details.

5 The analysis does not include data from the third wave in 2009. This is the so-called SHARE LIFE wave, which asks respondents for detailed information about their history, either from their childhood or their work history. At the same time, it does not include all questions from previous waves and therefore does not offer sufficient information for our analysis.

have reached at least the age 63. In order to increase the number of observations in our sample, we use any available pair of waves that could provide this information about the respondent.[6] In total, around 6,300 individuals were surveyed about their likelihood of working full-time at age 63 in SHARE in selected countries and, in the same time, are observed around age 63.[7]

To better interpret the results, we then divided this expected probability of working at the age of 63 into responses with high and low, or zero expectations. We then defined high expectations as those responses that reported values for the probability of working greater than 75%. In other words, if a respondent answered that he or she would be likely to work at age 63 with a probability greater than 75%, we label this response as a high expectation of working.[8]

Due to the longitudinal nature of the data, we are able to further track individuals over time and compare their stated expectations at the age of 50–61 with their actual behaviour at approximately the age of 63. For statistical reasons, we have chosen here an interval of 62–64 years. This allows us to investigate the realization, or possible non-realization, of high expectations to work in the Czech Republic and to compare them subsequently with the situation in other European countries. For economic activity status, we have chosen a definition similar to that used in the Labour Force Survey (LFS). Thus, on the basis of a person's predominant activity, it is possible to define persons in and out of the labour force. Unemployed people are considered as a part of the labour force.[9]

Table 1. Descriptive Statistics of the Sample of SHARE Data

	Czechia	Germany	All other countries
Average expectations of working at the age of 63 (%)	48.17	45.39	43.77
	(37.87)	(39.97)	(38.52)
Share of respondents with high expectations of working[1] (%)	35.14	34.44	31.96
	(46.00)	(47.16)	(45.27)
Expected statutory retirement age	61.2	64	63.4
	(2.21)	(2.11)	(2.89)
Share of employed	0.730	0.807	0.774
	(0.347)	(0.330)	(0.335)
Average age	56.98	56.79	56.98
	(3.347)	(3.524)	(3.561)
White-collar occupation[2]	0.595	0.724	0.668
	(0.486)	(0.442)	(0.466)
Primary education	0.0700	0.00469	0.107
	(0.255)	(0.0684)	(0.309)
Lower secondary	0.299	0.0606	0.155
	(0.458)	(0.239)	(0.361)
Higher secondary	0.455	0.537	0.368
	(0.498)	(0.499)	(0.482)
Tertiary education	0.176	0.398	0.370
	(0.381)	(0.490)	(0.483)
Share of respondents with some health limitation in their daily activities	0.315	0.326	0.236
	(0.372)	(0.368)	(0.339)
Observations	2,071	2,344	24,793

Note: Standard deviations are given in parentheses.

[1] The high expectations of working are those responses that reported values for the probability of working greater than 75%.

[2] The types of occupations with ISCO code 1 to 5.

2.1. Basic Control Variables

In order to compare how older workers respond to their health status, and specifically how it affects their decision to leave the labour market, we next focus on the declared limitations of older people in their daily

6 Using different pair of waves for respondents in our sample, and hence different points in time when they were interviewed, we have to account for possible changes in the conditions and parameters of retirement during the period studied. We do this by including year dummy variables into the regression analysis.

7 The decline in observations in our sample is due to the fact that some respondents have not yet reached the age of 63 during the survey, and therefore we do not know whether they will decide to retire or continue working at this age. At the same time, there are some respondents answering the question about expectations to work at age 63, but do not appear in the next waves. This fact additionally reduces the number of observations in our sample.

8 The analysis of work expectations is dealt with in the first part of the Results section. For descriptive statistics, see Table 1 and Table A1 in the Appendix.

9 It should be noted here that we have also tried alternative definitions of inactivity, for example, the number of hours worked or, alternatively, whether or not a person receives a pension. However, these alternative approaches did not have a significant impact on the results.

activities. The SHARE survey asks older people if they are restricted due to their health condition in their normal daily activities. Respondents could choose between the answers "Severely restricted", "Restricted but not severely", and "No restriction". To facilitate the interpretation of the results, we aggregated the responses into a binary variable that takes the value of 1 if the respondent has at least some limitation (i.e., "Severe limitation" or "Limitations but not severe") and the value of 0 if "No limitation".

Furthermore, one of the factors discussed is the age at which people become eligible for the old-age pension. Descriptive statistics show that these expectations of receiving an old-age pension differ by almost three years between Czech Republic and Germany.

Thanks to the detailed questionnaire of the SHARE project, we are able to further track various characteristics of individuals, such as their highest educational attainment (based on International Standard Classification of Education codes, ISCED) and type of employment (based on ISCO codes). The information on the highest educational attainment allowed us to define workers as highly skilled (i.e., with a university degree) and low skilled (i.e., with a secondary or primary education). For simplicity, we also divided the types of occupations into those requiring higher qualifications (these are ISCO codes 1 to 5) and those requiring lower qualifications (ISCO codes 6 to 9). Descriptive statistics for all the variables mentioned in the Czech Republic, Germany, and all other countries are shown in Table 1.

3. Methodology

The actual empirical analysis of the realization or possible non-realization of the expectation to work at the age of 63 is performed using regression functions. Their aim is to statistically estimate the international differences (*"country"* variable[10]) in the probability of work activity conditional on previous high expectations to work, controlling for observable characteristics of workers. In this analysis, we then gradually control for other characteristics of individuals. Doing this, we try to explain the differences in the realization of expectations across the European countries by the following three factors: education and type of employment, health status, and the expected retirement age. This association between the realization of expectations and the factors that may influence them is described by the following model[11]:

$$P(Y=1|VO)=F(country,\ education,\ occupation,\ health,\ retirementage,\varepsilon),$$

where Y is a binary variable equal to one when the respondent retired and 0 when the respondent is the part of labour force at the age of 63, conditional on the previous high expectations of working (VO=1). Thus, in this model, we explain the probability of not realizing high expectations to work at the age of 63. In all regressions, Sweden figures as the reference group. Thus, only binary variables for the other countries enter the baseline model. The total estimate of these variables therefore represents the difference in non-realization of high expectations between the particular country and Sweden. Subsequent regressions then individually ascertain to what extent the mentioned factors can explain this difference. We admit that the presented model suffers from an omitted variable problem, which may cause bias in the presented estimates. However, our goal is to present descriptive evidence about cross-country differences in unplanned retirements. We take advantage of SHARE data to control for variables that are normally not available on a national level.

Variables representing the education and occupation type control in our model for the differences across countries in the proportion of the workforce with lower skills and education. Thus, these are mainly those employed in manual jobs, which are more physically demanding than highly skilled jobs, and thus may play a larger role in the final decision not to work despite previously high expectations. Using the health variable, we then control for cross-country differences in the health status of the population in question, specifically for the subjective perceptions of individuals, the older employed, regarding their health constraints in daily activities. The last factor in the regression is the reported expected age at which respondents will be eligible for an unreduced old-age pension. We therefore take into account cross-country differences in the age at which people become eligible for an old-age pension.

10 This variable is represented in the model by dummy variables that represent each country separately.

11 The model is described in greater detail in Appendix A1.

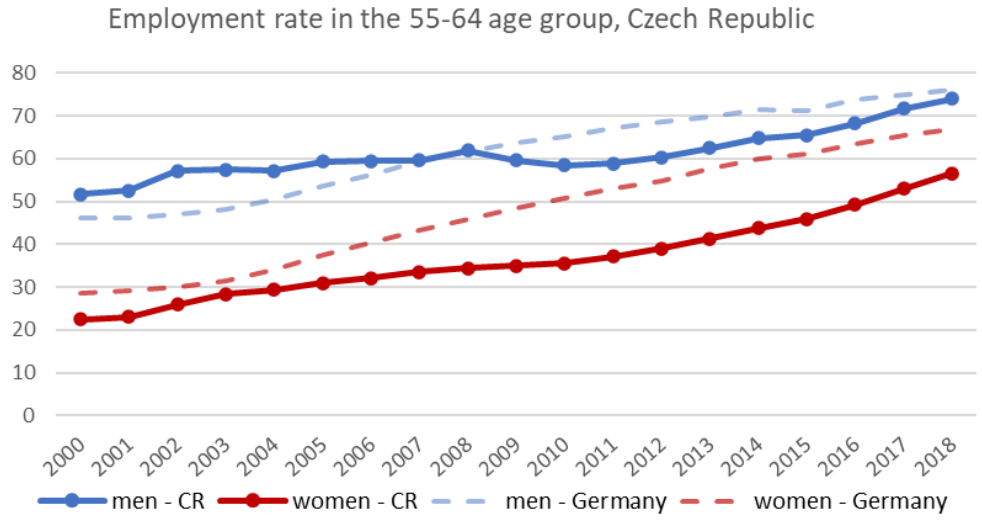

Figure 1. Employment Rate in the 55–64 Age Group as a Percent of the Population in the Czech Republic
Source: Eurostat (LFS, Employment and activity by sex and age)

3.1. The Current Situation of the Economically Active on the Labour Market

In this section, we describe in more detail the work activity of the elderly population in the Czech Republic and its development over time. At the same time, we look at the dynamics of the labour market exits for retirement in general, and also in particular, for individual groups of the population on the basis of their health status and the type of employment. Here we compare the situation in the Czech Republic with the situation in the countries of Western Europe, which in this section, for simplicity, is represented by Germany. It is the country closest to the Czech Republic in Western Europe.

The ageing of the Czech population is reflected in the shrinking size of the labour force. One of the possible solutions to this development is to increase the labour market participation rate of those population groups with the lowest employment rates. These are mainly women and older workers. By this measure, the situation in the Czech Republic appears to be favourable, or at least moving in the right direction. This is demonstrated by Figure 1, which shows the share of workers in the 55–64 age group based on the LFS.

The figure clearly shows the increase in the labour force in this age group in recent years, which is mainly due to the increase in the employment rate of women. It has risen from 22% in 2000 to over 57% in 2018, largely converging with the rates common in Western Europe, and more specifically in Germany, where the female employment rate in the 55–64 age group is 67%. This development is probably due to the gradual increase in the retirement age, especially for women, over the last 10 years. Although not as steep, but still positive, employment trends can also be observed for the male population in the Czech Republic, where it has increased by 22 percentage points over the last 20 years, from 52% to 74%. Compared to Germany, employment of men in the 55–64 age group is therefore at about the same level as in the Czech Republic, which was not the case before.

3.2. Dynamics of Labour Market Exit

In this section, we look at the evolution of men's and women's move from the labour market to retirement in the Czech Republic and compare this evolution with neighbouring Germany. A more detailed insight into the employment rate and specifically the dynamics of labour market exit for women and men is shown in Figure 2. The horizontal axis shows the age of individuals, and the vertical axis shows the share of employed people for a given age, which is taken as a continuous variable for simplicity's sake. The results are shown in the figure for the Czech Republic in 2007 and 2017, and for comparison we also report the data for Germany in 2017.

Figure 2 (right), showing the employment rate for women by age, clearly indicates that these have increased over time for all age groups up to age 62. After the age of 62, the employment rate for women

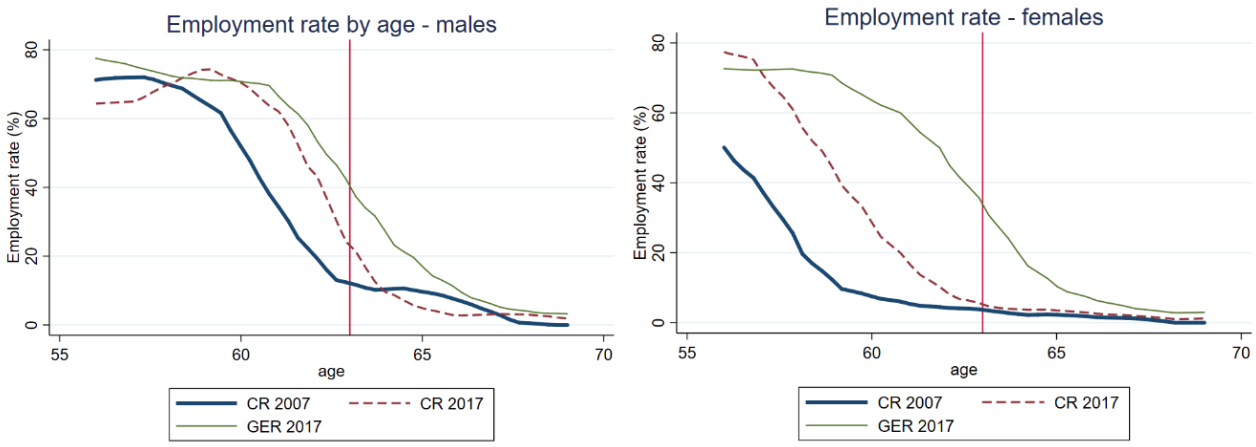

Figure 2. Share of Employed People for a Given Age in Years 2007 and 2017 in the Czech Republic
Note. For comparison purposes, there also are data for Germany in 2017.
Source: SHARE waves 2, 4, 5, 6, and 7 (own calculations)

in the Czech Republic is almost zero between 2007 and 2017. Although there has been a significant shift in female employment in this age group in the Czech Republic over the last decade, the Czech Republic is still lagging behind compared to Germany, where around 40% of women aged 63 are still working. Moreover, it is not until around 67 years of age that Germany reaches near-zero female employment.

As far as male employment is concerned, an increase in employment can also be observed here between 2007 and 2017 for the 59–63 age group (Figure 2, right). Thus, the employment of men aged 63 has increased from about 15% in 2007 to just over 20% in 2017. The dynamics of men leaving the labour market in neighbouring Germany is also similar to the Czech Republic. In Germany, however, the employment rate of men after the age of 62 declines more slowly than in the Czech Republic, reaching around 43% at the age of 63.

While people in the Czech Republic become eligible for retirement earlier on average than in other countries, this may also have a different impact on their decision to retire, despite their earlier expectations to work. In Figure 3 below, we therefore show how respondents' employment changes with respect to the distance in age from the expected[12] retirement pension age in Germany and the Czech Republic. Indeed, on the horizontal axis, time is normalized by the value of the expected age of receipt of the old-age pension, so the value -2 is two years until the respondent expects to receive the old-age pension.[13] This confirms that people in Germany and the Czech Republic behave similarly on this scale, i.e., they retire when their current age is the same as the age at which they expected to receive a pension. The main difference between Germany and the Czech Republic therefore remains the age at which people expect to start receiving a retirement pension.

In order to compare how older workers respond to their health status, and specifically how it influences their decision to leave the labour market, we further focus on the declared limitations of older people in their daily activities. Looking to the dynamics of labour market exit of those with limitation in daily activities (Figure 4), they follow the overall dynamics of labour exit documented in Figure 2. The drop for women in the Czech Republic is therefore again most likely due to the overall earlier exit of women from the labour market in the Czech Republic compared to women in Germany. However, according to the World Health Organization (WHO), healthy life expectancy is two years higher in Germany than in the Czech

12 We have no information about when they are actually eligible for a pension. We use the expected retirement age as a proxy for this variable in our analysis.

13 A similar analysis, this time for the Czech Republic only, was carried out on the basis of data from the statistical yearbook of the Czech Social Security Administration (CSSA). These show the share of age groups of men in newly granted old-age pensions for 2018. In a simplified way, we could interpret this share as the probability of entering early or normal retirement by age. Again, this confirms that the observed sharp decline in male employment at the age of 63, and hence their exit from the labour market, can therefore be explained by their newly accrued pension entitlement (see Figure A1 in the Appendix).

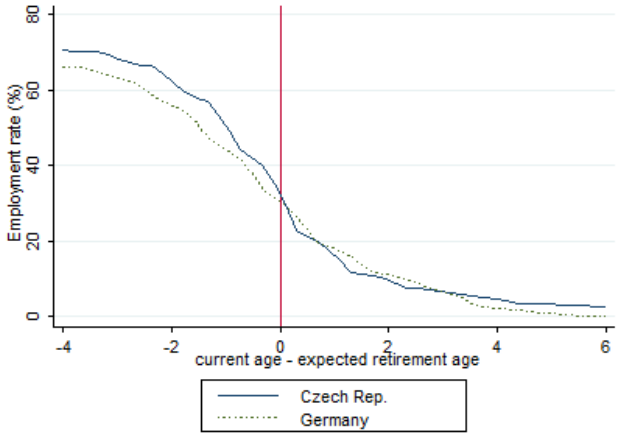

Figure 3. Proportion of Employed in Relation to the Subjective Expected Age of Receiving a Retirement Pension
Source: SHARE waves 2, 4, 5, 6, and 7 (own calculations)

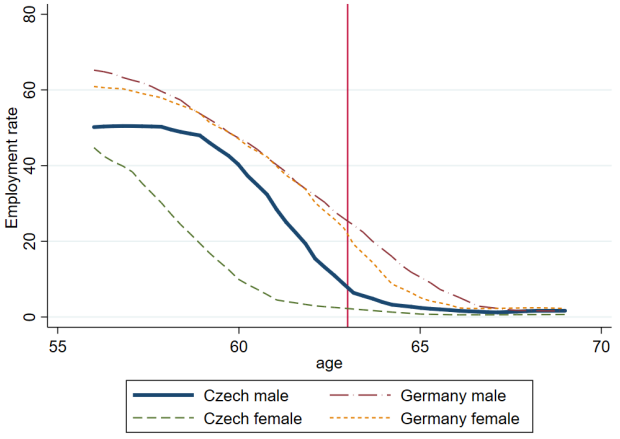

Figure 4. Employment Rates of Respondents With Limitations in Daily Activities Across Respondents' Ages (Czech Republic and Germany)
Source: SHARE waves 2, 4, 5, 6, and 7 (own calculations)

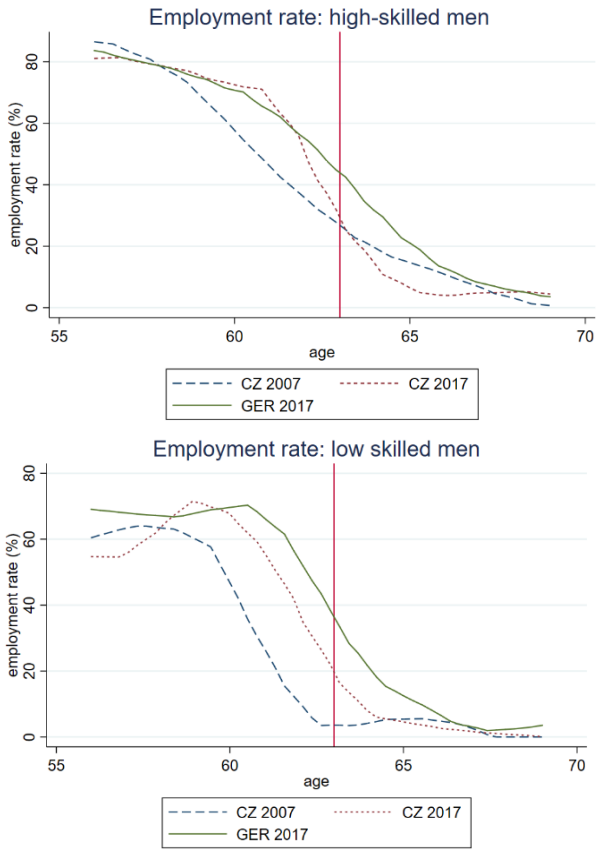

Figure 5. Employment Rate for Highly vs. Low-skilled Men Across Respondents' Ages in 2007 and 2017 in the Czech Republic
Note. For comparison purposes, there also are data for Germany in 2017.
Source: SHARE waves 2, 4, 5, 6, and 7 (own calculations)

Republic.[14] Thus, the shift in the health status of the older generation seems to take place sometime after the age of 60, possibly in the period after pension eligibility.

Finally, we will look at the dynamics of men's exit from the labour market by type of employment (Figure 5). As we might expect, employment of the highly skilled declines much more slowly from the ages of 55–65. For example, at the age of 61, the employment rate for highly skilled men is still at around 70%, whereas among the low-skilled only half are working. Despite the higher employment of the highly skilled before retirement age, there is still the possibility of seeing a fall in employment after retirement age. This decline is again likely to be due to the onset of entitlement to the old-age pension.

4. Results

4.1. Descriptive Analysis: Retirement Expectations at Pre-retirement Age and Their Realization

In this section, we examine expectations of retirement and their realization. For simplicity in the representation of results in figures, we have divided in this section the observed countries into the Czech Republic, Germany, the North (Sweden and Denmark) and the South (Spain and Italy) and the

14 In the Czech Republic, the overall healthy life expectancy is 69.3 years (67 for men and 71.6 for women). In Germany, the overall life expectancy is 71.6 years (70 for men and 73 for women). Source: http://apps.who.int/gho/data/view.main.HALEXv

West (France, Belgium and the Netherlands). First, in our analysis of the impact of expectations to work on entering retirement, we focus on comparing the share of individuals with high expectations across European countries and regions (Figure 6). Let us note that those who responded that they are likely to be working at the age of 63 with a probability of more than 75% are considered to be working with high expectations. The share of workers with high expectations is shown separately for men and women. We observe here that the Czech Republic has a similar share of workers with high expectations as Germany. In both countries, it is approximately 45% men and 25% women. In the North and South, on the other hand, expectations are higher than in the Czech Republic, especially for women. Very low expectations to work at the age 63 is, surprisingly, in the West. In the context of the different retirement ages in Germany and the Czech Republic, the figures shown are actually surprising, especially as we subsequently observe a very small proportion of workers of retirement age.

A more detailed insight into these expectations is provided by Figure 7, which shows these expectations separately for different job categories and for workers with different levels of educational attainment. Similar to the findings in the previous literature (Benítez-Silva & Dwyer, 2005; Riedel et al., 2015), especially the highly skilled and university graduates declare a very high probability of working at age 63. This is the case in all countries except the West. The expectations in the Czech Republic are among the highest compared to other European countries. People working in low-skilled occupations have significantly lower expectations of working at 63 than those in high-skilled occupations. A similar pattern can also be observed for the distribution by highest educational attainment. University graduates in the Czech Republic have even significantly higher expectations than in Germany (about 62% expect to be working at 63 compared to 48% in Germany). Thus, in the Czech Republic, people aged 50 to 60 do not seem to expect in near future any high barriers to their occupation. Indeed, so-called white-collar and skilled workers do not experience significant long-term labour market constraints. However, this does not correspond to what is subsequently observed when they reach this age.

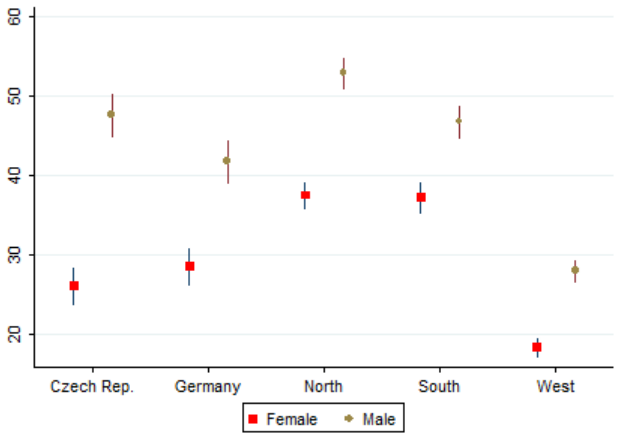

Figure 6. Share of Individuals with High Expectations of Working at the Age of 63 (International Comparison). Source: SHARE waves 2, 4, 5, 6, and 7 (own calculations)

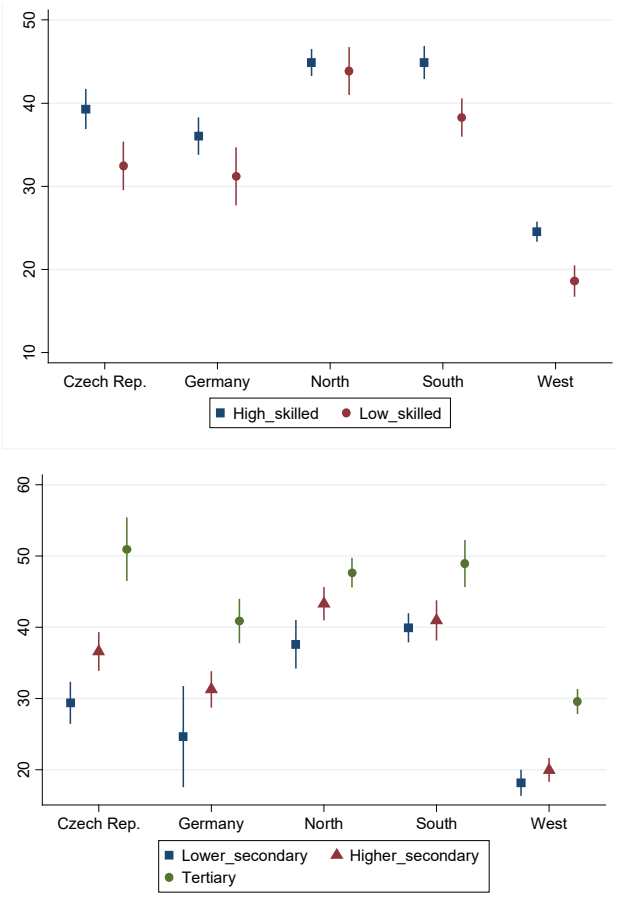

Figure 7. Share of Individuals With High Expectations of Working at the Age of 63, by the Type of Occupation and the Highest Level of Educational Attainment (Men) Source: SHARE waves 2, 4, 5, 6, and 7 (own calculations)

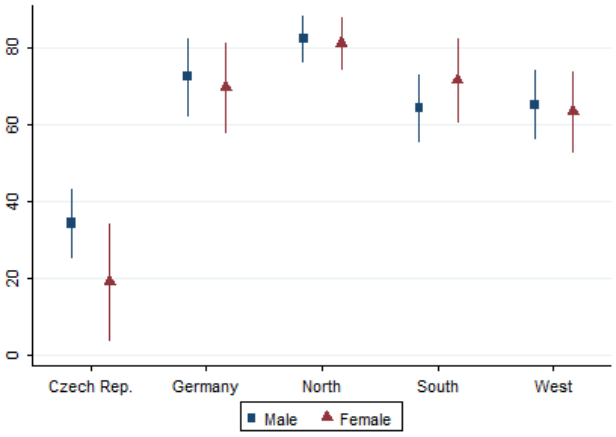

Figure 8. Share of Those Actually Working of Those Who Declared a High Expectation of Working in the Previous Period
Note: The figure shows the average values together for working women and men.
Source: SHARE waves 2, 4, 5, 6, and 7 (own calculations)

Furthermore, thanks to the longitudinal nature of the data, we are able to follow individuals over time and compare their declared expectations at the age of 50–61 (mean age of approximately 55) with their actual behaviour at approximately the age of 63 (for statistical reasons, we chose an interval of 62–64). Figure 8 therefore shows the proportion of those actually working of those who declared a high willingness to work in the previous period. Here it is clear that the Czech Republic has a significantly lower proportion of those who declared a willingness to work in the previous period and then actually work at 63 compared to all other countries. This is true for both genders, for low- and high-skilled occupations, and for all educational groups.[15] Although the highest proportion of those with high expectations is among the highly educated, only 40% of those with high expectations are actually working at the age of 63. This is half the figure for other European countries. Similar values are measured for low- and high-skilled occupations. This situation in the Czech Republic is not only in contrast with other countries, but also in contrast with the literature, which shows accordance between expectations and realization of the entry into retirement (Chan & Stevenson, 2004).

These results imply that there is probably a factor in the Czech Republic that is different from other countries and causes Czechs to leave the labour market early and in a way that is not in line with their expectations. There are a number of candidate explanations, such as poor health, different allocation of workers to physically demanding occupations (the Czech Republic has a higher share of manufacturing jobs than other European countries), or characteristics of the pension system. We will focus on these factors in the following analysis of their impact on the transition to retirement and, consequently, on the non-realization of earlier expectations to work. However, we admit that not all potential factors explaining cross-country differences may be observed in our data. We thus interpret our results with caution, admitting that other possible explanation for cross-country differences may exist.

4.2. What Influences Unplanned Retirement?

In the previous sections, we have shown that many older workers retire much earlier than originally planned. It is also the case that in subjective indicators of health, they are very similar to those in other European countries. Although, on the other hand, people over 50 in the Czech Republic suffer from higher rates of obesity than in other European countries (Pertold & Šatava, 2018). Furthermore, we have shown that older workers in the Czech Republic start to qualify for old-age pensions earlier compared to other European countries. In this section, we therefore focus on identifying what may be the key determinant of unplanned retirement. Methodologically, we rely on regression analysis to estimate the difference in unplanned retirement between countries controlling for various factors.

Specifically, we aim to estimate the cross-country differences in the prevalence of unplanned retirement using different econometric models that successively adjust for estimated cross-country differences in terms of the type of employment and education, then for differences in population health, and finally, for expectations of retirement eligibility. The results of these regressions are summarised in Table 2.

The first row represents the overall difference in non-realized work expectations between the country and Sweden, which is taken as the reference group in all regressions. In line with what has already been found in the descriptive analysis, the high rate of unplanned retirement in the Czech Republic compared to Sweden, and also to all other countries under study, is estimated to be 42%. All other

15 The results of these statistics by type of employment and by highest educational attainment are available at request.

Table 2. Differences in Unplanned Retirement Across Countries Compared to Sweden and Possible Factors That Explain These Differences (Linear Probability Model)*

	(1)	(2)	(3)	(4)
Czech Republic	0.421***	0.383***	0.374***	0.245***
	(0.028)	(0.028)	(0.028)	(0.030)
Germany	0.096***	0.107***	0.097***	0.077***
	(0.028)	(0.028)	(0.028)	(0.028)
Denmark	0.010	0.013	0.008	0.030
	(0.027)	(0.026)	(0.026)	(0.026)
Italy	0.173***	0.123***	0.112***	0.053
	(0.033)	(0.033)	(0.033)	(0.033)
Spain	0.094***	0.026	0.014	0.013
	(0.031)	(0.032)	(0.032)	(0.032)
France	0.265***	0.240***	0.233***	0.127***
	(0.037)	(0.037)	(0.037)	(0.037)
Belgium	0.160***	0.166***	0.161***	0.134***
	(0.032)	(0.032)	(0.032)	(0.031)
The Netherlands	0.095*	0.087*	0.102**	0.117**
	(0.050)	(0.049)	(0.049)	(0.048)
Control variables Education and occupation		X	X	X
			X	X
Health status				
Expected retirement age				X
Year	X	X	X	X
Number of observations	3255	3255	3255	3255
R^2	0.086	0.107	0.112	0.145

*Dependent variable in all regressions is a binary variable, and hence, it would be more appropriate to apply the probit model. We present results for the probit model in the Appendix in Table A2, and show that these results are in line with the ones using the linear probability model. Therefore, due to a clearer interpretation of the results, we chose the linear probability model for our analysis in the main text. The full linear probability model is in the Appendix in Table A3.
Notes: The results correspond to the model described in Equation (1).
***p <0.01; **p <0.05; *p <0.1.

countries, except Denmark, have significantly higher rates of unplanned retirement than Sweden, however, with magnitude lower than 20%. The only exception here is France, with the magnitude of 27%.

We then explain this large difference using a series of variables. Columns 2 and 3 show that neither the differences in health status nor the differences in the allocation of workers to physically demanding occupations affect the estimated differences between countries in unrealized work expectations. Even after controlling for these factors, the difference between the Czech Republic and Sweden in unplanned retirement is high and equal to 37%. On the other hand, there is a significant drop in unplanned retirements in Spain, suggesting that these factors are able to explain its previous difference with Sweden.

In contrast, Column 4 shows that the largest impact on unplanned retirements for the Czech Republic is

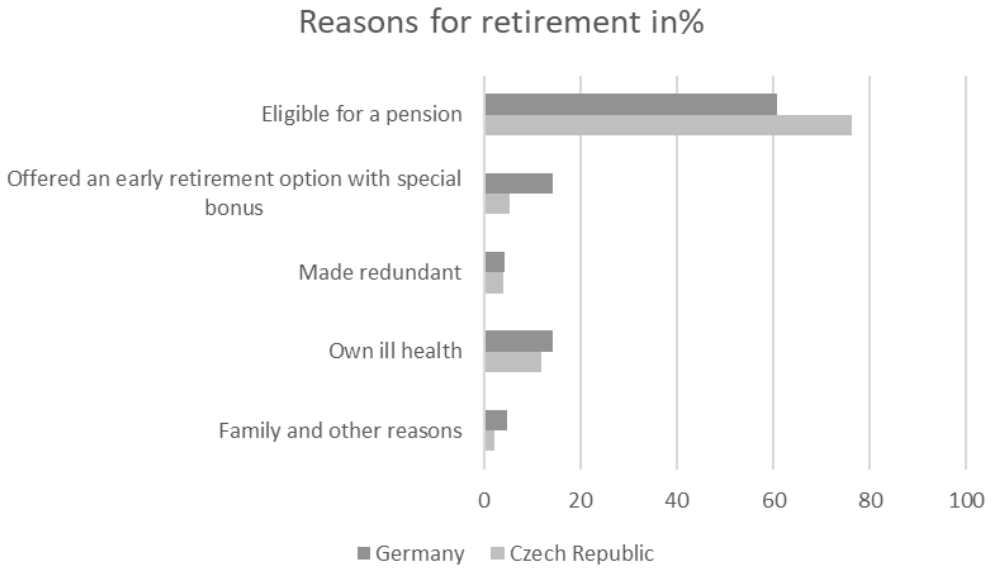

Figure 9. Reasons for Which Respondents Retired
Source: SHARE Waves 1, 2, 4, 5, and 6 (own calculations)

the expected age of eligibility for the old-age pension, which statistically significantly reduces this difference by up to about a third. In other countries, except Italy and France, this factor does not play a significant role in explaining differences in unexpected retirements. This is probably due to the similar set-up of the pension system in these countries, or possibly also to the fact that the retirement age in these countries has been set above 63 for a long time.

Subsequently, our analysis focuses on respondents' answers regarding their reasons for leaving the labour market and retiring. Here, *ex post*, the respondent was able to answer in different variations of the reason for retirement. Figure 9 compares these responses for the Czech Republic and Germany. As can be seen from the figure, the dominant answer is meeting the requirements for a retirement pension. Up to 77% of Czech respondents retire from the labour market for this reason. The highest share of these responses, although slightly lower than in the Czech Republic, was also reported by respondents in Germany, up to 60%. On the other hand, responses related to health or the problem of losing a job are in the vast minority. These responses only confirm once again the significant influence of the moment when workers become eligible for a pension on their decision to leave the labour market, sometimes despite their earlier willingness to work longer.

Finally, it should be noted that one of the possible reasons for this behaviour may also be replacement rates. These are around 92% for low-wage workers in the Czech Republic, compared to only 56% in Germany (OECD 2019). As these are mainly low-skilled and with less education, they also experience greater health constraints at work, according to our analysis. It is therefore understandable that the possibility of receiving a pension, and one almost as high as their current salary, encourages them to leave the labour market as soon as possible. In contrast, for high-income workers, replacement rates in the Czech Republic and Germany are comparable, at 48% and 51%, respectively (OECD 2019). Hence, replacement rates for high-income workers do not explain the high percentage of unrealized past high expectations to work, which was around 65% for this group of workers in the Czech Republic compared to 30% in Germany.[16]

5. Conclusion

In this study, we analyse the transition of older workers into retirement. Compared to other countries in Western Europe, older Czech workers leave the labour market earlier. In our empirical analysis, we focus on some factors that might explain this earlier entry into retirement. In particular, these include expectations about future labour market exit, the subjective health status of individuals, and the different allocation of workers to physically demanding occupations. The analysis shows that a significant proportion of

16 See Figure A1 in the Appendix.

workers aged 50 to 61 still plan to be in work at age 63. The share of employed people in the Czech Republic with high expectations for their work activity at age 63 is even very similar to that in nearby Germany and other European countries, and for highly skilled occupations, even exceeds these countries in expectations.

Using longitudinal data, we show that most workers leave the labour market before the age of 63, despite their high expectations of working at this age. This is in contrast with results for other European countries as well as with the previous literature, which shows accordance between the expectations and realization of the entry into retirement (Chan & Stevenson, 2004). We further observe unplanned labour market exit for both women and men, for high- and low-skilled groups of workers, and for all educational groups. On the other hand, in terms of subjective health issues, older Czech workers are generally no worse off than their German peers. In terms of health status, the only difference is in the level of obesity in the older population, which has been increasing significantly in the Czech Republic recently (Pertold & Šatava, 2018), but it still does not explain differences in retirement behaviour.

Based on these findings, we tested whether differences between countries in unplanned retirement can be explained by differences in some observed variables. The previous literature names several factors affecting the decision to retire, such as health, poor working conditions, or the statutory retirement age (Bockerman & Ilmakunnas, 2020; Jones et al, 2010). Our findings show that the only factor that can partially explain differences in unplanned retirements is the age of expected retirement eligibility. On the contrary, subjective perceptions of health status, educational structure of workers, or occupational structure do not have an impact on explaining international differences in unplanned retirement in the Czech Republic, or in other countries. Thus, it can be concluded that older workers in the Czech Republic reassess their previous plans and retire just as they become eligible. This behaviour does not change, even despite contrary prior expectations. The age of retirement eligibility also explained a significant part of unplanned retirements in France and Italy. This is probably due to the comparably lower expected age of retirement eligibility: 60 in France and 62 in Italy.

A limitation of our study is that we do not observe all possible characteristics that may cause cross-country differences in unplanned retirement. On the other hand, we do observe many variables that are normally not observed in similar type of data set. We thus believe that we provide strong, but still suggestive, evidence, that an expected statutory retirement age is a strong push factor affecting the exit from the labour market.

Considering policy implications, one of the ways in which the government can respond to rapid and early exits from the labour market is by raising the retirement age. This increase would in turn affect workers' expectations of the age at which they become eligible for a retirement pension. Another, less socially problematic step is a higher pension bonification due to a longer working career (Riedel et al., 2015). Furthermore, the Czech Republic is known for its small share of part-time workers, which is reflected in the labour market situation of older people, who are faced with the choice of either working full-time or not working at all. This is likely to be reflected in their rapid exit from the labour market. Lower taxation of part-time work or subsidies to support part-time work could help to keep older people at work. Overall, the demographic situation will force the government to take these measures, which should lead to higher labour market participation of older people.

Data Set

SHARE Waves 1 (Börsch-Supan, 2020a); 2 (Börsch-Supan, 2020b); 4 (Börsch-Supan, 2020c); 5 (Börsch-Supan, 2020d); 6 (Börsch-Supan, 2020e); and 7 (Börsch-Supan, 2020f).

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P01_AG08291, P30_ AG12815, R21_AG025169, Y1-AG-4553-01, IAG_BSR06-11, OGHA_04-064, HHSN271201300071C) and from various national funding sources is gratefully acknowledged (see www.share-project.org). This work was supported by the Ministry of Education, Youth and Sports of the Czech Republic through the project SHARE-CZ+ (CZ.02.1.01/0.0/0.0/16_013/0001740).

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Appendix A1: Model

Model: The Realization of Expectations to Work

Below, we present in greater detail the model of the non-realization of the expectation to work at the age of 63 and its comparison across European countries. Only respondents who indicated that they expect to be working at age 63 enter the model. We use the least squares method to estimate the model.

Differences in unrealized expectations of working at the age 63 across European countries are described by the baseline model,

$$Y_{ict} = \alpha + \beta_c Country_c + \beta_t Year_t + \varepsilon_{ict}, \quad \text{(P1)}$$

where Y is a binary variable equal to one when the respondent retired conditional on his previous high expectations of working for respondent *i* in country *c* and at time t; *Country* is a vector of binary variables equal to one for each country (except for two countries—Sweden and Denmark—which form our reference group), and *Year* is a vector of binary variables for each year in which the data were collected (i.e., 2007, 2011, 2013, 2015, and 2017). By adding binary variables for each wave of SHARE testing, we control for possible changes in the conditions and parameters of retirement during the period studied.

Subsequently, we try to explain the estimated differences from model (P1), as found in the existing literature, based on three factors: education and type of employment, health status, and expected retirement age. We first add education and type of employment to the model (P1), and thus estimate the model,

$$Y_{ict} = \alpha + \beta_c Country_c + \beta_t Year_t + \gamma_{ic}^1 Education_{ic} + \gamma_{ic}^2 Occupation_{ic} + \varepsilon_{ict}, \quad \text{(P2)}$$

where *Education* is the highest level of education attained by the respondent and *Occupation* is the type of the respondent's last job (based on ISCO code).

In model (P2), we further control for the health status of the respondent,

$$Y_{ict} = \alpha + \beta_c Country_c + \beta_t Year_t + \gamma_{ic}^1 Education_{ic} + \gamma_{ic}^2 Occupation_{ic} + +\gamma_{ic}^3 Health_{ic} + \varepsilon_{ict}, \quad \text{(P3)}$$

where *Health* is a binary variable equal to one for those respondents who experience some health limitation in their daily activities.

In the last model, we then control for the expected retirement age of the respondent (i.e., the age of eligibility for an old-age pension), based on the *Retirement Age* variable, and estimate the regression equation,

$$Y_{ict} = \alpha + \beta_c Country_c + \beta_t Year_t + \gamma_{ic}^1 Education_{ic} + \gamma_{ic}^2 Occupation_{ic} + +\gamma_{ic}^3 Health_{ic} + \varepsilon_{ict}. \quad \text{(P3)}$$

The results of these models are shown in Table 2.

Appendix A2

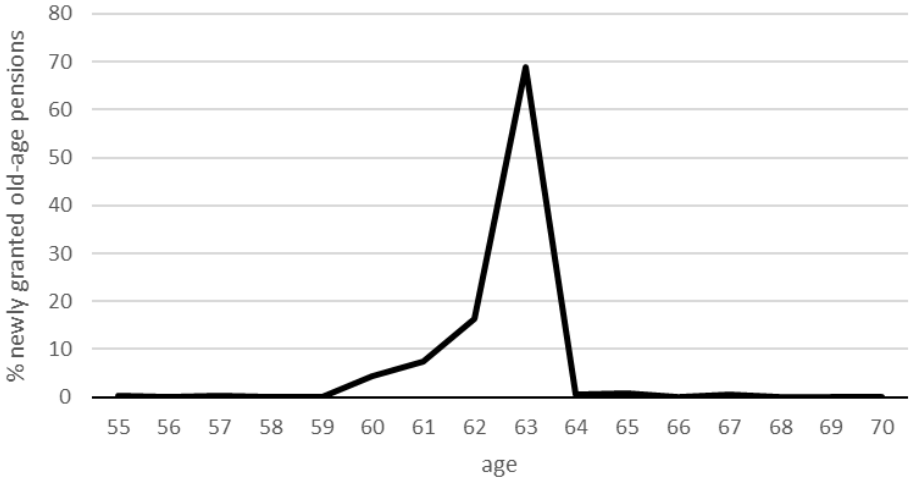

Figure A1. Share of Age Groups of Men in Newly Granted Old-age Pensions, Year 2018 (Czech Republic)
Note: Figure values are expressed for regular and early retirement
Source: Own calculations based on the statistical yearbook (CSSA)

Table A1. Descriptive Statistics, All Countries

	Germany	Czechia	Sweden	Denmark	Italy	Spain	France	Belgium	The Netherlands
Average expectations of working at the age of 63 (%)	38.96	45.26	51.93	41.89	41.13	55.44	17.90	22.03	19.61
	(41.67)	(40.45)	(41.00)	(41.32)	(40.61)	(38.69)	(31.51)	(34.56)	(33.85)
Share of respondents with high expectations of working (%)	30.46	34.38	44.13	34.08	31	43.65	11.28	15.26	15.22
	(46.05)	(47.53)	(49.68)	(47.42)	(46.29)	(49.64)	(31.65)	(35.98)	(35.96)
Share of employed	0.438	0.185	0.667	0.474	0.367	0.504	0.160	0.225	0.280
	(0.496)	(0.389)	(0.471)	(0.500)	(0.482)	(0.500)	(0.367)	(0.418)	(0.450)
White-collar occupation	0.734	0.582	0.824	0.797	0.582	0.528	0.701	0.707	0.783
	(0.442)	(0.494)	(0.381)	(0.402)	(0.494)	(0.500)	(0.458)	(0.455)	(0.413)
Primary education	0	0.0770	0.0721	0.0379	0.242	0.354	0.212	0.100	0.0676
	(0)	(0.267)	(0.259)	(0.191)	(0.428)	(0.479)	(0.409)	(0.301)	(0.251)
Lower secondary education	0.0761	0.320	0.165	0.0702	0.243	0.268	0.0793	0.219	0.321
	(0.265)	(0.467)	(0.371)	(0.256)	(0.429)	(0.443)	(0.270)	(0.414)	(0.468)
Higher secondary education	0.468	0.427	0.296	0.383	0.323	0.172	0.405	0.317	0.266
	(0.499)	(0.495)	(0.457)	(0.486)	(0.468)	(0.377)	(0.491)	(0.465)	(0.442)
Tertiary education	0.456	0.177	0.467	0.509	0.192	0.206	0.304	0.364	0.345
	(0.498)	(0.382)	(0.499)	(0.500)	(0.394)	(0.405)	(0.460)	(0.481)	(0.476)
Expected retirement age	63.7 (2.08)	61.2 (2.19)	64.2 (2.00)	65.4 (1.26)	62 (3.31)	64 (2.67)	60 (2.43)	62.3 (2.77)	65.05 (1.67)
Good health	0.423	0.454	0.559	0.532	0.438	0.420	0.492	0.543	0.754
	(0.494)	(0.498)	(0.497)	(0.499)	(0.497)	(0.494)	(0.500)	(0.498)	(0.431)
Observations	788	701	818	898	600	559	807	1055	414

Table A2. Differences in Unplanned Retirement Across Countries Compared to Sweden and Possible Factors That Explain These Differences (Probit Estimation of Main Model).

Probit	(1)	(2)	(3)	(4)
Czech Republic	1.143***	1.054***	1.035***	0.658***
	(0.082)	(0.084)	(0.085)	(0.092)
Germany	0.302***	0.341***	0.316***	0.259***
	(0.084)	(0.086)	(0.087)	(0.088)
Denmark	0.036	0.050	0.038	0.119
	(0.083)	(0.084)	(0.084)	(0.085)
Italy	0.510***	0.377***	0.348***	0.151
	(0.096)	(0.098)	(0.099)	(0.102)
Spain	0.294***	0.107	0.071	0.068
	(0.092)	(0.098)	(0.098)	(0.100)
France	0.746***	0.691***	0.673***	0.347***
	(0.106)	(0.108)	(0.108)	(0.115)
Belgium	0.478***	0.505***	0.495***	0.414***
	(0.094)	(0.095)	(0.095)	(0.097)
The Netherlands	0.298**	0.288**	0.335**	0.407***
	(0.146)	(0.146)	(0.147)	(0.147)
Lower secondary education		-0.166*	-0.184*	-0.195*
		(0.100)	(0.100)	(0.102)
Higher secondary education		-0.235**	-0.252***	-0.266***
		(0.095)	(0.096)	(0.097)
Tertiary education		-0.549***	-0.559***	-0.523***
		(0.099)	(0.099)	(0.101)
White-collar occupation		-0.103*	-0.102*	-0.113*
		(0.058)	(0.058)	(0.059)
Good health			-0.214***	-0.204***
			(0.048)	(0.048)
Expected retirement age				-0.154***
				(0.014)
_cons	-0.817***	-0.381***	-0.252**	9.653***
	(0.057)	(0.102)	(0.107)	(0.935)
N	3255	3255	3255	3255
R^2				

Note: Standard errors in parentheses.

$^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$.

Table A3. Differences in Unplanned Retirement Across Countries Compared to Sweden and Possible Factors That Explain These Differences (LPM)

	(1)	(2)	(3)	(4)
Czech Republic	0.421***	0.383***	0.374***	0.245***
	(0.028)	(0.028)	(0.028)	(0.030)
Germany	0.096***	0.107***	0.097***	0.077***
	(0.028)	(0.028)	(0.028)	(0.028)
Denmark	0.010	0.013	0.008	0.030
	(0.027)	(0.026)	(0.026)	(0.026)
Italy	0.173***	0.123***	0.112***	0.053
	(0.033)	(0.033)	(0.033)	(0.033)
Spain	0.094***	0.026	0.014	0.013
	(0.031)	(0.032)	(0.032)	(0.032)
France	0.265***	0.240***	0.233***	0.127***
	(0.037)	(0.037)	(0.037)	(0.037)
Belgium	0.160***	0.166***	0.161***	0.134***
	(0.032)	(0.032)	(0.032)	(0.031)
The Netherlands	0.095*	0.087*	0.102**	0.117**
	(0.050)	(0.049)	(0.049)	(0.048)
Lower secondary education		-0.060*	-0.066*	-0.060*
		(0.035)	(0.035)	(0.034)
Higher secondary Education		-0.086***	-0.092***	-0.085***
		(0.033)	(0.033)	(0.032)
Tertiary education		-0.189***	-0.191***	-0.166***
		(0.034)	(0.034)	(0.033)
White-collar occupation		-0.038*	-0.038*	-0.041**
		(0.020)	(0.020)	(0.020)
Good health			-0.071***	-0.067***
			(0.016)	(0.016)
Expected retirement age				-0.049***
				(0.004)
_cons	0.207***	0.367***	0.412***	3.537***
	(0.018)	(0.035)	(0.036)	(0.280)
N	3255	3255	3255	3255
R^2	0.086	0.107	0.112	0.145

Note: Standard errors in parentheses.

$^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$.