Occupational mobility in the Czech Republic and Slovakia: the role of education and other factors. [1]

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***Abstract*:** The paper uses labour force survey panel data to study the level and patterns of occupational mobility in the Czech Republic and Slovakia in the period of 2003-2012. Occupational mobility can serve as an adaptive mechanism of the labour markets on structural changes of the economy. The level of occupational mobility in the country is influenced by economic cycle, by the employment protection regulation and by other factors such as values attributed to various aspects of jobs. Empirical findings in the Czech Republic and Slovakia confirm that the patterns of occupational mobility are influenced by the amount of human capital accumulated. Highest shares of occupational mobility are among occupations where transferable skills are more important than specific skill, mostly managers, clerks and elementary occupations. The highest occupational mobility rate is among younger workers who have not yet gained too much job specific skills and experience and therefore have less to lose when changing occupations.

Key words: occupational mobility, panel data, labour market, labour force survey, vertical mobility.

1. Introduction

Current labour market is ever more frequently characterized by dynamic trends and it is often claimed that people need to be prepared for changes of jobs and occupations during their career. Flexibility and willingness to change the occupation on the side of the workers and flexible employment legislation serve as an adjusting mechanism in the labour market to balance structural changes. An optimal level of mobility is necessary for the functioning of labour market in the knowledge based economy, which brings significant and in some segments rapid structural changes in terms of sectoral as well as occupational composition of the workforce.

Occupational mobility may take many different forms. Former shop sales assistant who got promoted to retail manager is an example of intra-firm mobility, which sources mostly from employer´s decision. In contrary inter-firm occupational mobility is usually motivated by individual´s decision about his or her career. Sectoral changes, different wage conditions among occupations or macroeconomic conditions can very often be a motivation for this decision.

The role of education attainment in occupational mobility is ambivalent. An assumption related to investments in education is that higher education will lead to better chances in the labour market. On one hand people with higher education should be equipped with wider skills set and higher level of transferable skills which should make it easier for them to transfer between occupations. The higher education may open up a wider spectrum of employment opportunities and lead to better chances for good employment even in changing conditions in the labour market. On the other hand the higher education develops specific skills which may not be transferable to other occupations and so investments in development of these skills would be wasted if the occupation

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was changed. At the same time entering a different highly skilled occupation requires skills that need time to develop and do not enable immediate transfer from one occupation into another.

According to the research of Kambourov and Manovskii (2004, [7]), 10 year occupational tenure (with all other factors held constant) increases wages by at least 19 %. This leads them to the conclusion that human capital is not exclusively industry specific (Parent, 2000, [12]) or firm specific (Topel, 1991, [18]) but also occupational specific. Xiang (2008, [19]) focused on evaluating occupational changes from the loss of human capital point of view. His conclusions confirm that occupational changes connected with the loss of human capital, when the experience gained in the previous occupation is not valorized in the new occupation, are predominant. This suggests that the change of one´s occupation in a course of life is mostly unwanted and involuntary and connected with difficult situation on individual or macroeconomic level (Longhi, Brynin; 2010, [9]). If this is true, the yearly occupational mobility rates of average of 18% at the 2-digit level presented by Kambourov and Manovskii (2004, [7]) seem to be very high. On the other hand positive occupational change should not be ruled out completely. As Xiang (2008, [19]) points out, less than 4 percent of overall occupational mobility is tied with moving up the career ladders and switching between occupations requiring almost the same knowledge and skills. But even occupational switches connected with loss of certain amount of human capital might be positively evaluated by workers. Longhi and Brynin (2010, [9]) using British household panel data argue that over 45 percent of workers who recently overcame occupation change evaluate it as an improvement. Another argument added by Chen, Fugére and Lin (2008, [1]) suggests that average wage increase resulting from occupational change is 17%, while corresponding wage increase of workers who stay in their job is 7%. Conflicting evidence on the nature of occupational change leads us to investigation of the scope of downward and upward labour force mobility in the fourth section of this paper.

This paper focuses on measuring the scope of occupational mobility and comparing patterns associated with its occurrence in the Czech Republic and Slovakia in the period of 2003-2012.

The main questions on which the paper focuses are:

- What is the volume of occupational mobility in the Czech and Slovak labour market in comparison with other labour markets? How is it related to the employment protection legislation in the country?
- Which characteristics of an individual are related to higher mobility and to different types of mobility? How do the mobility patterns differ by education attainment, gender, age, and occupation?
- How the economic cycle influences the patterns of occupational mobility in general and for people at various levels of education?
- What share of occupational mobility leads to a better position in the labour market and what can be attributed to an involuntary fluctuation?

The paper is organized as follows. The second chapter describes our methodology and data. In the third chapter the overall occupational mobility is characterized. Three occupational mobility types based on their vertical direction are distinguished in the fourth section and their relative occurrence in both countries is described.

2. Methodology

a. Data

In this paper, data from Czech and Slovak labour force surveys (LFS) were used, which are harmonized with Eurostat LFS methodology and provide comparable data. They are household sample surveys carried out quarterly and cover population living in private households. The sample consists of 25 thousands households in the Czech Republic (approx. 49 thousands of individuals aged

15 years or more) and 10 thousands of households in Slovakia (approx. 22 thousands of individuals aged 15 years or more).[4]

The sample has a form of a rotating panel. Each quarter one fifth of the sample is changed and each household remains in the sample for five consecutive quarters. The panel character of the LFS data was used in this paper to carry out a longitudinal analysis tracking people at five consecutive quarters. This methodology of analyzing LFS data is still not very frequent, most studies use the LFS data as cross-sectional. In the international research the panel LFS data was used for example by Lalé (2008, [8]). A methodology of longitudinal analyses of Canadian LFS was prepared in 2004 [14]. Only a few papers used this character on Czech data, mostly to track the unemployed (Jarošová, 2006, [6]; Stupnytskyy, 2011, [17]). Brief longitudinal analysis was prepared by Czech Statistical Office in 2011 [2].

In our paper we used data from the Labour Force Survey (LFS) from the period of 2003-2012, more specifically national microdata sets provided by Czech and Slovak statistical offices. The data were broken down by waves (order of visit) and merged again in order to allow us to study changes in individual´s occupation during his or her participation in panel. The data for the final analysis were weighted by the quarterly weights for the first visit. In some cases we focused on analyzing trends and used yearly data separately, in others we used the entire pool of respondents in the file regardless the year in order to make a more detailed breakdown by socioeconomic characteristics.

The sample was restricted to correspond the needs of the analysis of mobility in the labour market. At first, respondents who drop out from the panel during the year and therefore had missing observation in any of the waves were excluded. Further we restricted the sample to people who were employed both at the time of first and last interview (when entering the panel and a year after). We also excluded students of formal education to prevent the situation when switching between unqualified and part-time student job would be measured as a standard mobility in the labour market.

The LFS uses ISCO classification of occupations and this is a key variable for the definition of occupational mobility. In Czech and Slovak LFS ISCO-88 was used until 2010 and ISCO-08 from 2011 on. We had to exclude the respondents who entered the survey in 2010 because they had their occupation classified in ISCO-88 in the first wave but in ISCO-08 in the last wave. Even though there are available correspondence tables between the two versions of occupational classifications they cannot be used for measuring the occupational mobility. There are too many relations of other than 1:1 character between the classifications and comparison between 2010 and 2011 would report a high share of pseudo mobility.

b. Measurement of occupational mobility

There are several forms how the occupational mobility can be approached. The most straightforward solution is a change of occupation as defined by a standard classification. The main concern is at what level of classification the mobility is measured. The choice is often driven by what data is available, 4 digit and/or 2 digit levels are used by majority of authors. Apparently, the more detailed coding is used, the higher rates of occupational mobility are recorded.

Various procedures to clean the data from a pseudo mobility caused by miscoding or to improve the definition of the mobility have been applied by the authors. Lalé (2012, [8]) measured the mobility at the 4-digit, 2-digit and 1 digit ISCO codes. On the 2- and 1- digit levels he discards all switches between occupations which are not accompanied by a change of employer. Moscarini and Thomsson (2007, [10]) recognize the occupational mobility only if there is a coincident change of industry, social class or if the respondent searched work in the last months. Longhi, Brynin (2010, [9]) only focused on occupational mobility if accompanied by a change of employer. These may be considered as cautious methodologies which probably underestimate the level of occupational

[4] [3], [15]

mobility. It discards promotions within one company, which may be real and go across the broader occupation groups[5].

Various authors` concern about detecting pseudo mobility by data cleaning procedures is closely connected with the issue of dependent and independent occupational coding (i.e. translating respondent´s description of his or her occupation into ISCO code). Coding is independent if coder doesn´t have any knowledge about the respondent´s occupational code during his previous participation in panel. On the contrary, dependent coding means that coder knows how respondent´s occupation was coded in previous wave of LFS and evaluates whether there was or wasn´t any change. Apparently, dependent coding is more appropriate for measuring occupational change because it reduces possible coding errors. Dependent coding used in both Czech and Slovak datasets is a reason why we didn´t take any special measures to cope with pseudo mobility issue.

The second main methodological concern is related to the measurement period. When comparing results of studies on occupational mobility, the period between observations has to be taken into consideration because of the probability of change which is growing with the measurement period. Authors decided for various time periods for measuring the occupational change according to the data they have available. Another issue connected with the measurement period is time aggregation. Time aggregation problem includes possible multiple undetected occupational transitions in between the beginning and the end of measurement as well as the increased probability of attrition of the panel. The longer the frequency between two interviews is, the most severe time aggregation problem we have to face. Common strategy (e.g. Kambourov and Manovskii, 2004, [7]; Lalé, 2012, [8]) is to measure occupational changes in a year period with possible extension in case of respondents who were unemployed during their first participation (t) in the panel, but stated they were employed both a year before they joined the panel (t-1) and at the end of the measurement period (t+1). If different occupation is reported in t-1 and t+1, respondent is labeled as occupational switcher. In this paper one year measurement period was used without abovementioned modification including career breaks because of data availability. The result of this strategy is a slight underestimation of mobility rates compared to Kambourov and Manovskii (2004, [7]) and Lalé (2012, [8]).

In our paper we applied two approaches to measure mobility of employed people between jobs.

1. Occupational mobility was defined as a change of occupation between the first and the last visit (in one year). More specifically, the rate of occupational mobility used in the third section of this paper is defined as a number of individuals employed both at the beginning and at the end of their stay in panel, who reported different 2-digit occupation at the beginning and at the end of their participation in the survey, divided by all survey participants employed during their first and fifth panel participation with exception of formal education students. The change was measured at 2-digit level to ensure comparability of the Czech and Slovak dataset. The Czech data enabled measurement of mobility at 4 digit level as well. The rate of mobility was 3.1 at the two-digit level and 4.1 at the four-digit level. The difference between two-digit and four-digit mobility was somewhat lower than these identified in France (4.7 at two-digit and 7.4 at four-digit; Lalé, 2012, [8]).
2. The second concept applied in the paper is focused on the vertical direction of the mobility. It distinguishes between 3 categories: upward mobility, downward mobility and horizontal mobility and an implicit fourth category “no mobility”. Figure 1 presents a decision tree used to categorization of respondents into the four groups. The upward/downward mobility can be caused by four major changes in the job characteristics:

[5] These may include for examples switches to management jobs in ISCO 1 or switches from junior to senior positions or between technicians and specialists (e.g. information and communication technicians – ISCO 35 and Software and applications developers and analysts – ISCO 25). It may be signifiant especially among graduates who often get less qualified jobs after thein graduation but may move quickly up.

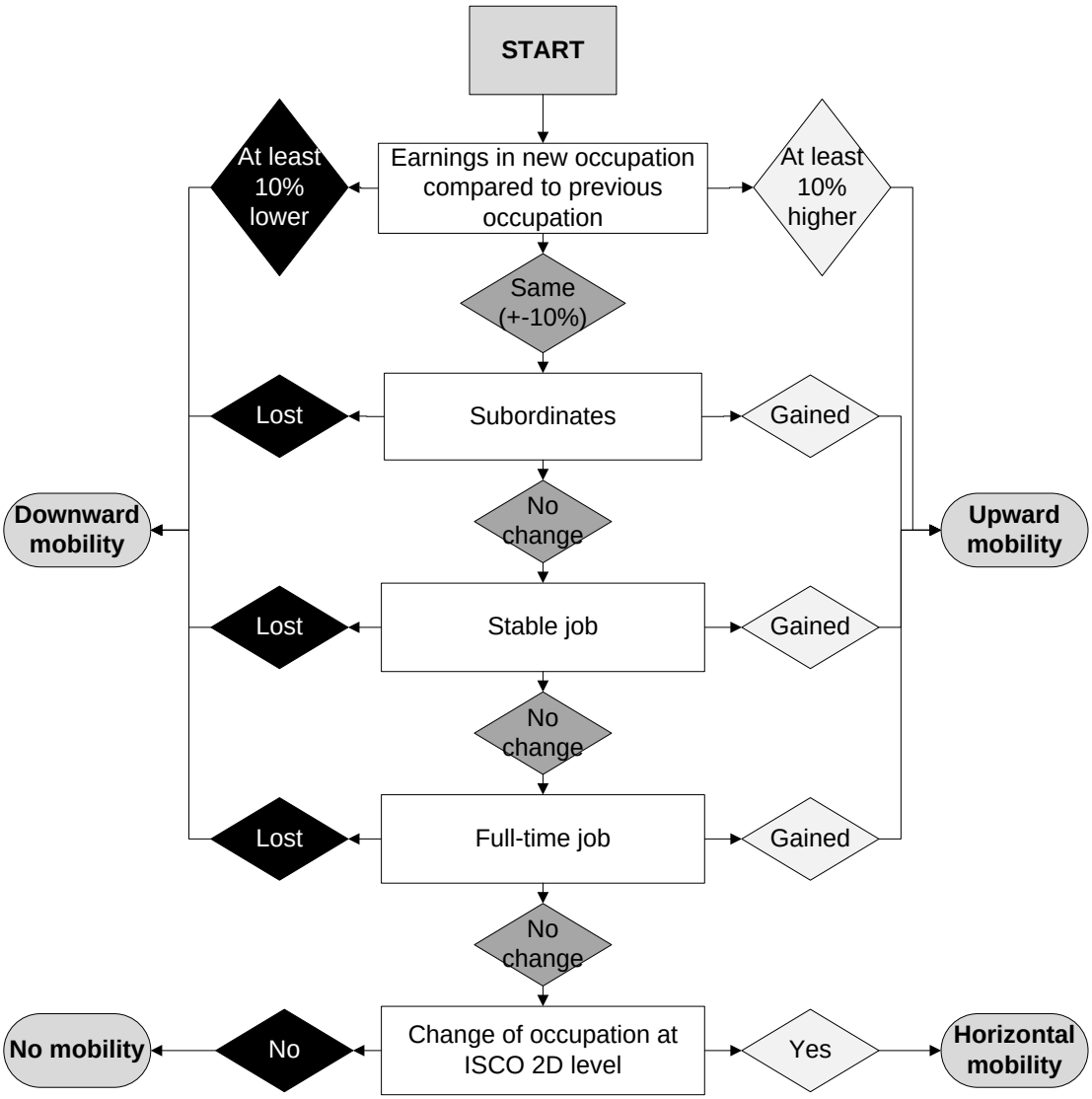
a. Transition to an occupation with at least 10 % higher/ lower average earnings than the initial occupation. The LFS data do not provide direct information on the actual earning level of the employer. We used external information on average wages for ISCO 2 digit levels from the information systems on average earnings conducted by Trexima for ministries of labour in both countries [21, 22, 28, 29]. The information on average wage in the initial and final occupation had been imputed into the LFS dataset and these were compared. Even though the person may not actually get a 10% or more higher wage in the final occupation we can treat this as an upward shift because s/he has a job which is in general better paid and which may improve his/her future career prospects. Similar approach using average earning by ISCO 1 digit level has been applied by Dex, Lindley, Ward (2007, [4]). If there was no difference in occupations or the difference in earnings was lower than 10% the vertical mobility has still been attributed if the person:

b. Gained/lost subordinates in their job.

c. Switched between temporary (fixed-term) and permanent contract. The change was only perceived as vertical mobility if the temporary job was involuntary.

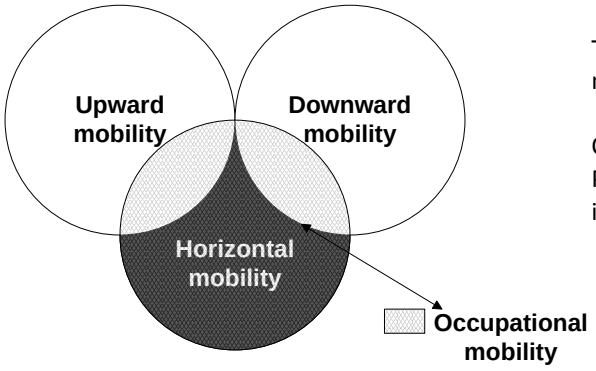
d. Switched between full-time and part-time job. Similarly to previous case the change was only perceived as vertical mobility if the part-time job was not the worker`s preference.

Figure 1: Decision tree



The figure 1 suggests that there is a possibility of identification of upward or downward mobility for a person even if s/he did not change the occupation. The sum of upward, downward and horizontal mobility is therefore higher than the occupational mobility. The relation among these categories is shown at figure 2.

Figure 2: Relations among vertical dimensions of mobility and occupational mobility



Total mobility = Upward mobility + Downward mobility + Horizontal mobility

Occupational mobility = All horizontal mobility + Parts of upward and downward mobility which include change of occupation

3. Results

a. Volume of occupational mobility

Rate of occupational mobility in the international context

According to the methodology described above the overall occupation mobility over the period of 2003-2012[6] occurred in 3.1 percent of cases in the Czech Republic and in 2.2 percent of cases in Slovakia. The mobility rates in the Czech Republic were exceeding rates of Slovakia in the whole period we focused on. Mobility rates of the Czech Republic and Slovakia can be with several limitations compared to similar studies performed in the USA, Canada and some European countries. To achieve the highest possible comparability only studies using LFS data were chosen as benchmarks. Dex, Lindley and Ward (2007, [4]) identified the mobility rate of 9 percent in 1997 and 9.8 percent in 2000 for the US population from 18 to 65 years. Similar study performed on French LFS data by Lalé (2012, [8]) came up with the average occupational mobility rate of 4.7 percent in between 1982 and 2009. Although different methodological approaches[7] have to be taken into consideration while comparing results of studies, the Czech and Slovak rates of occupational mobility seem to be exceptionally low in this context. For the Czech Republic this conclusion can be confirmed even on more detailed 4 digit level of the classification of occupations. The mobility rate defined by change of the four digit occupation code within the period of respondent´s participation in LFS panel reached 4.1 percent compared to 7.4 percent in France. When considering results of other studies, low mobility rates in the Czech Republic and Slovakia turn out to be even more exceptional[8].

There can be several explanations of different rates of mobility in different countries. Lalé (2012, [8]) explains lower mobility rates in France as opposed to USA by less flexible labour markets

[6] Respondents who joined the LFS panel in 2010 were removed from analysis due to changes of classification of occupations in both Slovakia and the Czech republic.

[7] While our sample is restricted to those who were employed both at the beginning and at the end of measurement period, Lalé includes those who were unemployed during the first visit. Overmore, in French study workers employed in public sector were excluded. Occupational rates are thus not fully comparable.

[8] 15% occupational mobility on 2-digit level measured in the USA by Kambourov and Manovskii (2004), 20% occupational mobility on 4-digit level measured by Chen and Fougére (2008) in Canada, 29,4% mobility measured on 2-digit level by Longhi and Brynin (2010) in the United Kingdom.

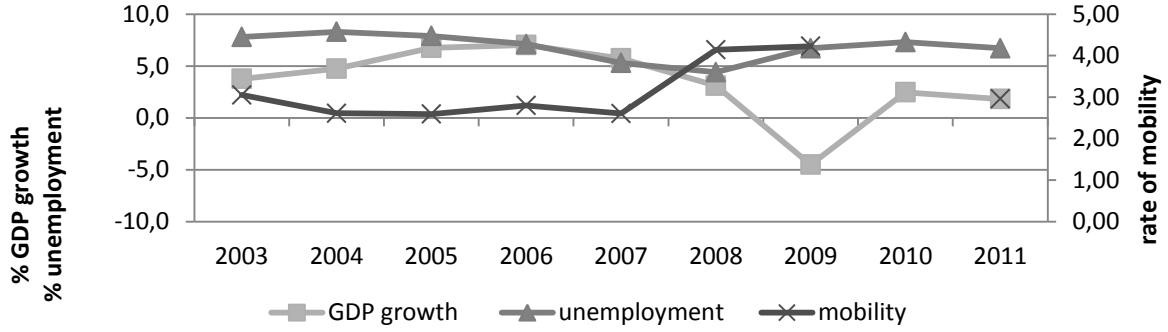
in continental Europe. In countries with strict employment protection legislation the overall labour mobility is expected to be lower. OECD indicator designed to compare employment protection legislation stringency[9] confirms that countries with evidence of very high levels of occupational mobility (USA, United Kingdom or Canada) are the least regulated countries in the domain of employment protection. Similarly in France and the Czech Republic, i.e. countries where the employment protection is very strict, significantly lower occupational mobility rates have been detected. According to Gangl (2003, [5]) stringent employment protection legislation should reduce both voluntary and involuntary (employer induced) mobility. However, labour market flexibility is far from being the only explanatory factor of the differences in the occupational mobility rates among countries and reality is much more complicated. A good example may be found in Slovakia, where extremely low occupational mobility rates go hand in hand with relatively unregulated labour market. High unemployment rates resulting in lack of willingness to quit a job voluntarily in Slovakia might be an explanation.

The level of mobility can also be related to the value which is attributed by workers to different aspects of the job. The surveys of work values such as International Social Survey Programme from 2005 [26] or European Values Study from 2008 [25] show that workers in the Czech Republic and Slovakia put more emphasis on job security while career aspects of the job (such as opportunities for promotion or having a responsible job) are not as important as in the old EU member countries or the US. This general work values can negatively influence the willingness to occupational mobility in Czech Republic and Slovakia as another factor. Several authors suggested that these are related factors and people in countries with stringent regulations are less satisfied with jobs security (Postel-Vinay, Saint-Martin, 2005 and Clark, Postel-Vinay, 2009 as quoted in OECD, 2013, [11]).

Relation between occupational mobility and the economic cycle

Figures no. 3 and 4 present the evolution of occupational mobility rates in the Czech Republic and Slovakia since 2003 to 2012. Our first conclusion is that unlike in study of Kambourov and Manovskii (2004, [7]) no overall trend in occupational mobility has been identified in our data over time.

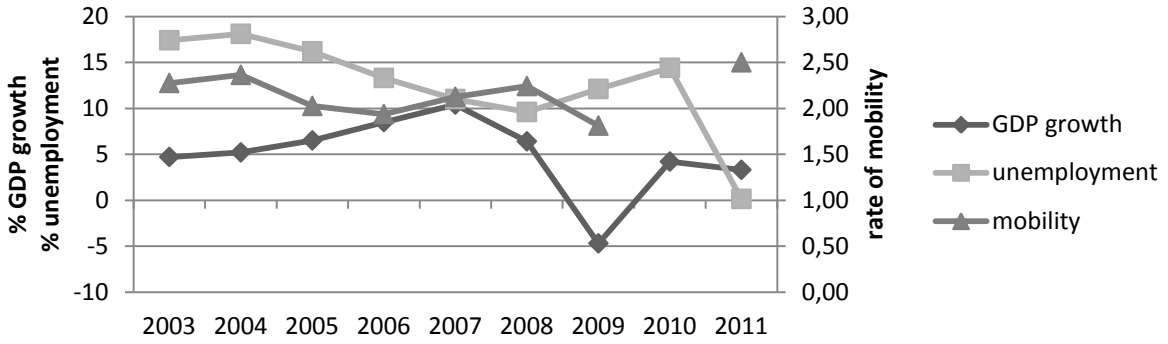
Figure 3: Mobility rate and economic cycle in The Czech Republic



Source: LFS **[20]**

[9] The OECD indicators on Employment Protection Legislation 2013, [11]

Figure 4: Mobility rate and economic cycle in Slovakia



Source: LFS **[27]**

Figures 3 and 4 enable us to analyze the connection of occupation mobility and the development of the economic cycle[10]. Empirical evidence (Dex, Lindley, Ward, 2007, [4]; Moscarini, Thomsson, 2007, [10]; Kambourov, Manovskii, 2004, [7]; Lalé, 2012, [8]) suggests a pro-cyclical pattern of occupation mobility, i.e. increasing rates of mobility during the periods of economic expansion and decrease in recessions. The evidence from our data is not clear. While in case of Slovakia, the development of occupation mobility rate can be at least from 2006 considered as pro-cyclical, the peak of occupational mobility in 2009 in the Czech Republic coincides with beginning of economic recession, suggesting rather counter-cyclical character of mobility in this country. As a result the relation of occupational mobility and economic development in Slovakia is in accordance with previous studies while the development of occupational mobility in the Czech Republic seems to be unusual in the context of other studies.

Considering the short time series of available data, the estimates of the relation of mobility rates and economic cycle are very rough. However, our data cover the transition into economic recession and provide us with information about development of mobility during massive decrease of economic performance that occurred in both countries in 2009. In Slovakia the economic recession had only limited impact on mobility rates and the period of 2008-2009 doesn't show any specific pattern in the overall development of mobility. In the Czech Republic mobility rates have sharply increased as a reaction to economic recession. The growth of occupational mobility was noticeable in all educational and age groups. Growth of mobility rates during inconvenient situation on the labour market are in line with the hypothesis of mostly involuntary nature of occupational change. Workers threatened by loss of their job take up every possible step including occupation change in order to avoid unemployment.

Only moderate growth of mobility rates as a reaction to economic recession in Slovakia seem to have connection with sharp increase of unemployment rates in the same period. In the Czech Republic, where unemployment rates are significantly lower, workers who lost their jobs as a result of decline of economic performance might have taken up less qualified jobs, i.e. change occupation. In Slovakia less such possibilities were available.

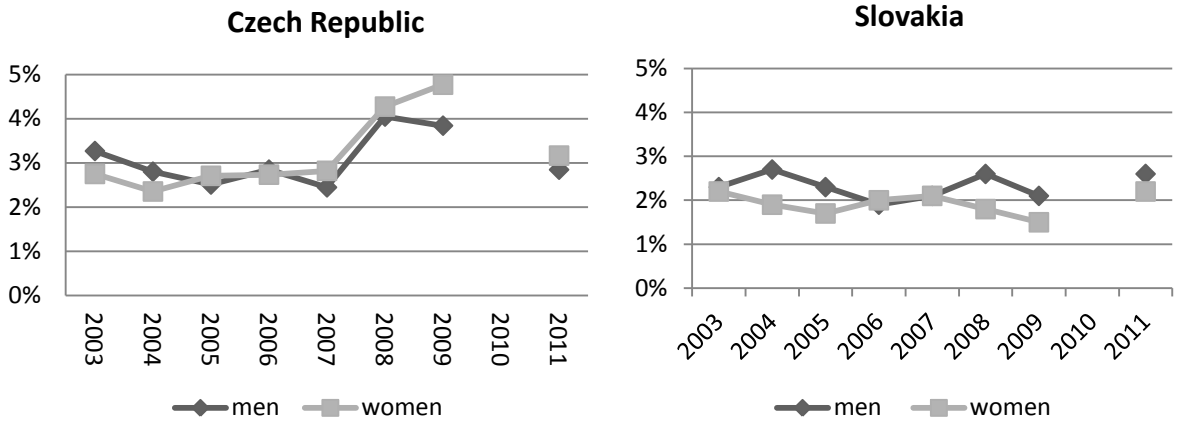
Gender differences in occupational mobility

The rate of occupational mobility of men and women in the Czech Republic is comparable (average 3.1 percent in case of men, 3.2 percent for women). The difference of 0.1 p.p. is not statistically significant, therefore we can rule out the hypothesis of gender determined tendency to change occupation. However economic recession seems to have more severe impact on women´s

[10] While reading figures depicting the development of mobility rates in time we must take into consideration that the year corresponds with the moment when respondents joined the panel. That means that rates for year 2009 reflect occupational changes that occurred in between January 2009 and December 2010, when all the respondents who took part in the LSF in 2009 left the panel.

mobility rate. While the increase in occupational mobility in 2008 was equal for both genders the development in 2009 was contradictory. Women´s mobility rates continued to grow, men´s mobility rates were slowly heading to steady state usual for the previous period.

Figure 5: Mobility rates for men and women (%)[11]



***Source: LFS* [20, 27]**

In Slovakia almost entire 2003-2012 period can be characterized by higher mobility rates of male workers. The average mobility rates were 2.3 percent for men and 1.9 percent for women and the difference of 0.4 p.p. is statistically significant (p = .000). Higher mobility of men is in accordance with evidence from France (Lalé, 2012, [8]) and the USA (Parrado et al., 2007, [13]). Differences between men and women are especially significant among the young workers. Approximately from the age of 40 the mobility rates of both genders tend to equalize.

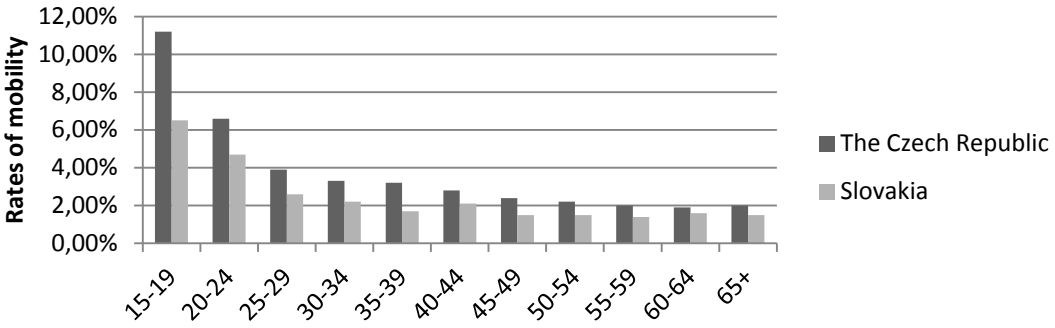
Occupational mobility by age

Young people are among the most mobile groups in the labour market. All available studies on occupational mobility confirm that young age is an attribute most tightly associated with mobility (e.g. Lalé, 2012, [8]; Kambourov, Manovskii, 2004, [7]). Data from the Czech Republic and Slovakia do validate such hypothesis. The mobility rates in different age groups in both countries are shown in figure 6. In the first age group from 15 to 19 years the rate of mobility is in both countries more than three times higher than the average mobility rate. Mobility rates are exceptionally high up to the age of 25. When it comes to the development of mobility in relation to economic cycle we didn´t find any specific patterns of workers in different age groups. The theory of occupational specific human capital can be very useful in explaining this. Because human capital is dependent on occupational tenure, the costs of mobility for workers who didn't build their stock of occupational specific human capital yet are much lower than in case of experienced workers. Older workers don't switch their occupations as often simply because they have more to lose. Also on the employer side firing older workers may mean losing more investments into their skills and a part of the younger workers` mobility can be a result of the "last in-first out" effect.

Although the workforce became older in the observed 10 years period the level of mobility did not decrease. This can be considered as a sign that a certain level of mobility is necessary in the labour market and that it is not only a specifically individual characteristic (in which case the overall level of mobility would change with changing structure of the workforce). Even though mobility may be more widespread among the younger workers the older people will have to be also prepared to change their occupations to a greater extent in the future as the workforce will get older in general.

[11] See footnote n. 8

Figure 6: Mobility rates in age groups (%)

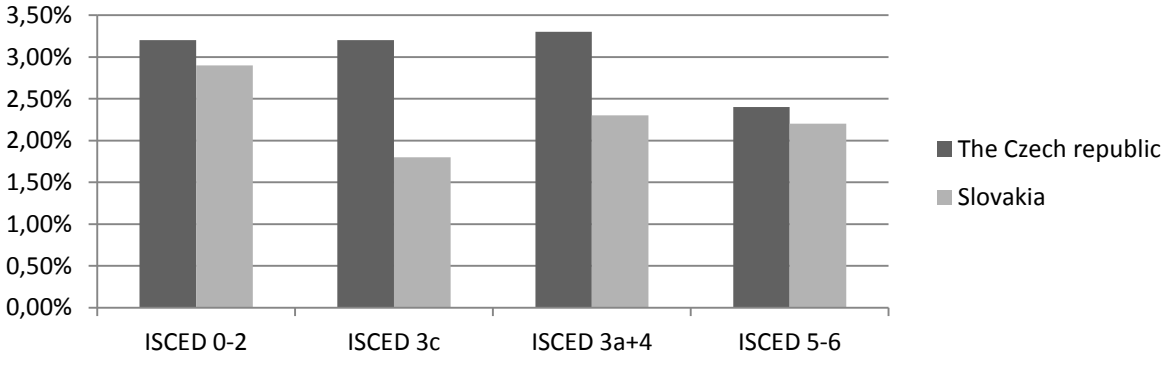


***Source: LFS* [20, 27]**

Occupational mobility by education attained

The empirical evidence focusing on the patterns of mobility in different educational groups is inconsistent. Lalé (2012, [8]) and Parrado et al. (2007, [13]) did not recognize any significant education related mobility patterns, Kambourov and Manovskii (2004, [7]) have discovered lower mobility rates of workers with higher education. Different evidence in the two countries is also a result of our analysis. In the Czech Republic the mobility of tertiary educated workers is significantly lower than in other educational groups. Possible explanations might be connected with investment into human capital that results in the structure of skills which is less transferable among occupations (Kambourov, Manovskii; 2004, [7]). However results from Slovakia indicate that such an explanation is not generally valid. On one hand workers with the lowest education level do exhibit the highest occupational mobility; on the other hand no apparent trend can be identified for other educational groups. Lower mobility rates of workers with university degree might be connected with measuring mobility by change of 2 digit code of occupation. One might object that tertiary educated workers change their occupation as often as others, but due to their specific human capital this change is more likely to happen within extensively defined 2-digit occupational code. To evaluate this possible methodological influence we have examined this possibility on 4-digit codes available for the Czech Republic. Even on this more detailed level we reached the same conclusion about lower mobility rates of workers with university degree.

Figure 7: Mobility rates in educational groups (%)



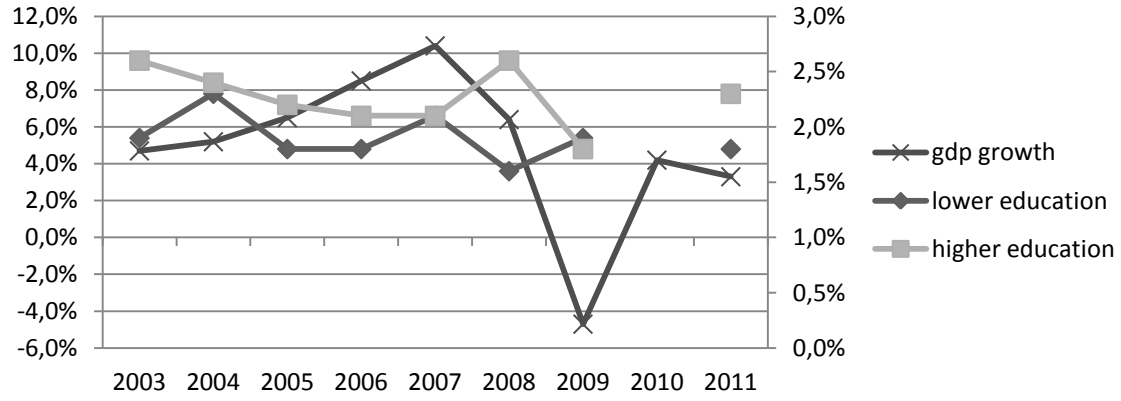
***Source: LFS* [20, 27]**

Differences in between the patterns of occupational mobility in the Czech Republic and Slovakia are confirmed when drawing conclusion about relation of the economic cycle and the development of mobility in various educational groups. In Slovakia we can hardly find any relation between the performance of economy and the mobility rates of workers with lower education (i.e. without maturita exam corresponding with obtaining ISCED 3a level), but in case of workers with higher education there seems to be countercyclical pattern which is even more robust while

evaluating workers with college degree exclusively. During the whole 2003-2007 period connected with the acceleration of economy the mobility rate of workers with higher education has been decreasing; the beginning of the economic recession is associated with significant increase of mobility within this group. In the period when the economic growth has been re-launched, mobility of more educated groups decreased again. This evidence is in line with the explanation mentioned above. Compared to their less educated competitor, the more educated segment of population affected by economic crisis has a better chance to take up less qualified jobs, therefore their occupational mobility increased. On the other hand, less educated workers were more often stayed in unemployment as a result of the crisis.

In the Czech Republic the mobility of different educational groups has been following the same trend as in Slovakia, the only exception is the separate decrease in mobility in the group of workers with high school with maturita (ISCED 3a+4) in 2009.

Figure 8: Development of mobility rates in educational groups in Slovakia (%)[12]



Source: LFS **[27]**

Mobility across occupational groups

The theory of human capital suggests that the occupational mobility rates depend on the extent to which human capital is specific for the certain occupation. Therefore mobility rates should be higher in case of occupations whose skills are easily transferable and very low in case of occupations that demand specific skills. In the Czech Republic as well as in Slovakia managers, clerks and elementary occupations were major groups most likely to experience the change in occupation. The lowest frequency of occupational mobility was identified in case of technicians and associate professionals in Czech data. In Slovakia professionals and craft workers were among the most stable workers.

Table 1: Mobility rates by initial occupational groups

ISCO-88/ISCO-08	CZE	SK
Legislators, senior officials and managers	4,6%	2,9%
Professionals	3,2%	1,6%
Technicians and associate professionals	2,1%	1,8%
Clerks	3,8%	2,6%
Service and sales workers	3,4%	1,8%
Skilled agricultural, forestry and fishery workers	2,9%	2,8%
Craft and related trades workers	2,6%	1,6%
Plant and machine operators, and assemblers	2,8%	2,1%
Elementary occupations	5,3%	2,8%

Source: LFS **[20, 27]**

[12] See footnote n. 8

The mobility can occur within the major occupational groups or workers can switch into different group. Tables 2 and 3 show the occurrence of possible transitions and identifies most frequent occupational changes. Transitions into the group of technicians and associate professionals are among the most frequented in the Czech Republic. Technicians and associate professionals are a target group for more than half of the professionals and almost third of managers and clerks who experienced the occupational change, but surprisingly the share of workers who switch into this group from less qualified occupations (groups 5, 6, 7 and 8) is not negligible either. Another important target occupational group in the Czech Republic are service workers, which very often attracts former clerks or workers from elementary occupations. Transitions between craft workers and plant and machine operators are very frequent too. Occupational mobility within the major occupational groups is most likely to happen in case of craft workers, managers and technicians and associate professionals, the probability of changing the major occupational group is highest for agriculture workers, professionals and clerks.

In Slovakia, the switch into the group of technicians and associate professionals is similarly frequent in case of more qualified occupations, but it is quite rare for less qualified workers. Occupational groups of craft workers and elementary occupations are target groups for workers from other less qualified occupations very often. In accordance with the Czech Republic occupational switch within the major ISCO group is most likely to happen in case of craft workers and managers. Due to a lesser sample size, the Slovakian table of transitions is less reliable, especially in case of agriculture workers and armed forces, whose representation in sample is insufficient for this kind of analysis.

Table 2[13]: Mobility across major occupational groups in the Czech Republic

		Final occupational group										
Initial occupational group		1	2	3	4	5	6	7	8	9	0	Total
	1	19%	13.3%	29%	11.7%	15.6%	-	6.2%	2.7%	2.3%	0.2%	100%
	2	8.7%	8.4%	55.4%	17.0%	3.7%	1.1%	2.9%	2.2%	0.6%	-	100%
	3	14.6%	15.3%	16.9%	14.4%	16.9%	0.7%	8.5%	8.4%	3.8%	0.4%	100%
	4	7.1%	5.5%	28.7%	8.7%	20.4%	1.2%	4.0%	13.7%	10.3%	0.4%	100%
	5	5.5%	3.6%	18.6%	12.4%	14.3%	1.5%	8.8%	17.8%	17.2%	0.3%	100%
	6	1.3%	5.1%	11.4%	3.8%	11.4%	2.5%	13.9%	24.1%	26.6%	-	100%
	7	1.5%	2.2%	12.1%	4.2%	12.1%	1.9%	21.6%	30.1%	13.8%	0.6%	100%
	8	1.3%	0.3%	10.6%	8.4%	10.7%	2.7%	31%	16.6%	18.1%	0.3%	100%
	9	0.5%	0.7%	8.3%	9.8%	18.7%	3.7%	19.8%	23.3%	15.3%	-	100%
	0	-	5.3%	14%	3.5%	15.8%	1.8%	28.1%	21.1%	10.5%	-	100%

***Source: LFS* [20]**

[13] Tables consist of cases that overcame occupational change during their remaining in LFS panel. Rows of the table represent the code of respondent´s occupation in the time he participated the LFS panel for the first time, columns represent the code of his occupation during his last participation. Cell *mn* represents percent of workers who changed their occupation from major groups *m* into major group *n*. For example in the table X+1, 19 percent of those who initially worked as managers and changed their occupation, remained in the group of managers and 13, 3 percent of them switched into occupation coded as professionals. Occupational groups are defined as 1. Legislators, senior officials and managers 2. Professionals 3. Technicians and associate professionals 4. Clerks 5. Service workers and shop and market sales workers 6. Skilled agricultural and fishery workers 7. Craft and related trade workers 8.Plant and machine operators and assemblers 9. Elementary occupations 0.Armed forces

Table 3[11]: Mobility across major occupational groups in Slovakia

		Final occupational group										
Initial occupational group		1	2	3	4	5	6	7	8	9	0	Total
	1	27.6%	21.6%	24.1%	5.2%	11.2%	-	4.3%	3.4%	2.6%	-	100%
	2	13.6%	11.9%	46.6%	4.2%	10.2%	-	8.5%	0.8%	4.2%	-	100%
	3	9.6%	13.5%	9.6%	17.5%	15.7%	0.4%	7.0%	18.8%	7.4%	0.4%	100%
	4	3.7%	6.5%	31.8%	14.0%	20.6%	-	3.7%	7.5%	12.1%	-	100%
	5	6.7%	4.8%	9.7%	13.3%	17.6%	0.6%	9.1%	12.7%	21.8%	3.6%	100%
	6	5.6%	0.0%	0.0%	5.6%	11.1%	-	22.2%	16.7%	38.9%	-	100%
	7	1.6%	2.6%	5.2%	5.7%	9.3%	1.6%	24.9%	26.4%	20.7%	2.1%	100%
	8	1.5%	0.0%	6.4%	7.9%	13.8%	2.0%	22.7%	16.7%	28.6%	0.5%	100%
	9	1.8%	3.0%	4.2%	7.2%	22.9%	3.6%	20.5%	18.7%	17.5%	0.6%	100%
	0	47.4%	1.3%	13.2%	-	5.3%	-	1.3%	2.6%	1.3%	27.6%	100%

***Source: LFS* [27]**

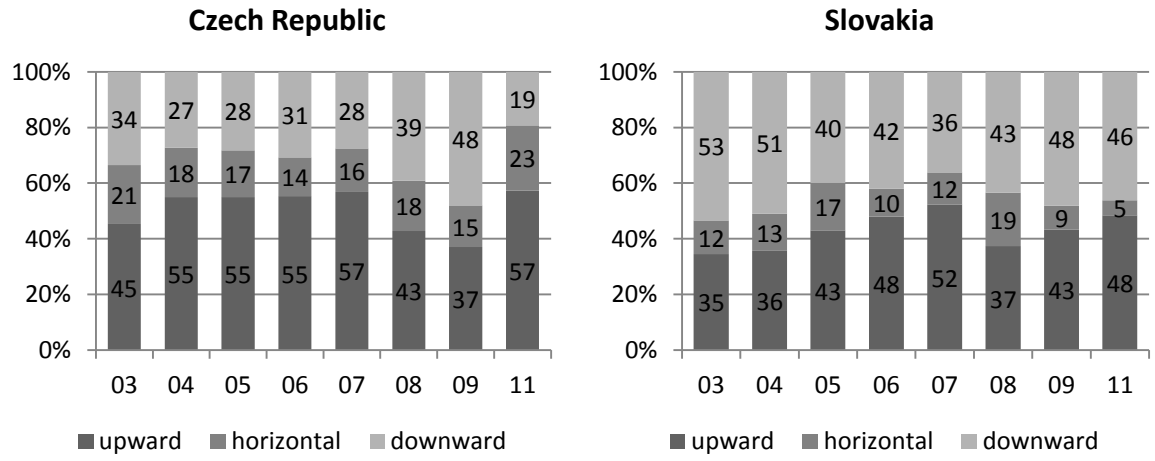
b. Upward occupational mobility and influencing factors

This part of the paper focuses on vertical dimension of mobility in the labour market. The analyzed population is restricted to people who experienced upward, downward or horizontal mobility (see figures 1 and 2). This group is called total mobility in the following text and consists of 7.528 respondents in the Czech Republic and 1.866 in Slovakia. The total mobility rate was 4.9 % in CR and 3.0 % in SK. It is higher than the occupational mobility (3.1 in CR and 2.2 in SK) because it includes some shifts up and down which are caused by other factors than occupation change (e.g. switch from temporary to permanent job).

In the analyzed period in average about half of the total mobility was upward in the Czech Republic, in the Slovakia it was 42%. About a third of mobility in Czech Republic and 44% in Slovakia was downwards; the rest was a horizontal mobility.

Figure 10 shows how the ratios between upward, downward and horizontal mobility changed over time. The economic crisis in 2008 influenced the upward mobility significantly. People who lost their job were more willing to take a job at a lower level than their former one in the recession because there was a higher risk of unemployment. The drop in the upward mobility was significant in both countries. In Slovakia the upward mobility started to grow already in the next year, in the Czech Republic there was a lag in recovery.

Figure 10: Shares of types of mobility (2003-2012, %)

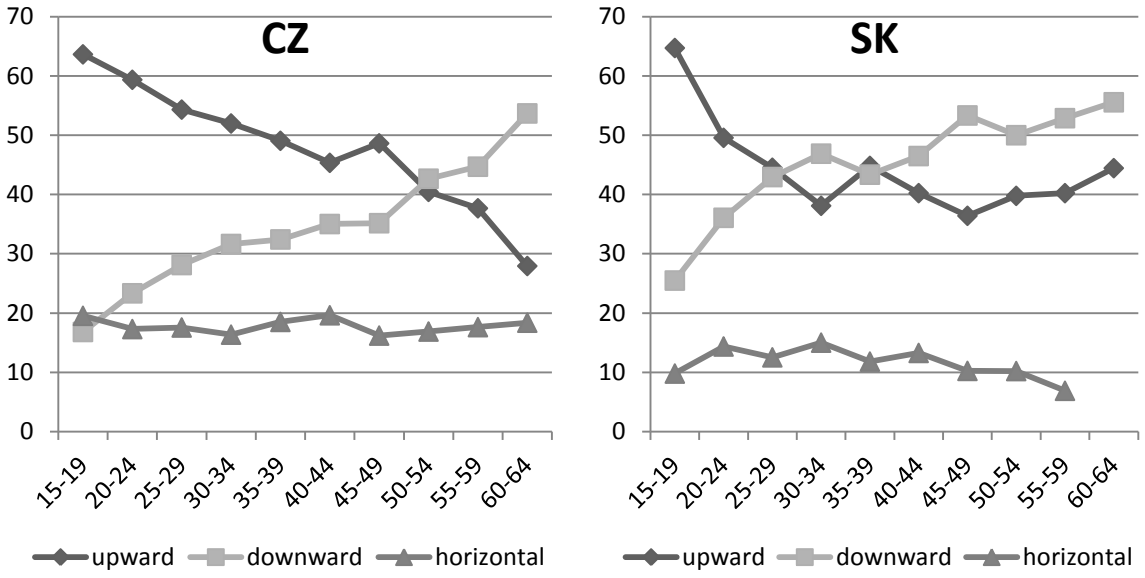


***Source: LFS* [20, 27]**

The upward mobility is highest among young workers. This indicates that the graduates tend to start their career in lower jobs and then improve their status in the labour market. Among older workers building the career takes other forms than the mobility (actual earnings increase related to worker`s experience and higher productivity or quality of work is not identified as mobility if it does not coincide with job changes). In the CR the trend of decreasing upward mobility with age is balanced, in Slovakia it is somewhat faster in the younger age. The unemployment of younger people in the Slovakia is almost twice as high as in the CR and the differences are significant also for qualified people[14]. It is likely that the graduates in Slovakia more often tend to accept a job at the lower level after their graduation but have good chances for an upward mobility in a couple of months or years.

The share of downward mobility not surprisingly goes in the opposite direction to the upward. In the CR the growing trend of downward mobility starts to be somewhat faster after the age of 50. This could be related to the acceptance of less demanding jobs before full retirement.

Figure 11: Shares of types of mobility by age (%, total for 2003-2012)



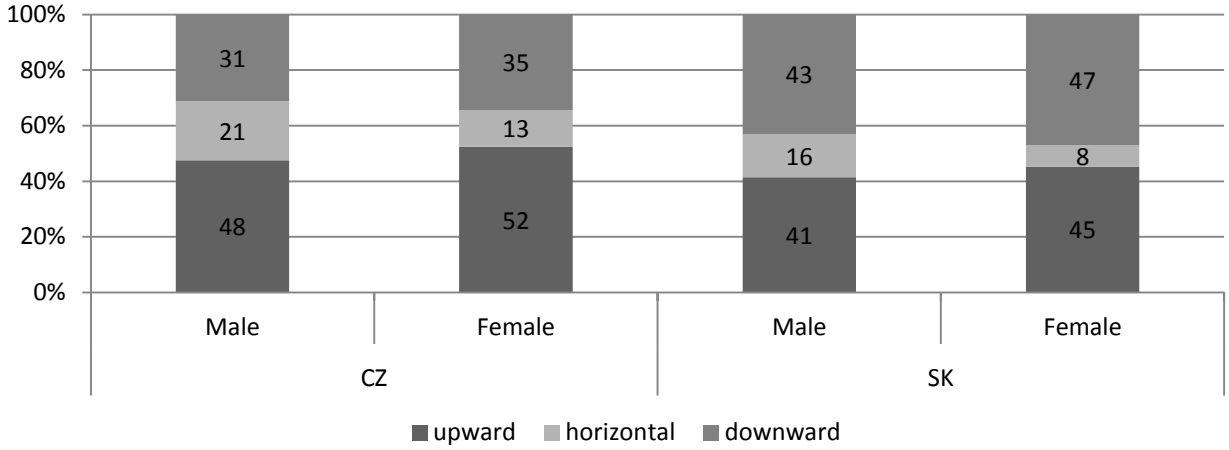
Source: LFS **[20, 27]**

Women experience in both countries higher share of upward as well as downward mobility compared to men who tend to have higher shares of horizontal mobility. The differences in upward mobility are highest in the younger age groups under 35 and they are most probably related to switches from less time consuming jobs which the women do while caring of children at the same time (part-time jobs, short-term jobs etc.). The highest differences in the downward mobility are observed after the age of 50. The earlier retirement age of women cause that more of them switch to part time jobs before and shortly after the retirement compared to men[15].

[14] The unemployment rate of people aged 15-24 was 34% in SK and 19.5 in CZ (2012, Source: Eurostat database, tsdec460).

[15] Only the cases when part-time jobs and temporary jobs were not preferred by women were counted as causes of upward and downward mobility

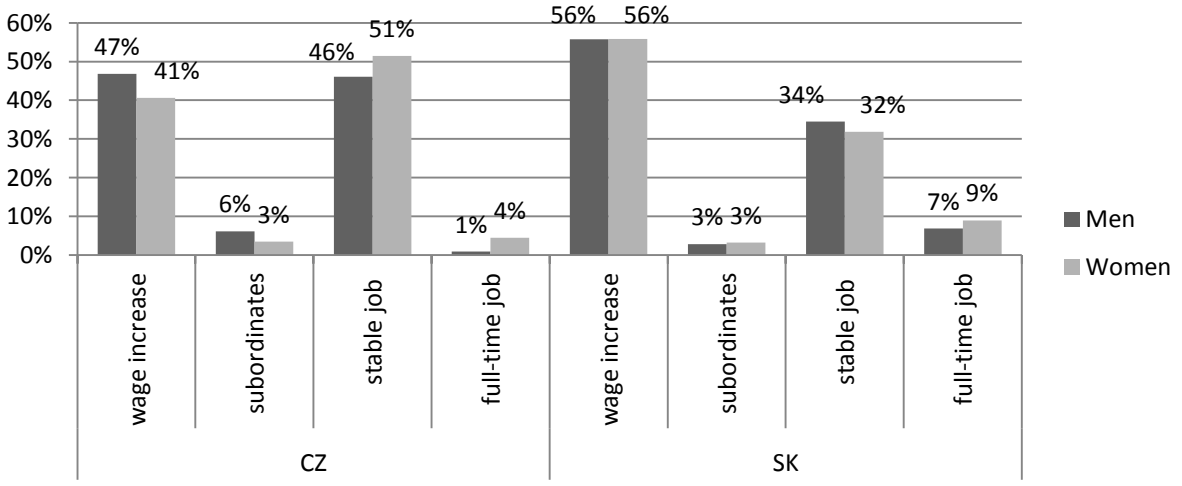
Figure 12: Shares of types of mobility by gender (%, total for 2003-2012)



***Source: LFS* [20, 27]**

This is reflected also in the causes of upward mobility. For women switch from temporary to a stable job and from part-time to full-time is more often the reason compared to men. Men get better jobs more often through higher wages and through obtaining a supervisory role over subordinates. For women these types of upward mobility are much less frequent in the Czech Republic, in Slovakia the differences between men and women are smaller.

Figure 13: Causes of mobility of men and women



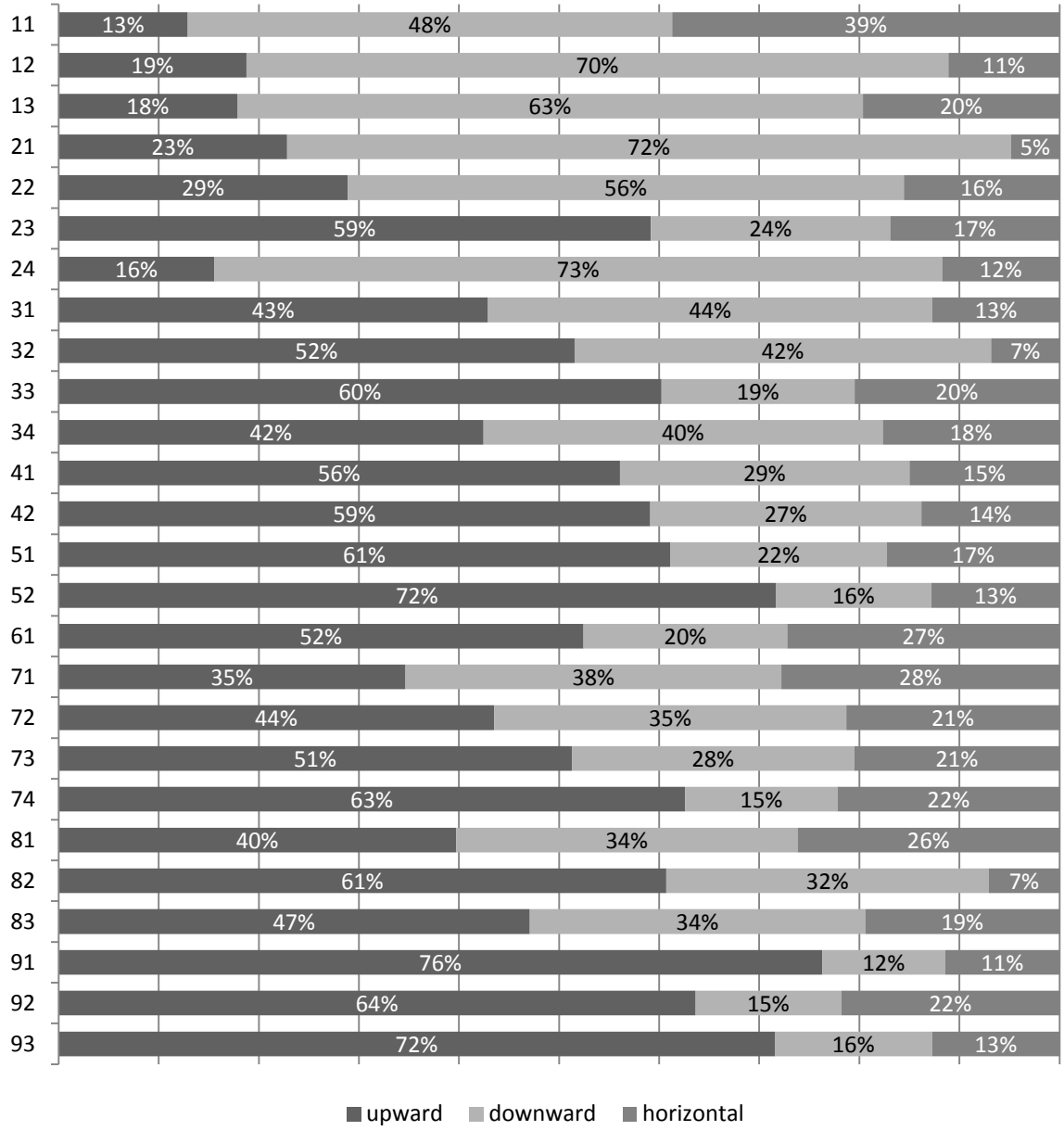
***Source: LFS* [20, 27]**

The level of education influences the patterns of mobility to some extent in the CR. People with tertiary education were in total for the whole period significantly less likely to suffer from downward mobility. In Slovakia the differences were not significant. In 2003-2008 the share of upward mobility in the total mobility was very similar for all education categories. It was significantly influenced by the economic crisis. In 2009 the share of upward mobility among people with tertiary education grew while for people with maturita it significantly decreased.

The opportunity of switching to a better job depends to a large extent on the occupation in which the person works. Higher shares of upward mobility can be found among less qualified professions (ISCO 8 a 9) and among clerks and occupations in trade and services. Among the higher qualified occupation higher shares of upward mobility are observed for teachers where the switch to a better job is usually related to getting a permanent position after the yearly fixed-term contracts which teachers usually get in the beginning of their career. The higher share of upward mobility for the less qualified occupation may be caused by the fact that these occupations do not provide many

career opportunities themselves and getting a better job more often means changing the occupation. More qualified occupations on the other hand offer other types of career prospects which are not related to changes of occupations. These may include responsibilities for more projects, more qualified work in the same occupation, managing a bigger team etc. which are related with higher actual wages which we are not able to capture by our methodology. Sicherman and Galor (1990) suggest that the occupations with more specific human capital experience lower interfirm mobility but a higher intrafirm mobility (as quoted in [16]).

Figure 14: Shares of types of mobility by occupation in the Czech Republic (%, total for 2003-2010)



Note: 2-digit ISCO-88 codes. The Slovak data show similar occupational trends but due to the sample size the breakdown is less reliable. ***Source: LFS*** **[20]**

People who experienced unemployment between jobs are less likely to move to a better job. People who were unemployed needed to accept any job. People who are employed change their occupation mostly if the new option is better than their current job which usually leads to an upward mobility. There are however also other causes of this fact.

Some people may become unemployed because they had not been able to perform well in their job and after a period of unemployment they got a job for which they were qualified enough.

In the competitive labour markets the period of unemployment can be observed as a stigma and the employers hire more likely people who are currently working in a lower position than people who are currently unemployed. The differences in chances for upward mobility between people who experienced unemployment and those who did not are higher in the Czech Republic than in Slovakia. The stigmatization caused by unemployment may be higher in the Czech Republic than in Slovakia because of much lower unemployment rate. There can also be a direct influence of the period of unemployment. People lose their skills while they are not working and this can then be an obstacle for acception of. In our sample we only worked with respondents who were employed in the beginning and in the end of the one year period therefore we are not able to verify this hypothesis.

4. Discussion

The analysis of occupational mobility patterns brings some interesting findings about its level, characteristics and influencing factors. It is however important to keep in mind that the definition of the occupational mobility itself is a conceptual construct and the results may be influenced by the way how the mobility is defined and measured. The definition is strongly predetermined by the availability of data. The level of mobility may be influenced especially by following aspects of the methodology:

- The level of occupational classification used
- The period among observations
- The way how occupations are coded in the survey (dependent/independent coding)
- The way how inter/intra company (or sector) mobility is counted
- The subsample used for analyses (if only people employed both at the beginning and the end were analyzed or the unemployed as well etc).

There are not many studies which measure the occupational mobility using the panel or longitudinal data and these which are available usually differ from each other at least in some aspects of the methodology. It is therefore difficult to evaluate the factors which influence the level of mobility in the country and among individuals and their character. The low share of mobility may be caused by stringent labour market legislation in the Czech Republic but for other reasons even lower level of mobility can be observed in Slovakia where the labour market regulation is more flexible. As the number of studies on occupational mobility from different countries is very limited it is not possible to construct a comprehensive international model or at least comparative analyses which would analyze how these factors work together.

It is also difficult to distinguish between voluntary mobility related to career building as opposed to involuntary fluctuation between jobs. We are able to only use the concepts upward and downward mobility as a rough proxy for this although there may be many cases where this concept would not work properly.

The study faces many of these methodological challenges. It can be perceived as one of the first attempts to measure the occupational mobility in the Czech and Slovak Republic and it brings some interesting findings summarized below which can be used in further research.

5. Conclusion

In our paper we made an attempt to measure the occupational mobility in the Czech Republic and in Slovakia and examine how the level and character of the mobility is influenced by the characteristics of the labour market, by the phase of the economic cycle and finally by the characteristics of an individual. The analysis showed that the occupational mobility can hardly be easily explained by one of these factors and that the factors co-influence it in quite a complex way.

In both the Czech Republic and Slovakia the rate of occupational mobility is relatively low compared to other countries for which some more or less comparable data were available (United Kingdom, France, Germany, Canada, US). This is in line with a commonly known experience of low mobility of the workforce also in geographical sense. In the Czech Republic one of the main contributing factors can be strong employment protection legislation. In Slovakia the labour market is more flexible but other factors may contribute to low mobility rates, in particular high unemployment level which discourages workers from voluntary quit of their current job. In both countries the work values surveys confirm a relatively high importance of job security and lower expectations related to work aspirations and career building which reflects in general a lower tendency of the workforce to build their careers through occupational mobility (European Values Survey, 2008).

Studies from other countries envisaged a pro-cyclic trend of occupational mobility. The Slovak data seem to be relatively consistent with these findings. The Czech mobility patterns differ from this, they maintained a very stable trend between 2003 and 2008 and the economic crisis caused a very high increase of mobility in 2009. In Slovakia the crisis did not influence the mobility rate so extremely. There are no studies available which would allow compare the development of occupational mobility in crisis and post-crisis years but the Czech and Slovak data show that the relation of occupational mobility to the economic cycle is not straightforward.

Empirical findings in the Czech Republic and Slovakia confirm that the patterns of occupational mobility are influenced by the amount of human capital accumulated. Highest shares of occupational mobility are among occupations where transferable skills are more important than specific skill, mostly managers, clerks and elementary occupations. The highest occupational mobility rate is among younger workers who have not yet gained too much job specific skills and therefore have less to lose when changing occupations. In both countries the level of occupational mobility is much higher among people who reached only basic education, in the Czech Republic the overall rate of occupational mobility is also significantly lower for people with tertiary education.

There is always some share of voluntary and involuntary mobility in the labour market. About a half of the mobility is upward which can be perceived as voluntary or at least positively evaluated in the retrospective. Still a not negligible (about a third in the CR and even more in SK) share of mobility leads to a worse job that the previous one. This is more often for people who experienced unemployment between the jobs than those who switched directly from one job to another. The economic crisis in 2008 influenced the upward mobility significantly. People who lost their job were more willing to take a job at a lower level than their former one in the recession because there was a higher risk of unemployment. The reaction of occupational mobility on the economic crisis differed by education level in the Czech Republic. The more educated segment of population affected by economic crisis has a better chance to take up less qualified jobs, therefore their occupational mobility increased. On the other hand, less educated workers were more often stayed in unemployment as a result of the crisis.

In the further research the relation of the general mobility and mobility of different subgroups to the economic cycle can be examined which would be in particular interesting after longer time series from the recovery period are available. A more extensive international comparative research examining both patterns at the micro level as well as macro factors such as labour legislation in the country will be important to reveal how various factors co-influence the level of occupational mobility.

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