Article

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The Older Unemployed Worker's Conundrum in the Czech Republic and Slovakia: Find a Job or Leave the Labour Market?[1]

*Vladislav FLEK – Martin HÁLA – Martina MYSÍKOVÁ**

Abstract

We analyse labour market prospects of unemployed Czechs and Slovaks aged 50 – 65. Those aged 55 and over face the most diminished opportunities for re-employment and the strongest incentives to withdraw from the labour force. Women and individuals in poor health also fall into strongly disadvantaged/ discouraged subcategories. Education levels or regional economic conditions do not significantly affect the re-employment odds. While these trends are similar in both countries, older Czechs face a lower probability of remaining unemployed, due to more frequent use of labour force withdrawals as an exit from unemployment. More frequent withdrawals occur in all subcategories of older unemployed Czechs, and can be observed after any comparable unemployment duration. The probability of re-employment of older Czechs and Slovaks is equivalent early in an unemployment spell, but becomes higher for older Slovaks after the fifth month of unemployment, even for those aged 60+. We suspect that the higher pensionable age in the Czech Republic is unlikely to function as a strong push factor to return to employment. We also point to the shorter duration of unemployment benefits for older Slovaks, which may encourage more job-finding effort.

Keywords: *competing-risks models; cumulative incidence functions; older-age unemployment; probabilities of leaving unemployment; survival analysis*

JEL Classification: C34, C41, J14, J26, J64

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Introduction

This paper focuses on the transitions of unemployed Czechs and Slovaks aged 50 – 65 into re-employment or inactivity over the period 2004 – 2016. Knowledge about factors influencing their alternative pathways from unemployment is instructive for the design of labour market institutions and policies, and also for efforts to tackle the projected declines in economically active populations. The current policy emphasis is on extending working lives, and an increasing fraction of older individuals thus remains dependent on the labour market. However, the problems linked with their employability might undermine the desired effects of such policies.

There is an overall consensus in the literature that the probability of finding a job diminishes as unemployed workers age (see, e.g., Martin, 2018, for an overview of results for OECD countries). Among others, Guzi (2014), Baboš and Lubyová (2016), and Flek, Hála and Mysíková (2018) confirm this observation specifically for the Czech Republic and/or Slovakia. A related problem which has been relatively less studied concerns the factors which determine job-finding prospects *within* the group of older unemployed workers. This assumes estimating the impacts of individual, household, regional, and other characteristics which affect the chances of older unemployed workers to return to employment.

Flek, Hála and Mysíková (2020) analyse the re-employment perspectives of older unemployed workers in central European countries, including the Czech Republic and Slovakia. The duration of unemployment appears to be the major determinant of job-finding, while the impact of explanatory covariates (gender, education, household characteristics, etc.) is less robust and/or uniform. However, their main emphasis is on comparisons of job-finding prospects *between* the older and prime-age groups of unemployed individuals. For simplicity, the unemployment-inactivity transition channel is omitted in their comparisons.

In contrast, this paper concentrates exclusively on older unemployed workers. This requires us to account explicitly for the fact that re-employment or inactivity are alternative labour market destinations. That is why this study does not apply a *single-risk* framework focusing exclusively on transitions from unemployment to re-employment. Instead, we simultaneously estimate the determinants of re-employment and withdrawal probabilities using the *competing-risks* model framework (Fine and Gray, 1999).

Our aims are broadly rooted in the option value theory (Stock and Wise, 1990), according to which an older individual compares the expected utility from working and from leaving the workforce. Returning to employment is often associated with opportunities to increase future income, savings and pensions, and to develop acquired human capital, economic status, professional interactions

and social networks. However, the option value of re-employment may be offset by health problems, the need to be a family caregiver, or simply because of a desire to enjoy leisure. Older unemployed workers also frequently encounter frustrations when searching for a good quality job, and from stigmatisation by potential employers. This often leads to declines in their job search efforts, to disproportionate exposure to long-term unemployment compared to younger jobseekers, and ultimately to labour market marginalisation. As a result, some older unemployed workers may find that it is rational or simply inevitable that they will remain unemployed, and subsequently leave the workforce.

Evidence from western Europe suggests that the re-employment incentives of workers who are approaching pensionable age are additionally diminished by long periods of provision of unemployment benefits, thus discouraging them from active job searches, and enabling them to bridge the time until they are eligible for withdrawal (Lalive and Zweimüller, 2004; Tatsiramos, 2010). In contrast, shorter provision of unemployment benefits increases the re-employment probability of older unemployed workers (Kyyrä and Pesola, 2017). Analogous positive employment effects were also found after increases in the (early) retirement age (Giesecke and Kind, 2013).

The Czech Republic and Slovakia differ to a certain extent in labour market performance, policies, institutions, and in pensionable age (OECD, 2018a; 2018b). Do these national specificities co-exist with the different determinants of transitioning to either re-employment or to inactivity of older Czech and Slovak unemployed workers? This is the first research question we aim to address. Our model framework makes it possible to also establish the mutual proportions of the two probabilities of leaving unemployment in each country (and within the specific subcategories of older individuals), after any given length of unemployment spell.

This enables us to also address the following research questions: In which country are re-employment prospects of older unemployed workers relatively more favourable? Where are withdrawal options relatively more frequent? How many older individuals fail to find their way out of unemployment, and what are their characteristics?

We explore most recent longitudinal datasets from the European Union Statistics on Income and Living Conditions (EU-SILC). A broader country focus is less feasible for us at this stage, not least because of the complexity of the analysis and space limitations. The next section of this paper discusses key empirical and institutional issues which are relevant to the older workforce. Subsequently, we explain the ways in which we explore the EU-SILC datasets and formulate our estimation strategy; then we report the results. The last section concludes.

1. Institutional and Empirical Context

As with virtually all developed countries, the Czech Republic and Slovakia have been facing ageing populations, which is evidenced in rising demographic old-age dependency ratios (numbers of individuals aged 65 and over, relative to the working age population 20 – 64). These ratios are expected to more than double by 2050, and should then amount to some 60% in the Czech Republic and to 55% in Slovakia, respectively (OECD, 2017). Both countries have undertaken measures to address the challenges implied by ageing populations. For pensions, this includes increasing the normal retirement age, aligning the retirement ages of men and women, increasing the minimum length of insurance contributions, and making early retirement options less beneficial and/or feasible.

The legal rules for setting the normal retirement age[2] (and the design of pension systems in general) have been subject to numerous changes. Eventually, retirement age in 2016 reached 63 for Czech men and 62.3 for Czech women, with further annual (gender-specific) increases, so that the retirement age can be unified at 65 for all those born after 1971. Early retirement is an option three years prior to the normal retirement age. In Slovakia, the normal retirement age is already uniform for men and women, and is indexed to life expectancy. In 2016, it was 62. In the next two years, it increased by 76 days and 139 days, respectively. Additional increases effective from January 2019 are envisaged for those born between 1957 and 1960. Their normal retirement age should range between 62.6 for those born in 1957, and 63.2 for those born in 1960. Early retirement is allowed two years before the normal retirement age.

T a b l e 1

Average Effective Age of Labour Market Exit[*)]

	Czech Republic		**Slovakia**		**OECD**		**EU-28**	
	Men	Women	Men	Women	Men	Women	Men	Women
2004	61.4	58.3	59.7	56.0	63.1	61.5	61.6	59.9
2016	62.5	60.8	60.8	59.6	65.0	63.5	63.3	62.0

Note: [*)] A weighted average of (net) withdrawals from the labour market at different ages over a 5-year period for workers initially aged 40 and over.

Source: OECD pension statistics <https://www.oecd.org/els/emp/average-effective-age-of-retirement.htm>.

Table 1 displays evolutions of the average effective age of labour market exit between 2004 and 2016, i.e., over the period covered by our analysis. Czechs and Slovaks tend to remain longer on the labour market, a tendency which concerns women's participation relatively more. Nonetheless, both countries continue

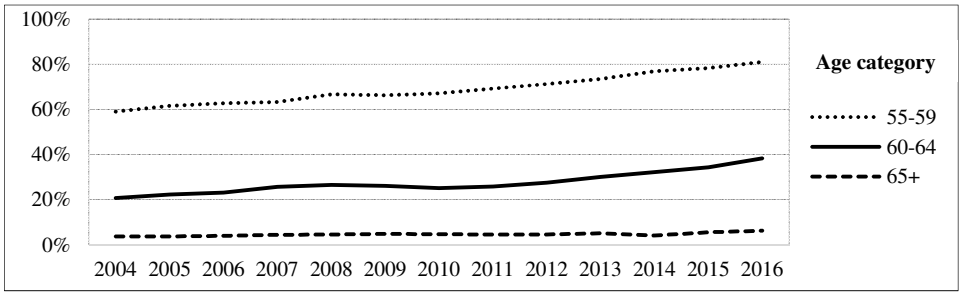
[2] The normal retirement age is defined as the age at which an individual can retire without any reduction to their pension, having had a full career from age 20 (OECD, 2017).

to lag behind the respective OECD and EU averages. This applies to Slovakia in particular, which recorded the lowest average effective age of female labour market exit in 2016 of all OECD countries (the average effective exit age of Slovak men was the second lowest, next to France).

Working longer is associated with increases in the employment rates of older Czech and Slovak populations (Figures 1 – 2).[3] But the initial gap between the employment rate of the 55 – 59 group and the employment rates of those aged 60+ further widened between 2004 and 2016 in both countries. Simultaneously, the employment rates and effective exit ages of the oldest Czech and Slovak groups remained lower in comparison with some other European Union countries with similar projected degrees of population ageing (Table 2).

F i g u r e 1

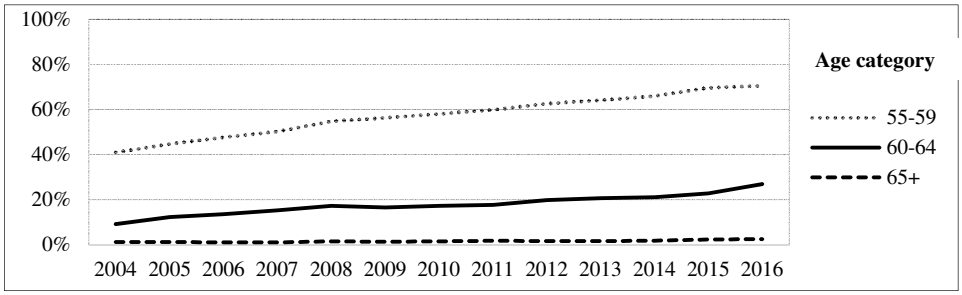
Employment Rates of Older Population Groups in the Czech Republic[*)]



Note: [*)] In per cent (the number of employed people relative to the total population of the same age category).
Source: Czech Statistical Office.

F i g u r e 2

Employment Rates of Older Population Groups in Slovakia [*)]



Note: [*)] In per cent (the number of employed people relative to the total population of the same age category).
Source: Slovstat.

[3] The latter trend cannot be attributed solely to measures aimed at postponing the pensionable age. Martin (2018) argues that the overall rises in employment rates of older age cohorts have also occurred due to their rising educational attainments, improvements in health status, and due to the wealth effect of working longer.

T a b l e 2

Projected Old-Age Dependency Ratios, Average Effective Age of Labour Market Exit, and Employment Rates of Older Population Groups in Selected EU Countries

	Old-age dependency ratio (%) (2050)	**Average effective age of labour market exit** (2016)		**Employment rate** (%) (2016)	
		Men	Women	60 – 64	65 – 69
Estonia	56.3	64.8	65.3	55.0	31.8
Germany	59.2	63.3	63.2	56.0	15.5
Netherlands	53.0	63.5	62.3	53.0	13.1
Czech Republic	58.9	62.5	60.8	38.3	12.2
Slovakia	53.9	60.8	59.5	27.0	5.6

Source: OECD (2017, pp. 21; 24; 123).

A range of factors drive these trends: The incidence of part-time work in the 55 – 64 category is, in both countries, some three times lower than the EU-28 or OECD averages. Older Czechs and Slovaks also suffer from less job stability, as proxied by job retention rates (i.e., by the numbers of all employees currently aged 60 – 64 with job tenure of five years or more, relative to all employees aged 55 – 59 five years prior). Further, both countries lagged considerably behind EU averages in shares of the 55 – 64 age group with tertiary education, and in participation of this group in job training (OECD, 2018a; 2018b).

T a b l e 3

Unemployment Rates: Age Category 55 – 64[*)]

	Czech Republic	**Slovakia**	**EU-28**	**OECD**
2006	5.3	9.7	6.1	4.3
2016	3.8	9.0	6.4	4.6

Note: [*)] in per cent, as the number of unemployed people relative to the total labour force of the same age category.

Source: OECD (2018a, p. 11; 2018b, p. 12).

Czech and Slovak unemployment rates of older populations occupy different positions relative to the EU-28 and OECD averages (Table 3). However, the relative incidence of long-term unemployment (lasting more than one year) within this age category of unemployed individuals is almost equally concerning in both countries: In the Czech Republic (Slovakia) it amounted to 55.4% (62.2%) in 2016. Czech registered jobseekers aged 50 – 55 can spend eight months on unemployment benefits, as compared to five months for younger workers. Those aged over 55 can rely on 11 months of benefits. In contrast, the duration of unemployment benefits in Slovakia does not differ between age groups and is set at six months. Between 2006 and 2017, some categories of registered jobseekers, such as those with previous temporary contracts, were entitled just to four months of unemployment benefits.

Broader international comparisons presented in this section suggest that older Czechs and Slovaks tend to leave labour markets relatively early. Their employment rates are relatively low, as are their job-retention rates and their involvement in training programmes and part-time work. The exposure of older unemployed individuals to long-term unemployment is above 50%. In spite of these common trends, two institutional differences are worth noting: The normal retirement age is consistently higher in the Czech Republic, and provision of unemployment benefits for older registered jobseekers is considerably shorter in Slovakia. This is not to say that the two countries do not differ in more institutional, policy-related and socio-economic respects, which may affect the labour market prospects of older unemployed workers – see, e.g., OECD (2018a; 2018b). However, it is not feasible to consider all potential aspects explicitly at this stage of research, not least because of space limitations.

2. Data Organisation and Estimation Strategy

EU-SILC is an annual survey in which household members aged 16 and over are interviewed for four consecutive years. Its longitudinal version is designed as a four-year rotational panel and is harmonised by Eurostat. The data include information on the monthly economic activity (employment, unemployment, inactivity) of respondents, which is reported retrospectively for each calendar year. Our data selection is limited to individuals who participated continually for all four consecutive years and who experienced at least one unemployment episode during that period. Their ages range from 50 at the beginning of the four-year period to 53 – 65 at the end. We pool all four-year datasets available to us from the longitudinal EU-SILC March 2019 version, to obtain the maximum possible sample sizes. Slovak data for 2016 are not included in this version. Our dataset thus consists of longitudinal EU-SILC 2008 – 2017 for the Czech Republic (CZ), and of longitudinal EU-SILC 2008 – 2016 for Slovakia (SK). It contains 10 (9) four-year national datasets covering the period from January 2004 to December 2016 (2015).

Each respondent remains in the survey for 48 consecutive months and may experience multiple unemployment spells. That is why an unemployment spell, and not an individual, is our unit of analysis.[4] Each spell either terminates in an exit from unemployment (*via* employment or inactivity), or is naturally right-censored if the individual is unemployed in the last month of observation. Individuals

[4] When discussing our results later in the text, we sometimes refer for simplicity to an individual, but this should always be interpreted as above.

who are unemployed in the first month of observation are dropped from the samples, to avoid inclusion of left-censored spells of unknown durations beginning prior to the time frame we study. After excluding the missing values, the final sample sizes consist of 896 (358) Czech (Slovak) unemployment spells (Table 4).

T a b l e 4

Descriptive Statistics

	CZ				SK			
	Mean	**Std. Dev.**	**Min**	**Max**	**Mean**	**Std. Dev.**	**Min**	**Max**
Male	0.544	0.498	0	1	0.547	0.498	0	1
Female	0.456	0.498	0	1	0.453	0.498	0	1
Age 50 – 54	0.280	0.449	0	1	0.380	0.486	0	1
Age 55 – 59	0.538	0.499	0	1	0.522	0.500	0	1
Age 60 – 65	0.182	0.386	0	1	0.098	0.297	0	1
Bad health	0.184	0.388	0	1	0.190	0.393	0	1
Good health	0.816	0.388	0	1	0.810	0.393	0	1
Primary education	0.173	0.379	0	1	0.101	0.301	0	1
Secondary education	0.775	0.418	0	1	0.793	0.406	0	1
Tertiary education	0.051	0.221	0	1	0.106	0.308	0	1
Number of dependent children	0.092	0.396	0	5	0.182	0.511	0	3
Number of adult household members	2.268	0.944	1	7	3.128	1.335	1	8
HH income – low	0.395	0.489	0	1	0.377	0.485	0	1
HH income – below median	0.212	0.409	0	1	0.184	0.388	0	1
HH income – above median	0.151	0.358	0	1	0.179	0.384	0	1
HH income – high	0.242	0.429	0	1	0.260	0.439	0	1
Home owner	0.788	0.409	0	1	0.908	0.290	0	1
Mortgage and tenants	0.212	0.409	0	1	0.092	0.290	0	1
Densely populated area	0.210	0.407	0	1	0.232	0.423	0	1
Medium populated area	0.272	0.445	0	1	0.366	0.482	0	1
Thinly populated area	0.518	0.500	0	1	0.402	0.491	0	1
Regional GDP per capita growth	2.666	4.134	–7.8	11.5	4.013	5.516	–9.9	18.3
Regional employment rate (age 15 – 64)	65.479	2.948	59.3	74.8	59.550	4.503	51.5	72.1
N (unemployment spells)	896				358			

Source: Longitudinal EU-SILC 2008 – 2017 (CZ); 2008 – 2016 (SK); authors' computations.

We include the following explanatory covariates:[5] A gender dummy (*ref.* female); age dummies for 55 – 59 and 60 – 65 (*ref.* 50 – 54); and a dummy for bad + very bad health (*ref.* very good, good + fair).[6] It is reasonable to estimate the gender-based gaps in re-employment and withdrawal odds, as older men still appear to be more likely to be forced to remain longer on labour markets. Further, one can hypothesise that an older age is associated with a negative influence on re-employment prospects, while the opposite should hold for its impact on withdrawals. Health conditions should also affect transitions to re-employment or out of the workforce.

[5] The covariates are time-invariant, i.e., they correspond to the end of each unemployment spell.

[6] This dummy variable stems from a question on perceived general health. In the Czech Republic, it is burdened by a relatively high item non-response, i.e., 12% of unemployment spells had to be excluded.

Dummies for primary and tertiary education (*ref.* secondary education, ISCED 0 – 2) capture the effects of education on re-employment and/or withdrawal prospects. Higher education is commonly associated with greater human capital endowment, and therefore with higher opportunity costs of being jobless (or inactive). However, the positive effect of higher education on firms' demand for older unemployed workers is less obvious.

We consider household (HH) characteristics, including the number of children up to 15 years of age living in the household; the number of adult household members; the household's disposable annual income; and the household's financial obligations. The presence of dependent children in a household may motivate more intensive job-searches. In our specific case, however, these are frequently likely to be grandchildren, whose presence in a household may instead positively affect the incentives of older unemployed workers to withdraw from the workforce to care for the grandchildren. The results would show which of these two possible effects prevails, if any.

As for the numbers of adult household members, one can hypothesise that an older unemployed worker living in a larger household may feel less pushed to return to work. Relative household income data enables us to link the individual's re-employment or withdrawal incentives with the overall financial and social status of their households.[7] Finally, home ownership (*ref.* owners paying mortgage and tenants) may negatively affect re-employment odds (and positively withdrawal odds), as the household budget is less burdened.[8]

In order to account for intra-country regional specificities, we control for densely-populated and intermediate areas (*ref.* thinly-populated areas). We also control for regional GDP per capita growth (in PPS, Eurostat database), and for

[7] We consider the national median of equivalised household disposable income (EU-SILC variable HX090) as a benchmark, and create four categories of relative household equivalised incomes: "HH income – low" (less than 80% of national median); "HH income – below median" (80 – 100% of national median); "HH income – above median" (100 – 120% of national median); and (*ref.*) "HH income – high" (more than 120% of national median). The categories of relative household incomes are wide enough to serve simultaneously as a proxy for the total household economic activity/work intensity. The reason we do not deal explicitly with the activity/intensity indicators is that explanatory covariates involved in our estimates are treated as time-invariant, while the total household work intensity may vary considerably during any individual unemployment episode.

[8] Some potentially relevant characteristics remain omitted from our analysis. For instance, we find it difficult to control explicitly for the retirement age of each individual. This concerns women specifically, as the EU-SILC data do not contain the numbers of children raised in the past. Instead, we construct three age bands, to see how the results change with respondent's age. We are also limited in considering the length of the last employment/inactivity spell prior to becoming unemployed – this information is missing by definition at the initial stages of observations in our four-year panels. Analogously, we omit the ISCO classifications of types of (previous) employment, as this information is missing for non-employed Czechs between 2010 – 2012.

the regional employment rate (Eurostat database from Labour Force Surveys). Regions are defined at the NUTS-2 level (eight regions in the Czech Republic; four in Slovakia). One can assume that labour demand in urban agglomerations is presumably higher than in thinly populated areas. The same is likely to apply to regions with increasing economic wealth and/or high overall employment rates.

For modelling the covariate effects on the probabilities of transitioning from unemployment to either re-employment or to inactivity, we utilise the concept of sub-distribution hazard (Fine and Gray, 1999; see also Hinchlife and Lambert, 2013; or Mozumder, Rutherford and Lambert, 2017). In this scenario, we define two sub-distribution hazard rates:

$$h_1(t) = \lim_{\Delta t \to 0} \frac{\Pr(\left[\left(t \le T < t + \Delta t\right) \cap E\right] \middle| \left[T > t \cup \left(T \le t \cap I\right)\right])}{\Delta t}$$
$$h_2(t) = \lim_{\Delta t \to 0} \frac{\Pr(\left[\left(t \le T < t + \Delta t\right) \cap I\right] \middle| \left[T > t \cup \left(T \le t \cap E\right)\right])}{\Delta t} \tag{1}$$

where the random variable T represents observed survival time, i.e., duration of a randomly chosen unemployment spell in months. Random events E and I mean that the spell terminates with a movement into re-employment or inactivity, respectively. The interpretation of these sub-distribution hazard rates is as follows: $h_1(t)$ represents the theoretical instantaneous rate of transitioning from unemployment to employment of all workers who are either still unemployed at time t, or have already transitioned to inactivity. The meaning of $h_2(t)$ is analogous. To estimate the covariate effects, both sub-distribution hazard rates h_k (where $k \in \{1,\ 2\}$) are assumed to take the following form:

$$h_k(t) = h_{0k}(t)\ \exp(\beta_k x) \tag{2}$$

where the function $h_{0k}(t)$ stands for the baseline sub-hazard rate, representing the sub-distribution hazard rate from formula (1) at the baseline level of explanatory covariates. The exponent then expresses a linear combination of parameters to be estimated (β_k), and the covariates in the column vector (x).

We fit the model by using the partial maximum likelihood method (Fine and Gray, 1999, pp. 497 – 502).[9] For the sake of better interpretation, the estimated

[9] We do not adopt parametric models when estimating the baseline subhazard rates h_{0k}. This is intended to avoid the misspecification of the underlying baseline distribution, which might occur if we used, e.g., the Weibull model, which assumes that the baseline hazard is a monotonous function. Our results do not support such simple behaviour of baseline sub-hazard functions (the corresponding graphs are available from the authors upon request).

parameters β_k are transformed into sub-hazard ratios e^{β_k}. These sub-hazard ratios (SHRs) are reported in Tables 5 and 6, along with the p-values and 95% confidence intervals. For each explanatory covariate, the coefficients indicate, *ceteris paribus*, the relative odds of exiting unemployment and moving to another labour market status.[10] For instance, the odds of an unemployed older male of transitioning into re-employment are reported in per cent (relative to an older unemployed female), considering the risk set consisting of currently unemployed older individuals and of those who have already transitioned from unemployment to inactivity. For simplicity, later in the text we do not repeat the detailed description of the risk sets.

The results will identify the characteristics which *affect* the relative odds of returning to employment and/or to withdraw from the workforce. Note, however, that the estimated SHRs do not provide specific information about the relative *incidence* of either type of outflows from unemployment after any given duration of unemployment spell, or about the relative exposure to long-term unemployment. That is why we estimate the following, cause-specific cumulative incidence functions (CIFs):

$$F_1(t) = \Pr\left([T < t] \cap E\right),\ F_2(t) = \Pr\left([T < t] \cap I\right) \tag{3}$$

where $F_1(t)$ stands for the probability that an unemployment spell terminates with a move into employment until time *t*. Analogously, $F_2(t)$ represents the probability of terminating the spell by exiting the workforce until time *t*. There is a direct link between the CIFs expressed in formula (3), and the corresponding sub-distribution hazard rates defined in formula (1):

$$F_k(t) = 1 - e^{-\Lambda_k(t)} \tag{4}$$

where $\Lambda_k(t) = \int_0^t h_k(\tau)\,d\tau$ is the cumulative sub-distribution hazard. Formula (4) makes it possible to estimate the functions F_k for a particular explanatory variable, controlled for the rest of the covariates. Each point on the CIF then denotes the probability of exiting from unemployment to the respective labour market destination, after any given length of unemployment spell (see Figure 4 in next section).

We also estimate the survival function $S(t)$, i.e., the probability that an unemployment spell does not terminate until time *t*:

[10] In purely technical terms, each SHR in Tables 5 and 6 represents a ratio between the sub-distribution hazard rate at a particular value of covariate, and at the baseline level of this covariate.

$$S(t) = \Pr(T \geq t) = 1 - F_1(t) - F_2(t) \tag{5}$$

As with the CIFs, these estimates are made repeatedly for each chosen explanatory variable, controlled for the rest of the covariates – see Figure 3 in Section 4. For econometric estimates presented in the following section we explore the above models, as implemented into STATA-15 routines *stset*, *stcrreg* and *stcurve*.

3. The Results

Tables 5 and 6 report that the odds are that an older unemployed male will outperform a female with the same characteristics significantly and robustly in re-employment. The corresponding figures (1.878:1 for the Czech Republic, and 1.740:1 for Slovakia) point to a lower gender-based gap in Slovakia.[11] An older unemployed man is also relatively less likely to withdraw from the workforce than an older unemployed woman (by some 60% less in both countries).

The re-employment odds of an unemployed worker aged 60 – 65 are almost 90% lower than those of a worker aged 50 – 54. The extremely robust and highly significant SHRs of transitioning from unemployment to inactivity simultaneously document their high degree of discouragement from further labour market participation.

However, the re-employment prospects of unemployed Czechs and Slovaks are already becoming rather gloomy from age 55, when they diminished by approximately 60%, relative to individuals aged 50 – 54. The opposite holds for transitions out of the workforce. Health status is also highly significant and robust in affecting the odds of exiting unemployment. In the Czech case, perceived poor health diminishes the odds of re-employment by some 55%, and around 40% in Slovakia. The corresponding SHRs of transitioning to inactivity are even more robust.

Education levels do not have any significant impact on the odds of re-employment or withdrawal. Some of the remaining explanatory covariates significantly affect only the odds of re-employment. Specifically, the presence of each additional adult household member reduces the re-employment odds of an older unemployed Czech by some 10%, thus signalling lower motivation to return to employment.[12] What matters in Slovakia is the number of dependent children, where each additional child increases the odds of re-employment by some 40%.

[11] These results can also be expressed in per cent: The re-employment odds of an older Czech (Slovak) unemployed man are higher by 87.8% (74%) than those of an older Czech (Slovak) unemployed women.

In the Czech Republic, an older unemployed worker who lives in a household in the lowest-income category has about 40% lower odds of re-employment relative to someone living in a household in the highest-income category. This effect is more pronounced in Slovakia, where it concerns households in the two bottom-income categories. Another Slovak specificity is that below-median household income significantly increases the odds of leaving the workforce, by some 90%. Home ownership reduces re-employment prospects in both countries by some 40%, relative to older unemployed workers who must make mortgage or rent payments.

Regional characteristics are prevailingly insignificant. The first exception concerns regional GDP per capita growth in Slovakia. However, the corresponding SHR value is too close to one for us to derive any related far-reaching conclusion. Second, the re-employment odds of an older unemployed Czech who lives in a densely populated area are about 25% lower than those of the one who lives in the thinly populated area. This can probably be explained by the relatively high numbers of commuters from less densely populated areas causing some crowding-out effect on older unemployed workers living in an urban agglomeration.

As for the gaps between the national survival curves observed in Figure 3, they indicate a higher probability of older unemployed workers remaining unemployed in Slovakia than in the Czech Republic. This applies not only to overall cross-country comparisons, but also to particular subcategories of older unemployed workers.[13] Note, however, that these gaps are nearly non-existent for shorter unemployment episodes.

The median unemployment spell of Czechs aged 50 – 65 lasts 11.1 months, as compared to 13.4 months of Slovaks. The analogous differences apply to cross-country comparisons of median unemployment durations of various subcategories of older unemployed workers. The fraction (or the probability) of those who have ultimately failed to find a way out of unemployment over the entire period analysed also differs between the countries: In the Czech Republic, persistent unemployment is 18.9%, and 23.8% in Slovakia. Older unemployed workers in poor health, women and those aged 55 – 59 in both countries are most exposed to prolonged unemployment.

[12] One can hypothesise that if the other adult household members are (prevailingly) employed, intra-household solidarity appears to provide an older unemployed individual with more material support, thereby reducing their re-employment incentives. If, in turn, more adults in the household are jobless, joblessness may be perceived as a normal state of affairs in the household, thus again diminishing re-employment incentives.

[13] We concentrate here only on age, gender, and health, as these characteristics proved to be most robust in affecting the exit odds from unemployment. Survival curves and cumulative incidence functions based on these characteristics are controlled for the impact of all the remaining covariates with which we dealt previously.

Table 5

The Sub-Hazard Ratios of Transitioning from Unemployment: The Czech Republic (2004 – 2016)

	Transition to employment						Transition to inactivity					
	SHR	Std. Err.	z	P>|z|	95% confidence interval		SHR	Std. Err.	z	P>|z|	95% confidence interval	
Male	1.878***	0.2107	5.620	0.000	1.507	2.340	0.385***	0.0617	–5.950	0.000	0.282	0.528
Age 55 – 59	0.411***	0.0450	–8.120	0.000	0.331	0.509	5.636***	1.2944	7.530	0.000	3.593	8.841
Age 60 – 65	0.103***	0.0247	–9.480	0.000	0.065	0.165	19.73***	5.7421	10.250	0.000	11.153	34.902
Poor health	0.457***	0.0747	–4.790	0.000	0.332	0.630	1.583***	0.2514	2.890	0.004	1.159	2.161
Primary education	0.892	0.1258	–0.810	0.416	0.676	1.176	1.088	0.1720	0.540	0.592	0.799	1.484
Tertiary education	0.945	0.2226	–0.240	0.811	0.596	1.500	1.404	0.3798	1.250	0.210	0.826	2.385
Number of dependent children	0.994	0.1728	–0.040	0.971	0.707	1.397	0.861	0.2246	–0.570	0.566	0.516	1.436
Number of adult household members	0.892*	0.0552	–1.840	0.065	0.790	1.007	1.043	0.0845	0.520	0.602	0.890	1.223
HH income – low	0.591***	0.0914	–3.400	0.001	0.437	0.800	1.034	0.2128	0.160	0.871	0.691	1.548
HH income – below median	0.830	0.1435	–1.080	0.282	0.592	1.165	1.107	0.2461	0.460	0.646	0.716	1.712
HH income – above median	0.910	0.1627	–0.530	0.599	0.641	1.292	1.126	0.2427	0.550	0.581	0.738	1.718
Home owner	0.621***	0.0701	–4.220	0.000	0.498	0.775	1.276	0.2224	1.400	0.161	0.907	1.796
Densely populated area	0.743**	0.1084	–2.040	0.042	0.558	0.989	1.238	0.2087	1.270	0.205	0.890	1.723
Medium populated area	0.870	0.1042	–1.160	0.246	0.688	1.100	1.185	0.1590	1.270	0.205	0.911	1.542
Regional GDP per capita growth	1.002	0.0320	0.070	0.947	0.941	1.067	0.971	0.0355	–0.810	0.416	0.903	1.043
Regional employment rate (age 15 – 64)	1.014	0.0226	0.610	0.544	0.970	1.059	1.012	0.0252	0.480	0.630	0.964	1.063
Log pseudolikelihood	–2 136.81						–1 572.09					
Wald chi squared	221.40						162.03					
Number of all unemployment spells	785											

Note: Significance codes: *** = 0.01; ** = 0.05; * = 0.1. Controlled for the year when the unemployment spell terminates.

Source: Longitudinal EU-SILC 2008 – 2017; authors' computations.

T a b l e 6

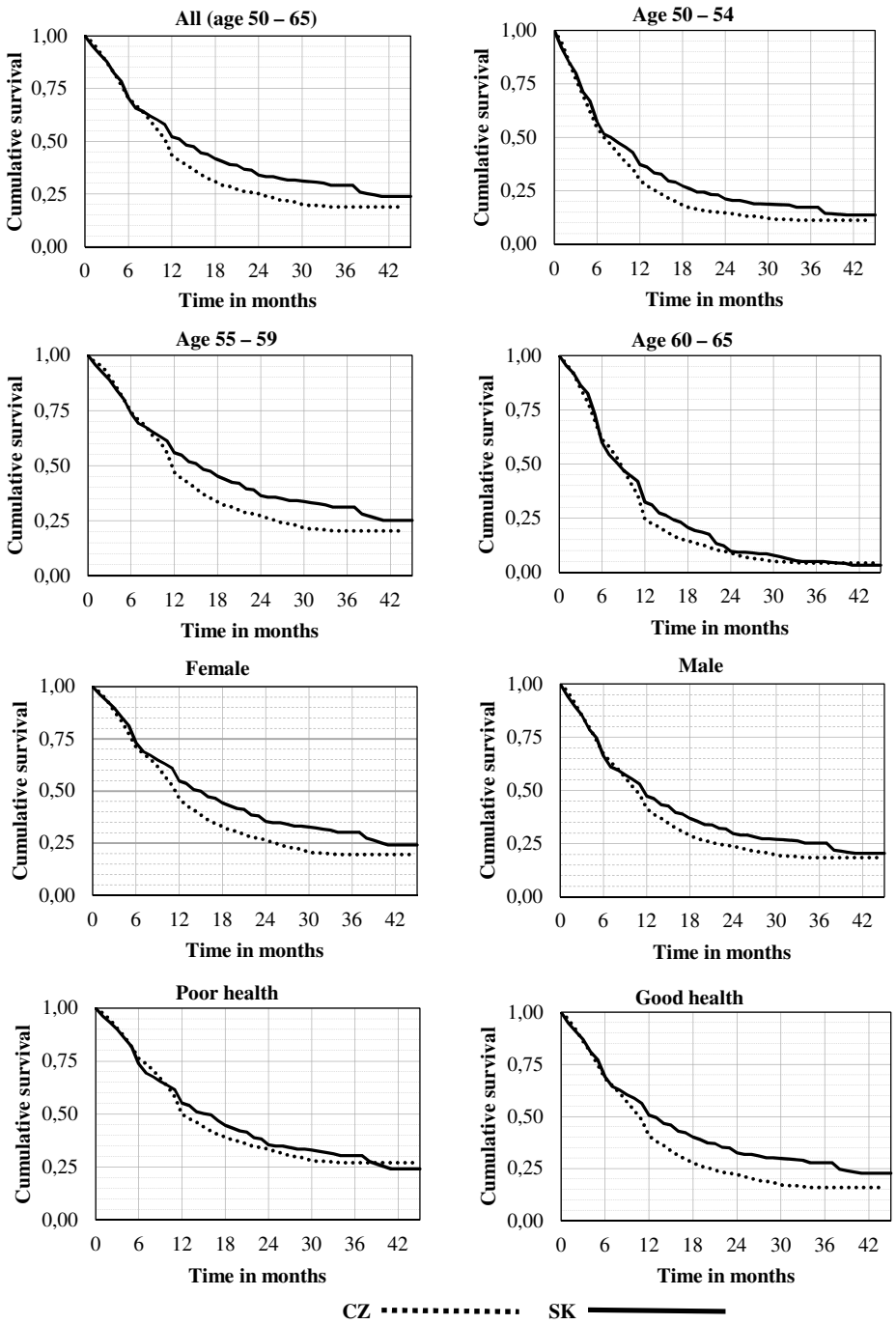
The Sub-Hazard Ratios of Transitioning from Unemployment: Slovakia (2004 – 2015)

	Transition to employment						Transition to inactivity					
	SHR	Std. Err.	z	P>|z|	95% confidence interval		SHR	Std. Err.	z	P>|z|	95% confidence interval	
Male	1.74***	0.2855	3.380	0.001	1.262	2.400	0.396***	0.1070	–3.430	0.001	0.233	0.672
Age 55 – 59	0.44***	0.0715	–5.060	0.000	0.320	0.605	4.985***	2.0051	3.990	0.000	2.266	10.966
Age 60 – 65	0.134***	0.0629	–4.280	0.000	0.053	0.336	29.319***	13.4661	7.360	0.000	11.918	72.128
Poor health	0.619*	0.1526	–1.950	0.051	0.381	1.003	2.153***	0.6175	2.670	0.007	1.227	3.778
Primary education	0.990	0.2605	–0.040	0.970	0.591	1.658	0.474	0.2285	–1.550	0.122	0.184	1.219
Tertiary education	0.925	0.2289	–0.310	0.754	0.570	1.503	0.622	0.3074	–0.960	0.337	0.236	1.639
Number of dependent children	1.423**	0.1985	2.530	0.011	1.082	1.870	1.030	0.2431	0.130	0.899	0.649	1.636
Number of adult household members	0.943	0.0608	–0.910	0.362	0.831	1.070	0.870	0.1182	–1.020	0.307	0.667	1.136
HH income – low	0.523***	0.1091	–3.110	0.002	0.347	0.787	0.700	0.2386	–1.050	0.296	0.359	1.366
HH income – below median	0.524**	0.1316	–2.570	0.010	0.320	0.857	1.913*	0.6832	1.820	0.069	0.950	3.853
HH income – above median	0.851	0.1866	–0.740	0.461	0.554	1.308	0.763	0.3018	–0.680	0.494	0.351	1.656
Home owner	0.58**	0.1350	–2.340	0.019	0.368	0.916	0.813	0.3831	–0.440	0.661	0.323	2.047
Densely populated area	0.995	0.2258	–0.020	0.983	0.638	1.553	1.149	0.4073	0.390	0.695	0.574	2.302
Medium populated area	1.068	0.2026	0.350	0.729	0.736	1.549	1.044	0.3222	0.140	0.888	0.571	1.912
Regional GDP per capita growth	1.069*	0.0379	1.890	0.059	0.997	1.146	0.902	0.0664	–1.410	0.159	0.780	1.041
Regional employment rate (age 15 – 64)	0.999	0.0175	–0.070	0.943	0.965	1.034	1.014	0.0324	0.440	0.658	0.953	1.080
Log pseudolikelihood	–920.32						–372.18					
Wald chi squared	100.65						161.38					
Number of all unemployment spells	357											

Note: Significance codes: *** = 0.01; ** = 0.05; * = 0.1. Controlled for the year when the unemployment spell terminates.

Source: Longitudinal EU-SILC 2008 – 2016; authors' computations.

F i g u r e 3
Survival Curves for Older Czech and Slovak Unemployed Workers[*)]



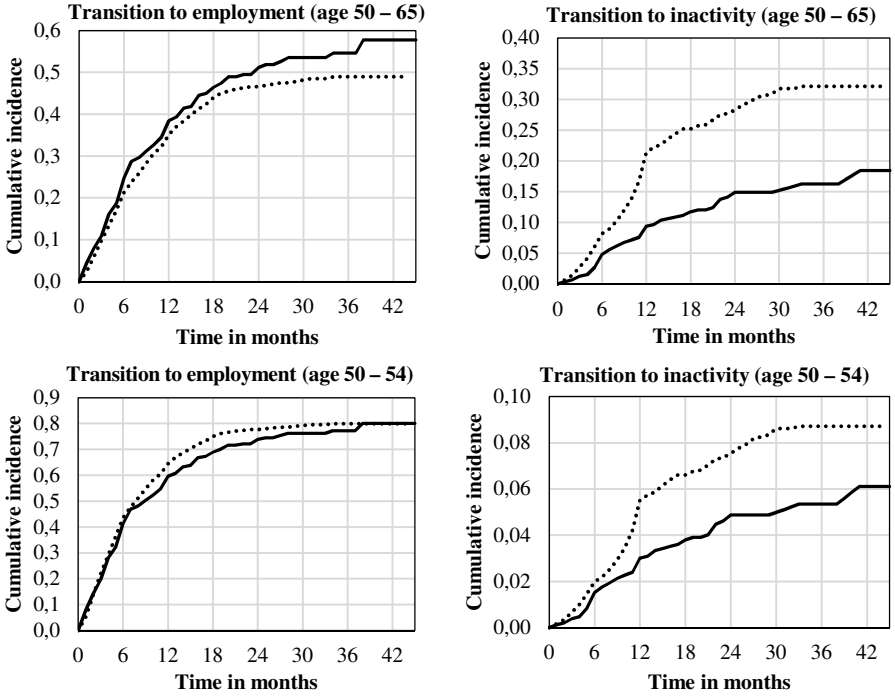
Note: [*)] Probability of remaining unemployed after any given length of unemployment spell.
Source: Longitudinal EU-SILC 2008 – 2017 (CZ); 2008 – 2016 (SK); authors' computations.

The question remains which of the two types of outflows from unemployment is decisive for longer unemployment duration and higher probability of remaining unemployed in Slovakia. The CIF curves in Figure 4 depict the probabilities of leaving unemployment and moving into either re-employment or inactivity, after any given length of unemployment spell. On aggregate, 57.8% of unemployed Slovaks aged 50 – 65 manage to transition into re-employment, compared with 48.9% of their Czech counterparts. Note that when focusing on unemployment spells lasting between one and five months, re-employment probabilities in both countries are comparable. They begin to deviate in favour of older Slovaks starting from longer unemployment periods, including even the age subcategory 60 – 65.[14]

The largest steepness of the Slovak "aggregate" (50 – 65) CIF curve of transitioning from unemployment to re-employment can be observed precisely between the fifth and sixth months of unemployment. In contrast, the analogous Czech curve does not exhibit any substantial change in its shape until the 18th month.

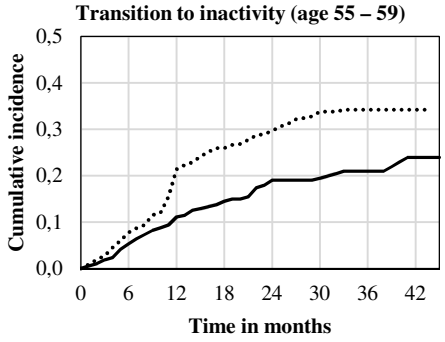
F i g u r e 4

Cumulative Incidence Functions for Older Czech and Slovak Unemployed Workers[*)]

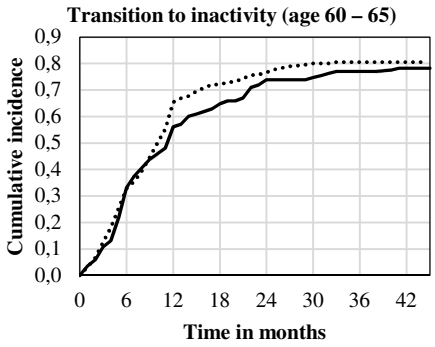


[14] The sole exception is in the age category 50 – 54, where the Czech and Slovak results eventually equalise.

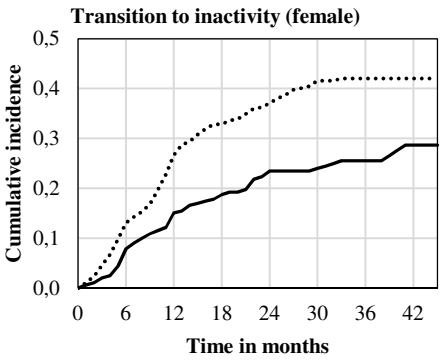

Transition to employment (age 55 – 59)
Cumulative incidence
0,6
0,5
0,4
0,3
0,2
0,1
0,0
0 6 12 18 24 30 36 42
Time in months


Transition to inactivity (age 55 – 59)
Cumulative incidence
0,5
0,4
0,3
0,2
0,1
0,0
0 6 12 18 24 30 36 42
Time in months

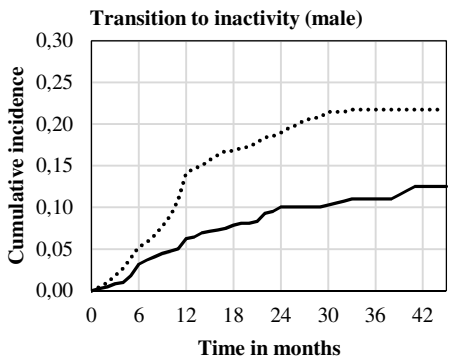

Transition to employment (age 60 – 65)
Cumulative incidence
0,20
0,15
0,10
0,05
0,00
0 6 12 18 24 30 36 42
Time in months

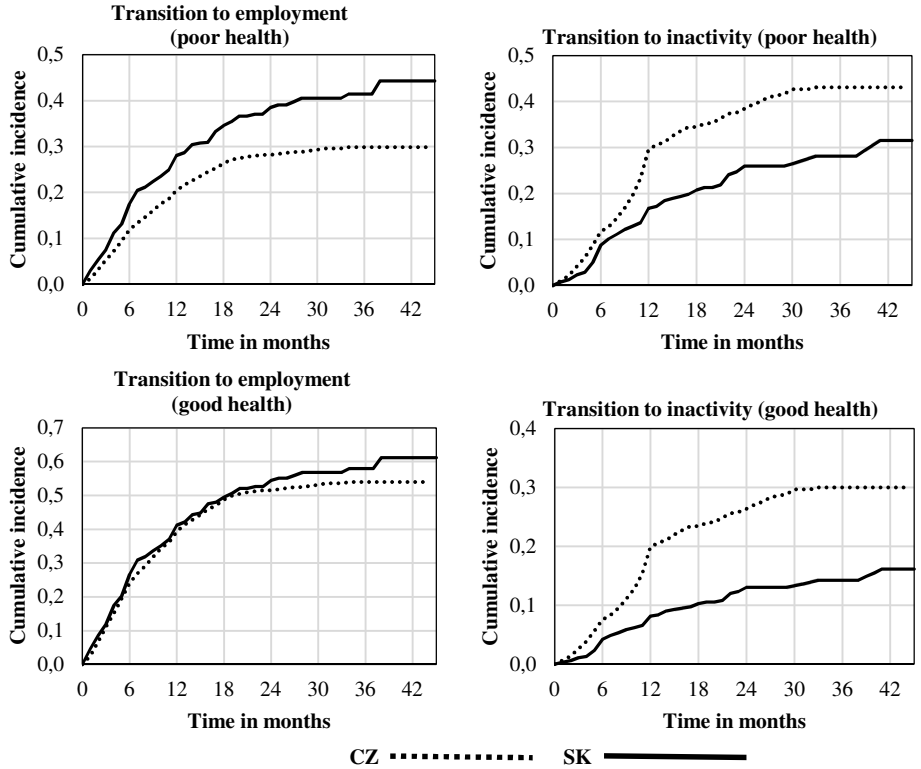

Transition to inactivity (age 60 – 65)
Cumulative incidence
0,9
0,8
0,7
0,6
0,5
0,4
0,3
0,2
0,1
0,0
0 6 12 18 24 30 36 42
Time in months


Transition to employment (female)
Cumulative incidence
0,5
0,4
0,3
0,2
0,1
0,0
0 6 12 18 24 30 36 42
Time in months


Transition to inactivity (female)
Cumulative incidence
0,5
0,4
0,3
0,2
0,1
0,0
0 6 12 18 24 30 36 42
Time in months


Transition to employment (male)
Cumulative incidence
0,7
0,6
0,5
0,4
0,3
0,2
0,1
0,0
0 6 12 18 24 30 36 42
Time in months


Transition to inactivity (male)
Cumulative incidence
0,30
0,25
0,20
0,15
0,10
0,05
0,00
0 6 12 18 24 30 36 42
Time in months



Note: *) Probabilities of transitioning from unemployment after any given length of unemployment spell.
Source: Longitudinal EU-SILC 2008 – 2017 (CZ); 2008 – 2016 (SK); authors' computations.

Figure 4 documents the presence of cross-country discrepancies in withdrawal probabilities: At the aggregate levels, 32.1% of older unemployed Czechs exit from unemployment *via* withdrawals, compared to 18.4% of Slovaks. Clearly, older Czechs use the inactivity channel relatively more frequently as an exit pathway from unemployment. This leads to their shorter unemployment spells and lower probability of remaining unemployed. Finally, note that the intensity of moving from unemployment to inactivity peaks for older Czechs most remarkably between the tenth and twelfth months of unemployment. The analogous Slovak CIF curve peaks in its steepness much earlier, between the fifth and sixth months.

4. Discussion and Conclusion

We find that being aged 55 and over is the key characteristic that negatively affects prospects of returning to employment, and it is equally decisive in positively influencing a withdrawal from the workforce. Women and those experiencing

poor health follow as the most disadvantaged/discouraged sub-categories of older unemployed workers. These findings are common to both countries and document a relatively high degree of exclusion of certain subcategories of older unemployed workers from labour market competition. Our results call for greater policy attention to be devoted to the above listed sub-categories. Their employability appears to be strongly undermined by apparent stigmatisation and possibly even discrimination on labour markets, in combination with significant discouragement effects.

Furthermore, we find that an older unemployed worker living in a bottom-income household faces, in both countries, diminished re-employment prospects. Such households typically consist of individuals sharing long-term experience of unstable and poorly paid jobs, with repeated unemployed spells in between. This makes the opportunity costs of remaining unemployed or of leaving the workforce more palatable. Home ownership also commonly reduces re-employment odds, likely due to the absence of mortgage or rent payments.

It is true that these effects are rather predictable and are also partly reflected in previous studies which focused solely on determinants of unemployment-to-employment transitions in the Czech Republic and/or Slovakia (Guzi, 2014; Baboš and Lubyová, 2016; Flek, Hála and Mysíková, 2020). However, little was known in the past about these effects (and even less about their significance, robustness, hierarchy and cross-country differences) in light of the competing-risk framework, or with an explicit focus on older unemployed workers.

Perhaps more surprisingly, education levels do not prove to have any significant effect on the odds of exiting unemployment. Highly educated older unemployed workers typically do not compete for jobs with low-qualified jobseekers of comparable ages, but with equally educated younger cohorts. Potential employers may link the age of older well-educated job applicants with human capital obsolescence and skill deterioration. This may neutralise their potentially higher re-employment (and lower withdrawal) incentives.

Increases in regional GDP per capita and/or high levels of regional employment rates would imply the presence of a relatively higher labour demand, but this is not reflected accordingly in better re-employment (and lower withdrawal) odds of older unemployed workers. As with higher education, favourable regional economic conditions seem not to improve their labour market prospects, due to negative signalling effects of a higher age.

Unemployment durations are longer on average for older unemployed Slovaks. But the probability of such a worker transitioning to re-employment is also higher in Slovakia, even in the oldest age subcategory (60 – 65). Specifically, re-employment odds begin to deviate in favour of older Slovaks after unemployment exceeding five months. The Slovak labour market thus appears to be functioning

relatively better in this respect. The sole reason older Czechs spend less time in unemployment is that they more frequently use the inactivity channel as an exit route from unemployment. This applies to any comparable duration of unemployment and to all subcategories of older unemployed workers.

As noted above, the re-employment odds of older unemployed Slovaks are higher than those of their Czech counterparts. In addition, the highest acceleration in transitions of older Slovaks from unemployment to employment can be observed between the fifth and sixth months of unemployment, which is when Slovak unemployment benefits end. In contrast, older unemployed Czechs are more likely to exit the workforce. They can spend between eight and eleven months receiving unemployment benefits, and the intensity of their transitions into inactivity peaks accordingly. Our results thus point to a need for more in-depth research which would explicitly address the role of institutional arrangements in framing the re-employment and withdrawal options of older unemployed workers.

At this stage of research, one may hypothesise that the higher pensionable age in the Czech Republic is unlikely to function as a relatively strong push factor to return to employment, while stricter rules on unemployment benefits applied in Slovakia appear to contribute to more intensive job-searches among older unemployed workers. However, these propositions should be confirmed by further research.

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