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PAPER

Cross-Border Labour Mobility: Do East-West and East-East Labour Flows Differ?

Tiiu Paas • Mart Kaska

Abstract The paper focuses on the examining cross-border labour mobility between the neighbouring countries looking also for the answer to the question whether cross-border labour mobility can pursue win-win expectations of the increasing international labour mobility after the EU eastward enlargement. The aim of the paper is to outline differences in the socio-demographic and job characteristics of the people who participate in East-East and East-West cross-border labour mobility. The empirical part of the paper relies on the CV Centre database analysing cross-border labour mobility of Estonian people who have worked in a neighbour country – Finland and Sweden (East-West mobility) and Latvia or Russia (East-East mobility) relying on the CV Centre database. The results of the study show that ethnicity and education are important determinants in explaining differences between the East-West and East-East labour flows. Possible consequences of cross-border labour mobility are twofold. Cross-border labour mobility can support economic development of both source and target country but at the same time also can generate some threats of brain waste, particularly in the case of East-West labour flows.

Keywords Geographic labour mobility - EU enlargement - East-West and East - East labour flows - Neighbour countries - Estonia

JEL Classification J61 - O57 - R.23 - P52

1. Introduction

The model of the European Single Market has increased awareness towards the

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mobility phenomenon. There is broad political consensus regarding the freedom of movement for capital, goods, services as well as labour in the European Union (EU). Geographic labour mobility covers both trans-national migration as well as cross-border commuting. With the enlargement of the EU in 2004 and the gradual opening of labour markets to foreign workers, different forms of international labour movement besides permanent migration have received increasing attention. Non-permanent migration includes temporary, repeated, circular and contract migration, and also long-distance commuting between the countries.

Although much research activity has been devoted to trans-national migration as well as to different types of job-to-job migration since the eastward enlargement of the EU (e.g. Dustman et al, 2003; Zaitseva and Zimmermann, 2008; Kahanec and Zimmermann, 2010; Kahanec 2012; Kahanec et al 2014), the type of geographic labour mobility – cross-border mobility including commuting – has received less attention. Therefore this paper analyses cross-border labour mobility between neighbour countries focusing also to the question whether labour mobility can pursue win-win expectations of the increasing international labour movement after the EU eastward enlargement. The aim of the study is to outline possible differences in the socio-demographic and job-related characteristics of the Estonian people who have worked in neighbour countries Finland and/or Sweden (this is referred to as East-West mobility) compared to people who have worked in Latvia and/or Russia (this is referred to as East-East mobility). Finland and Sweden are among the wealthiest states in the EU, whereas Latvia and Russia are former socialist countries with lower level of economic development comparing to the Nordic neighbours.

International migration, especially labour outflows, is a hot topic for Estonia – a small EU Member State with a population of about 1.3 million. Since joining the EU, the yearly out-migration figures in Estonia have more than doubled compared to 2004, reaching around 4600 out-migrants in 2014 (Statistics Estonia, 2015). According to the Population and Housing Census 2011 data, the total number of Estonian people who are working abroad, is around 25 000 (Krusell, 2013, p.131). The most popular cross-border migration destination country for Estonia is the closest neighbour country Finland. Estonia is a country where the number of cross-border commuters per 1,000 inhabitants is one of the highest in the EU, reaching 15.8 (MKW Wirtschaftsforschung, 2009). The high levels of cross-border commuting and labour force out-migration signal that the country's institutions have to profoundly monitor international labour mobility in order to elaborate and implement policy measures that not only reduce labour outflows, but also attract labour force with a range of knowledge, skills and network connections in order to benefit from the free movement of labour in the long run. We suppose that empirical evidence based knowledge about cross-border labour movement that rely on different data sources provide valuable information for elaborating policy measures that can sup-

port economic and business development of both source and target countries. The empirical part of the paper relies on the CV Centre (Keskus) database – an online job portal bringing together jobseekers and vacant job posts. The advantage of this database is that the sample size is relatively large when compared to some other data sources and additionally, it provides possibilities to get rather detailed information about the jobs an individual held and other background information. This database makes it possible to analyse main socio-demographic characteristics (e.g. age, gender, education, language skills, ethnicity, etc.) and job characteristics (occupations, duration of employment) of the Estonian people who have participated in the cross-border labour mobility. Of course, there are also limitations of the data because of the data collection process. All employment histories are self-reported and thus it is not known which information has been left out or particularly amplified. But we believe that despite of some possible limitations this database provide additional valuable information beside of Labour Force Survey (LFS), European Social Survey (ESS) and other databases with much fewer observations for a country for permanent monitoring of cross-border labour mobility.

The paper consists of four main sections. The next section provides a short overview of the theoretical considerations of international migration in general and cross-border labour mobility in particular, and summarises some previous empirical evidence. Section three introduces the database and research methodology. The results of empirical analysis are discussed in the section four and conclusions are presented in the final section.

2. Framework for Analysing Cross-Border Labour Mobility

Cross-border labour mobility, especially migration, has been a hot research topic for decades and with numerous strands. Sjaastad (1962) established what has later been termed the "human capital theory of migration," a framework under which the decision to migrate is considered as an investment in the individual's human capital, taking into account the costs and benefits of the act of migration. Some years later Lee (1966) formulated a general framework for migration analysis, distinguishing between mainly social or economic push and pull factors in origin and destination regions, institutional or physical barriers to migration and personal factors affecting the decision to migrate. Lee's (1966) framework includes both interregional macroeconomic disparities as well as individual characteristics. Departing from an individual framework, Mincer (1978) looked at migration decisions in the family context. Massey (1990) argued that migration analysis should include the individual, household and community level factors, the latter being connected to macroeconomic disparities between regions in income and employment levels. Al-

though Lee (1966) and Massey (1990) already noted the importance of pre-existing networks in the country of destination, this aspect of migration has become a strand of research on its own, as migrant networks in the destination country lower the costs of moving abroad for new migrants. Following Roy's (1951) discussion that was developed into a model by Borjas (1987), the question of the positive and negative selectivity of immigrant workers has become an important field in migration research. Also, recent literature has looked at the magnetic effects of welfare benefits; for example, Borjas (1999) found evidence from the US that generous benefits attracted more immigrants with lower education.

Empirical analyses have developed theoretical frameworks from several perspectives. Jennisen (2005) showed that GDP per capita has a positive and unemployment rate a negative effect on net international migration in the EU. The young, male, single and more educated people from urban areas are more likely to migrate (e.g. Zaiceva & Zimmermann, 2008; European Commission, 2008). Delbecq and Waldorf (2010) show that pre-existing communities in the destination country are the most important predictor in East-West labour movements. These results confirm the findings of Pedersen et al. (2004), who found distance (both physical and cultural) between the source and destination country and pre-existing networks in the destination country to have a significant effect on migration decisions. Evidence about the effects of welfare benefits from the EU is controversial. De Giorgi and Pellizzari (2009) found that greater welfare benefits act as a magnet for immigrants as include higher wages and lower unemployment rates. Giulietti et al. (2011) find no significant effects of unemployment benefit systems on immigration for EU migrants, although some significant effects for non-EU migrants.

Commuting literature has mainly focused on intra-regional (e.g. rural-urban commuting) movements or, linked to our analysis, on specific border regions (e.g. Gottholmseder & Theurl, 2011; Greve & Rydberg, 2003). Based on European Labour Force Survey data, Huber (2011) shows that, compared to non-commuters, cross-border commuters are more often male workers with medium level education they more likely are employed in manufacturing or construction and less likely in non-market services. Comparing labour mobility from EU12 (the EU so-called new member states) to EU-15 (the EU so-called old member states) (referred as East-West mobility) with the EU15-to-EU15 commuters (referred as West-West mobility), Huber and Nowotny (2008) show that the East-West labour flows have a larger share of young people (aged 20–29) with medium education levels. East-West labour flows were more characterised by construction, machine operating and agricultural occupations and West-West flows by professionals, technicians, managers and market services workers (Ibid). In addition, high-skilled workers primarily commute between EU15 countries (West-West flows) and low-skilled between EU12 countries (East-East flows) or from EU12 to EU15 (East-West flows)

(MKW, Wirtschaftsforschung 2009).

Evidence for Estonia shows that after joining the EU, people with university degrees are significantly less likely to emigrate and people with primary education most likely to do so (Anniste, et al., 2012 a and b). In addition, the majority of emigrants in 2007 were non-specialists and there were several times more manual workers compared to professionals and managers that left Estonia (Eesti Pank, 2008). The European Commission (MKW, Wirtschaftsforschung 2009) reports show that commuting between Estonia and Finland takes place weekly or even monthly rather than daily. The most recent and profound monitoring of the Estonian population and its international mobility bases on the Population and Housing Census 2011 data (Statistics Estonia, 2013, Krusell 2013). Among Estonian people who are working abroad majority have secondary or vocational education - 36% of outward workers (with primary education 16% and higher education 23%) and they are mainly working as craft and related trades workers (47%; in comparison, their share in the Estonian labour market is only 13%). At the same time the share of occupations that require higher qualifications (like managers, professionals, technicians, etc) is rather low (only 20%) comparing to their sharein the Estonian labour market (66%) (Ibid; p.133). Thus, the Census 2011 data show that Estonian people who are working abroad are comparatively well educated but their working positions are often rather low.

3. Data and Methodology

The empirical part of the paper is based on the CV Centre (Keskus) database. CV Market Group (CV Keskus) is the largest jobseeker database in the Baltic States including information about the socio-demographic characteristics and employment history of jobseekers. This database provides and alternative information source for monitoring people's cross-border labour mobility in order to get better overview of migration processes and socio-economic and occupational characteristics of people who are involved in the international labour mobility.

The CV Centre (Keskus) data mainly base on individuals' self-reporting and thereby reflecting the information that people themselves present to the labour market. We are aware that the information provided to the CV Keskus might be somewhat biased in that sense that people who are searching for a job through the online portal are probably more active in the labour market looking for new the working positions. The database has also some other possible shortcomings that present limitations for conducting an empirical analysis. For instance, job seekers of some occupations (e.g. medical workers), who have other sources and networks for labour mobility, may be under represented. The database does not always allow to correctly linking the information about all socio-demographic and job-related information

of a person. For instance, it is not always possible to connect marital status and data about children to previous occupations because these variables are not linked to a year (i.e. year of marrying or having children/ages of children). The same applies to some language skills. Although the CV data does not include ethnicity directly, we use mother tongue as a proxy for this. Reported English language skills could be regarded as a proxy for some capabilities of a person, and therefore, we include this information in our analysis. There are also some shortcomings regarding to the classification of the reported jobs according to the accepted occupational standards and sectors. We follow the framework of the occupational classification of the U.S. Bureau of Labour Statistics for analysing job posts and occupations reported in the CV-s.

The following analysis is based on the CV Centre data from the end of January 2010. This was a period with extremely high unemployment (15.5%/107,000 people were unemployed in the 4th quarter of 2009 and 19.8%/137,000 in the 1st quarter of 2010) (Statistics Estonia, 2013). In fact, unemployment rates have decreased since the 1st quarter of 2010. Unfortunately, due to some technical reasons, later information of the CV Centre was not available. But we believe that the beginning of 2010 as a period characterised by high unemployment level is a suitable time for pulling the data. In addition, the dataset includes jobseekers that were working at that point in time. CV Centre (Keskus) data enables us to analyse past cross-border movements of workers as CVs include information about the past five jobs, but we cannot distinguish between past commuters (around 25% of the observations declared the duration of their most previous occupation abroad to last for up to three months) and long-term and short-term migrants (almost 2% of observations worked in a neighbouring country for at least 10 years).

Our sample consists of 8,456 CVs of individuals aged 15 or more who have been involved in the cross-border labour mobility. 6,019 (71.1%) individuals worked in Finland, 1,071 (12.7%) in Sweden, 1,070 (12.7%) in Russia and 296 (3.5%) in Latvia. Thus, 84% of labour flows from Estonia to neighbour countries are East-West flows and the remaining 16% are East-East flows. We estimate two logistic regression models to confirm and somewhat enlarge the results of the descriptive analysis of socio-demographic and job-related characteristics of East-West and East-East labour flows and to distinguish possible differences between these two groups of labour flows. In order to estimate regression models we had to clean our database once again due to the missing characteristics of some individuals. The total number of observations used by the estimating of logistic regressions was 5273.

The logistic models are as follows:

$$\log \frac{p(Y_i = 1)}{1 - p(Y_i = 1)} = \beta_0 + \sum_{k=1}^{K} \beta_k X_{ik} + u_i$$

(1)

Where $p(Y_i=1)$ is the probability that an individual $i = 1, \ldots, n$ worked in Finland or Sweden (East–West cross-border mobility) and $1–p(Y_i = 1)$ is the probability that an individual $i = 1, \ldots n$ worked in Latvia or Russia (East-East mobility); X_{ik} are explanatory variables that contain socio-demographic and job-related characteristics for individual i ($k = 1, 1,\ldots K$, K-the number of explanatory variables). All explanatory variables are categorical.

The models look at the odds ratios of East-West flows (to Finland and Sweden) compared to East-East flows (to Latvia and Russia). We consider the odds ratio as a measure of effect size describing the strength of association between the outcome (dependent variable) and an explanatory variable. The odds ratio represents the odds that an outcome (in our case East-West mobility) will occur if a certain characteristic of an individual is present, compared to the odds of the outcome occurring in the absence of that characteristic. The difference between the two models is that the first model regresses only to socio-demographic variables, the second additionally controls for the individuals' job-related characteristics.

4. Empirical Results

4.1. Main Socio-Demographic Characteristics

Cross-border labour flows from Estonia to its western (Finland and Sweden, e.g. East-West labour flows) and eastern (Latvia and Russia, e.g. East-East labour flows) neighbour countries have some similarities as well as differences in the socio-demographic and job-related characteristics of mobile people. We consider these characteristics of mobile people as possible determinants of cross-border labour mobility between the neighbour countries. Ethnicity and gender of cross-border workers show clear differences when comparing East-West and East-East cross-border labour flows from Estonia. The former group is clearly dominated by males and ethnic Estonians. Workers in Latvia and Russia have predominantly been non-Estonians; male workers show only a slight majority.

Appendix 1 shows that there are some differences in composition of East-West and East-East labour if we consider the period of starting foreign jobs dividing it to the periods before and after EU eastward enlargement in 2004. For example, before the EU enlargement, female and male workers were equally represented in Sweden. After Estonia joined the EU, male workers in Sweden clearly outnumbered females two to one. For other countries, differences were not that remarkable in this aspect. This interesting observation can probably be explained by the circumstances that Sweden opened its labour market to the Eastern workers immediately as the EU

enlargement processes started. Using new opportunities for cross-border labour mobility, some of Estonian women started to work in Sweden as babysitters and cleaning woman. After Estonia joined the EU also other working posts were more open for the mobile people from Estonia. As Sweden started to be an important foreign investor in Estonia, some working posts we related to the FDI coming to Estonia. Analysing the composition of the East-West and East-East labour flows according to the ethnicity, it is possible to conclude that non-Estonians are predominantly involved in the East–East cross-border labour mobility processes (65% in Latvia and 85% in Russia of the observed cases). Ethnic Estonians are mainly involved in the East-West labour mobility (over 75% of the reported cases). These results are not surprising taking into account good Russian language skills of the Estonian minorities.

Table 1 provides an overview of age groups by gender for each destination neighbour country. Among similarities, the largest share of mobile workers is aged 21–25. The only exception is female workers in Finland, where the youngest age group (15-20 years) is slightly but not remarkable larger. Female workers are also more represented in the two lower age groups compared to male workers in the case of Latvia and Russia (East-East flows). In general, based on the CV Centre data source, it possible to confirm that majority of the Estonian people working or have worked in the neighbour countries is young (the age below 36) people and they are predominantly men.

Table 1 Age groups and the gender of workers moved from Estonia to the neighbour countries (% of country totals)

	Latvia		Russia		Finland		Sweden	
	Female	Male	Female	Male	Female	Male	Female	Male
15–20	9.80	9.46	12.52	8.79	9.82	10.98	9.43	10.55
21–25	20.95	15.88	21.21	18.88	8.71	22.11	15.13	22.60
26–30	8.78	10.47	6.64	12.15	3.14	13.91	5.70	12.79
31–35	3.72	6.08	2.80	6.26	1.81	8.72	1.77	7.47
36–...	4.73	10.14	2.06	8.69	6.26	14.54	3.73	10.83
Total %	47.97	52.03	45.23	54.77	29.74	70.26	35.76	64.24
Total No. of observations	142	154	484	586	1 790	4 229	383	688

Source: CV Keskus database, authors' calculations.

Data presented in Table 2 indicate that labour flows from Estonia to Finland and Sweden (East-West flows) are characterised by the lower shares of highly educated people than labour flows to Latvia and Russia (East-East flows). Labour flows to Finland and Sweden are dominated by people with secondary and/or vocational education. The results of our analysis confirm previous findings of Huber and Nowotny (2008) that younger age groups are more mobile and people who are involved in the East-West labour mobility most likely to have medium levels of education.

Table 2 Educational groups on the basis of the gender of workers moved from Estonia to the neighbour countries (% of country totals)

	Latvia		Russia		Finland		Sweden	
	Female	Male	Female	Male	Female	Male	Female	Male
Primary	3.52	5.19	1.65	4.78	5.14	10.24	3.39	8.43
Secondary	28.17	30.52	24.38	31.06	46.09	44.69	36.81	43.60
Vocational	19.72	17.53	14.46	20.99	20.56	31.66	24.54	29.94
Higher	34.51	30.52	43.18	32.42	11.40	5.63	18.02	8.72
Unknown	14.08	16.23	16.32	10.75	16.82	7.78	17.23	9.30

Source: CV Keskus data, authors' calculations.

We also look at English language skills as an indication of potential characteristics of individual capabilities being aware that this information only reflects individuals' self-assessment of their foreign language skills. The share of Estonian people who moved to work in Sweden or Latvia have as a rule better English language skills comparing to people moved to Russia or Finland. The explanation behind this empirical evidence is that Russian and Finnish languages are widely spoken among Estonian people. Around 46% of Estonian people who have worked in Finland reported Finnish language skills. As the workers in Russia have been of an ethnic minority in 83% of the reported cases, it is understandable that these people know well Russian language as the language of their destination country and English skills might not be essentially necessary in that mobility case.

4.2. Occupations and Duration of Jobs

We also analyse possible differences in East-West and East-East labour flows according to the occupations and job durations of mobile people (Table 3). Detailed data about job categories is presented in Appendix 2. The percentages of Estonian construction and real estate workers in Finland and Sweden show the largest shares reaching over 40% and 30% respectively. Industrial manufacturing, customer service and agricultural posts have also been popular among workers involved in

cross-border labour mobility in the case of East-West flows.

Table 3 Shares of occupations of Estonian workers in neighbour countries (% of country totals)

	Latvia	Russia	Finland	Sweden	Total
Management, Professional, and Related Occupations	39.86	39.25	9.95	13.63	15.17
Service Occupations	11.82	9.91	6.89	11.76	8.07
Sales and Office Occupations	25.00	18.60	12.66	18.67	14.61
Natural Resources, Construction, and Maintenance Occupations	9.80	17.48	49.94	40.62	43.25
Production, Transportation, and Material Moving Occupations	13.51	14.77	20.55	15.31	18.91

Source: CV Keskus data, authors' calculations.

Relying on the occupation categories that are grouped following the framework of the occupational classification of the U.S. Bureau of Labour Statistics we also analyse the composition of labour flows from Estonia to neighbour countries according to the occupational groups. Table 3 illustrates that East-West labour flows are in most cases concerned with lower-skilled occupations and/or sectors (e.g. construction, maintenance, transportation, production, etc.). In the majority of cases, East-East labour flows concern managers and professionals, but also sales and office posts. These results are consistent with previous empirical findings (MKW Wirtschaftsforschung: 2009; Huber & Nowotny, 2008) that East-West flows in the EU are characterised by a high share of low-skilled workers, whereas high-skilled workers mainly move between EU15 (West-West mobility) or EU12 countries (East-East mobility). The results are also consistent with the results that base the Estonian Population and Housing Census 2011 data (Krusell 2013).

Table 4 presents information about the duration of jobs in a neighbour country. It is worth noting that job posts in Latvia and Russia lasted, on average, twice as long as in Finland and Sweden. In all four destination countries the largest share of durations falls between 4 and 6 months. For East-West flows we can say that shorter job durations are dominant. However, for East-East labour flows seasonal (up to 3

months) posts are seldom. Over a third of the people who worked in Russia or Latvia worked for more than two years on their most previous post in those countries. The same figures for Finland and Sweden are below 20%. Comparing job durations before and after Estonia joined the EU, we noticed that in all four destination neighbour countries, seasonal jobs were most seldom before Estonia joined the EU.

Table 4 Duration of job posts in neighbour countries (% of country totals)

Duration (months)	Latvia	Russia	Finland	Sweden	Total
…-3	13.18	9.25	27.43	24.28	24.23
4-12	28.72	24.77	36.85	40.06	35.44
13-24	21.28	19.44	17.05	16.90	17.48
25-48	17.91	21.68	13.36	11.39	14.32
49-…	18.92	24.86	5.32	7.38	8.53

Source: CV Keskus data, authors' calculations.

In conclusion, the results of our descriptive analysis of job-related characteristics indicate that East-West flows are rather concerned with lower-skilled and short-term occupations that are often seasonal. East-East labour flows consist of more educated people and as a rule their job duration is longer. Thus, more rich western neighbour countries mainly attract people with secondary and vocational education who have less-skilled working positions in the destination countries. But despite of that these internationally mobile workers are winners in economic sense getting as a rule much higher salaries they potentially can get in the home country. Eastern neighbour countries attract more educated and skilled Estonian labour force. These people as a rule get higher and well paid working positions in the destination countries and these working positions are often related to the foreign direct investments and/ or other networks.

4.3. East-West *versus* East-East Cross-Border Labour Mobility: Determinants and Differences

To confirm the results of descriptive statistics and to check for statistical significance of the differences between the East-East and East-West cross-border labour flows and their possible determinants, we estimate two logistic regression models looking at the odds ratios for variables concerning the East-West and East-East labour flows. Table 5 reports the odds ratios from the two models along with robust standard errors below them in brackets.

Table 5 Odds ratios from logistic regressions comparing East-West to East-East labour flows from Estonia

	Model 1	Model 2
Male	1.521***	0.960
	(0.178)	(0.137)
Ethnic minorities	0.060***	0.061***
	(0.007)	(0.008)
Age 15-20	(Reference group)	(Reference group)
Age 21-25	1.126	1.136
	(0.194)	(0.204)
Age 26-30	1.108	1.079
	(0.210)	(0.213)
Age 31-35	0.978	0.958
	(0.216)	(0.222)
Age 36-…	1.307	1.359
	(0.261)	(0.287)
Primary education	(Reference group)	(Reference group)
Secondary education	0.716	0.750
	(0.147)	(0.157)
Vocational education	0.839	0.892
	(0.178)	(0.195)
Higher education	0.130***	0.180***
	(0.029)	(0.042)
After joining EU	5.927***	4.040***
	(0.681)	(0.606)
English skills	1.102	1.193
	(0.133)	(0.153)
Managers and professionals	-	(Reference group)
Service	-	2.152***
		(0.454)
Sales and Office work	-	1.427
		(0.260)

	Model 1	Model 2
Natural resources, construction, maintenance	-	5.783***
		(0.899)
Production, transport, materials	-	5.711***
		(1.019)
Duration up to 3 months	-	(Reference group)
Duration 4-12 months	-	0.630**
		(0.110)
Duration 13-24 months	-	0.472***
		(0.092)
Duration 25-48 months	-	0.521**
		(0.109)
Duration over 48 months	-	0.375***
		(0.092)
Constant	8.660***	8.060***
	(2.150)	(2.669)
Number of observations	5273	5273
Akaike information criterion	2465.458	2286.785

Dependent variable equals 1 in case of East-West mobility and 0 in case of East-East mobility. *** denotes significance at 5% level.

Source: CV Keskus data, authors' calculations.

The first model includes socio-demographic variables and a dummy variable indicating whether working abroad took place before or after joining the EU. Additionally, second model includes job-related characteristics (occupations, durations).

Empirical results that rely on the Model 1 are generally in line with the results we got implementing descriptive analysis. Men have been 1.5 times more likely to work in Finland or Sweden (East-West flows) than in Latvia or Russia (East-East flows). These results do not show significant differences between East-East and East-West flows in the age groups of workers. Minorities, work about 17 (1/0.06) times less likely in Finland and/or Sweden then in Russia and/or Latvia. People with higher education are 7.7 (1/0.130) times less likely to follow the pattern of East-West cross-border mobility compared to East-East mobility. When controlling for job-related characteristics in Model 2, the odds ratio is reduced to 5.6, but it still confirms that East-West labour flows are as a rule characterised by the less educated workers than East-East flows. Both models confirm the obvious fact, that

East-West labour flows have increased more remarkable than East-East flows after the EU eastward enlargement in 2004. The EU eastward enlargement has been step by step accompanied by the free movement of labour within the EU. The results from Model 2 confirm that the East-East labour flows are more likely to comprise more high-skilled workers and higher working positions. Work duration is longer in the case of East-East comparing to the East-West flows. There is clear evidence that Estonian people to work more often on seasonal or short-term job posts in Finland and Sweden (East-West mobility) comparing to other two neighbour countries (East-East flows).

In conclusion, the results of empirical analysis show that East-East cross-border labour flows consist of more educated and skilled people and they jobs are more long-term compared to East-West labour flows. People who are working in Finland and Sweden are probably in many cases over educated taking into account that they often have job posts that are below their self-reported education and skills. This situation indicates some evidence of possible brain waste.

4. Conclusion and Discussion

The focus of the paper has been on the examining differences between the East-East and East-West labour flows observing the main personal and job-related characteristics of the Estonian people who have worked in the neighbour countries. The analysis relied on the CV Centre (Keskus) database, with is rather unique in sense of its implementation to the analysis of cross-border labour mobility. The empirical results of the study are in general in conformity with the theoretical framework of cross-border labour mobility as well as with previous empirical evidence of labour mobility in Europe after the EU eastward enlargement. Cross-border labour mobility in the case of Estonia as a small country with post-socialist path-dependence follows similar patterns compared to previous cross-border labour flows between larger and also richer countries and regions. Comparing the results of our study with the previous empirical studies of cross-border labour mobility that rely on several other data sources (e.g. Labour Source Survey, European Social Survey, Population and Household Census) show that CV Centre (Keskus) database offers an additional valuable data source for monitoring international labour mobility offering information for studying some other aspects related to labour mobility (e.g. frequency of cross-border mobility, repeated migration, etc.). This database needs future developments taking into account the first research lessons on cross-border labour mobility.

The results of our study show that ethnicity and education are the most important determinants in explaining differences in East-West and East-East cross-border labour flows. Minorities and people with higher education have more often participated in the East-East cross-border labour flows comparing to the East-West flows.

East-West labour flows are characterised by lower-skilled jobs in the fields of construction, agriculture, manufacturing and customer service of the destination countries comparing to the East-East labour flows. Internationally mobile people who participated in the East-East labour mobility had often higher working positions (managers and professionals) in the destination countries comparing to the East–West flows. In addition, labour flows to wealthier neighbour countries Finland and Sweden are characterised by significantly shorter durations of job posts. More than 60% of mobile people worked in wealthier neighbouring countries for less than a year. Younger people have been more mobile in the case of both East-East and East-West flows comparing to older age groups and there are no statistically significant differences between the two groups of neighbour countries.

The results of the study allow us to argue that possible consequences of cross-border labour mobility are twofold. Close proximity of wealthy neighbour countries (like Finland and Sweden) provides opportunities for Estonian workers to significantly increase their income and to avoid unemployment, particularly in the rural areas, and thereby diminishes pressure on the Estonian social system. The so-called Eastern neighbour countries like Latvia and Russia mainly attracted better educated and well qualified Estonian workers, who got new challenges for developing their skills and obtaining experience of working in a new business environment. As a rule, such workers also earned salaries above the Estonian average thereby creating good preconditions for some new consumption demand in Estonia. Cross-border labour mobility also provides possibilities to create new business networks and to get new working skills and experience that can be useful for continuing working career after returning to home country. Thus, in that sense cross-border labour mobility has a positive impact on the economic development of both the source and destination countries. The latter got active and well-motivated new labour force which supported their economic development. But on the other hand, cross-border labour mobility provides some concern of brain waste taking into account that Estonian people who are working in economically well-developed neighbour countries have often had jobs that were below their qualifications and previous working skills.

In order to achieve an expected win-win situation of the increasing international labour mobility, policy measures that support reducing possible skill mismatches and brain waste and create favourable preconditions for effective skills exchange should be further elaborated and implemented taking into account socio-demographic and job related characteristics of people involved in the cross-border labour mobility processes. The implementations of certain package of economic and psychological measures that create favourable conditions for return migration are undoubtedly important in order to gain from cross-border labour mobility and to provide new challenges for economic and business development of the countries.

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References

2010 Standard Occupational Classification, Standard Occupational Classification Policy Committee (SOCPC) Bureau of Labour Statistics

Anniste K, Tammaru T, Pungas E, Paas T (2012a) Emigration After EU Enlargement: Was There a Brain Drain Effect in the Case of Estonia? University of Tartu – Faculty of Economics and Business Administration Working Papers Series 87, 20 p.

Anniste K, Tammaru T, Pungas E, Paas T (2012b). Dynamics of Educational Differences in Emigration from Estonia to the old EU Member States. TRAMES, 168(60/61) 3: 219-235

Borjas GJ (1987) Self-Selection and the Earnings of Immigrants. The American Economic Review, Vol. 77 (4): 531-553

Borjas GJ (1999) Immigration and Welfare Magnets. Journal of Labour Economics, Vol. 17 (4): 607-637.

Constant AF (2013) Sizing It Up: Labor Migration Lessons of the EU Enlargement to 27. In: Gortázar C, Parra C, Segaert B, Timmerman C (eds) European Migration and Asylum Policies: Coherence or Contradiction. Bruylant, Belgium, p 49–77

de Haas H (2007) Migration and Development: A Theoretical Perspective. Bielefeld: COMCAD, p.82

Delbeck BA, Waldorf BS (2010) Going West in the European Union: Migration and EU-enlargement. Purdue University, Department of Agricultural Economics, Working Paper 10-4.

Dustmann C, Casanova M, Fertig M, Preston I, Schmidt CM (2003) The Impact of EU Enlargement on Migration Flows. Home Office Online Report 25/03, p. 76

Eesti Pank. Tööturu Ülevaade 2/2008.

Eliasson K, Lindgren U, Westerlund O (2003) Geographical Labour Mobility: Migration or Commuting? Regional Studies, Vol. 37 (8): 827-837

Elsner B, Zimmermann KF (2014, forthcoming) 10 Years After: EU Enlargement, Closed Borders, and Migration to Germany. In: Kahanec M, Zimmermann KF (eds) Labor Migration, EU Enlargement, and the Great Recession. Springer, Heidelberg, Berlin

EU Commission (2008) Employment in Europe, Chapter 3: Geographical labor mobility in the context of EU enlargement. Directorate-General for. Employment, Social Affairs and Equal Opportunities. Office for Official publications of the European Communities. Luxembourg, October 2008

Fihel A, Kaczmarczyk P, Okólski M (2006) Labour Mobility in the Enlarged European Union. Inter-

national Migration from the EU8 Countries. CMR Working Papers, No. 14/72: 96

Giulietti C, Guzy M, Kahanec M, Zimmermann KF (2011) Unemployment Benefits and Immigration: Evidence From the EU. IZA Discussion Paper No. 6075, p.17

Gottholmseder G, Theurl E (2007) Determinants of Cross-Border Commuting: Do Cross-Border Commuters within the Household Matter? Journal of Borderland Studies, Vol. 22 (2): 97-112

Greve B, Rydberg M (2003) Cross Border Commuting in the EU: Obstacles and Barriers, Country Report: the Oresund Region, University of Roskildens, Research Papers 11/03, p.44

Huber P (2011) Educational Attainment and Education-Job Mismatch of Cross-Border Commuters in the EU. WIFO Working Papers, No. 388, p.35

Huber P, Nowotny K (2008) Regional Effects of Labour Mobility, in European Integration Consortium, Labour Mobility in the EI in the context of enlargement and functioning of the transitional arrangements, EU Commission, Brussels, p.132

Jennisen R (2005) Macro-Economic Determinants of International Migration in Europe. Population Studies Series, Purdue University Press, 206 p

Kahanec M, Zimmermann KF (2010) (eds). EU Labour Markets after Post-Enlargement migration. Springer: Berlin, et al.

Kahanec M (2012) Labour Mobility in an Enlarged European Union. IZA Discussion Paper No 6465, 48 p

Krusell S (2013) Estonian Citizens Working Abroad. Census Snapshots. Statistics Estonia, Tallinn, pp. 129-139

Lee ES (1966) A Theory of Migration. Demography, Vol. 3 (1): 47-57

Massey DS (1990) Social Structure, Household Strategies, and the Cumulative Causation of Migration. Population Index, Vol. 56 (1): 3-26

MKW Wirtschaftsforschung, Empirica Kft. (2009) Scientific report on the mobility of cross-border workers within the EU-27/EEA/EFTA countries. Final report.

Mincer J (1978) Family Migration Decisions. Journal of Political Economy, Vol. 86 (5): 749-773.

Pedersen P J, Pytlikova M, Smith N (2004) Selection or Network liiEffects? Migration Flows into 27 OECD Countries, 1990-2000. IZA Discussion Paper, No. 1104,p 46

Roy AD (1951) Some Thoughts on the Distribution of Earnings. Oxford Economic Papers, New Series, Vol. 3 (2): 135-146

Shuai X (2012) Does Commuting Lead to Migration? Regional Studies, Vol. 42 (3): 237-250

Sjaastad LA (1962) The Costs and Returns of Human Migration. The Journal of Political Economy, Vol. 70 (5): Part 2: Investment in Human Beings, pp. 80-93.

Statistics Estonia database. Available at: http://www.stat.ee, (2013, 2015).

Statistics Estonia (2013). Census Snapshots, Tallinn, 2013

Zaiceva A, Zimmermann KF (2008) Scale, Diversity, and Determinants of Labour Migration in Europe. IZA Discussion Papers, No. 3595, p.37

Appendix 1. Overview of the some socio-demographic characteristics of Estonian people working in neighbouring countries, as a %

		Latvia	**Russia**	**Finland**	**Sweden**	**Total**
Gender	Female	47.45	46.64	28.07	34.39	30.91
	Male	52.55	53.36	71.93	65.61	69.09
Ethnicity	Estonian	21.90	5.85	62.69	56.09	56.05
	Non-Estonian	54.74	77.61	12.16	18.18	19.50
	Unknown	23.36	16.54	25.14	25.73	24.45
Age at leaving		27.058.394	25.929.104	28.275.391	26.751.286	27.864.053
Education	Primary	20.07	26.37	21.72	19.47	21.79
	Secondary	31.39	25.50	43.52	42.45	41.56
	Vocational	17.88	10.70	28.21	28.04	26.45
	Higher	30.66	37.44	6.56	10.03	10.21
Before joining EU		**Latvia**	**Russia**	**Finland**	**Sweden**	**Total**
Gender	Female	45.83	43.46	32.62	48.82	38.20
	Male	54.17	56.54	67.38	51.18	61.80
Ethnicity	Estonian	15.28	3.85	47.65	52.13	37.73
	Non-Estonian	58.33	75.00	12.35	16.59	28.26
	Unknown	26.39	21.15	40.00	31.28	34.01
Age at leaving		26.958.333	25.292.308	27.308.725	26.199.052	26.700.311
Education	Primary	22.22	22.69	24.03	22.27	23.37
	Secondary	34.72	28.85	40.27	46.45	38.66

		Latvia	Russia	Finland	Sweden	Total
	Vocational	19.44	13.08	27.38	23.70	23.45
	Higher	23.61	35.38	8.32	7.58	14.52
After joining EU		**Latvia**	**Russia**	**Finland**	**Sweden**	**Total**
Gender	Female	48.02	48.16	27.57	31.20	29.80
	Male	51.98	51.84	72.43	68.80	70.20
Ethnicity	Estonian	24.26	6.80	64.36	56.96	58.84
	Non-Esto-nian	53.47	78.86	12.14	18.53	18.16
	Unknown	22.28	14.34	23.50	24.50	22.99
Education	Primary	19.31	28.13	21.46	18.85	21.54
	Secondary	30.20	23.90	43.88	41.57	42.00
	Vocational	17.33	9.56	28.30	29.01	26.91
	Higher	33.17	38.42	6.36	10.58	9.55

Source: CV Keskus data, authors' calculations

.**Appendix 2.** Job categories of workers in neighbouring countries (frequencies and %)

	Latvia		Russia		Finland		Sweden		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Assisting / administration	14	5.11	55	6.84	88	1.18	54	4.63	211	2.17
Construction / Real estate	22	8.03	64	7.96	3,195	42.75	407	34.91	3,688	37.95
Electronics / Telecommunication	6	2.19	18	2.24	72	0.96	10	0.86	106	1.09
Energetics / Natural Resources	0	0	16	1.99	69	0.92	9	0.77	94	0.97
Finance	10	3.65	61	7.59	27	0.36	10	0.86	108	1.11
Media / New Media / Creative	18	6.57	26	3.23	24	0.32	8	0.69	76	0.78
IT / E-commerce	9	3.28	62	7.71	29	0.39	10	0.86	110	1.13
Management	31	11.31	49	6.09	57	0.76	19	1.63	156	1.61
Commerce	8	2.92	29	3.61	81	1.08	13	1.11	131	1.35

	Latvia		Russia		Finland		Sweden		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Human Resources / Training	2	0.73	16	1.99	46	0.62	19	1.63	83	0.85
Culture / Entertainment	7	2.55	33	4.10	35	0.47	12	1.03	87	0.90
Agriculture / Forestry / Fishing	3	1.09	4	0.50	550	7.36	69	5.92	626	6.44
Mechanics / Engineering	8	2.92	26	3.23	366	4.90	50	4.29	450	4.63
Sales / Retail	24	8.76	52	6.47	57	0.76	14	1.20	147	1.51
Law / Jurisprudence / Security	4	1.46	26	3.23	13	0.17	1	0.09	44	0.45
Public / Governmental service	1	0.36	10	1.24	8	0.11	4	0.34	23	0.24
Customer service	20	7.30	52	6.47	657	8.79	130	11.15	859	8.84
Healthcare / Pharmacy	4	1.46	11	1.37	87	1.16	27	2.32	129	1.33
Catering	15	5.47	20	2.49	236	3.16	32	2.74	303	3.12

	Latvia		Russia		Finland		Sweden		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Transportation / Logistics	16	5.84	33	4.10	326	4.36	57	4.89	432	4.45
Marketing / Advertising / PR	17	6.20	50	6.22	25	0.33	6	0.51	98	1.01
Manufacturing / Production	12	4.38	48	5.97	1,248	16.70	136	11.66	1,444	14.86
Education / Science / Research	12	4.38	30	3.73	58	0.78	27	2.32	127	1.31

Source: CV Keskus data, authors' calculations.

Appendix 3. Job categories according to the US Bureau of Labour Statistics

Management, Professional, and Related Occupations includes the following categories from CV Keskus data:

- Energetics / Natural Resources
- Finance
- Media / New Media / Creative
- IT / E-commerce
- Management
- Culture / Entertainment
- Mechanics / Engineering
- Law / Jurisprudence / Security
- Marketing / Advertising / PR
- Education / Science / Research

Service Occupations includes the following categories of from CV Keskus data:

- Human Resources / Training
- Public / Governmental service
- Healthcare / Pharmacy
- geographic labour mobility, neighbouring countries, cross-country labour flows, Estonia
- Catering
- Tourism / Hotels

Sales and Office Occupations includes the following categories of from CV Keskus data:

- Assisting / administration
- Commerce
- Sales / Retail
- Customer service

Natural Resources, Construction, and Maintenance Occupations includes the following categories of from CV Keskus data:

- Construction / Real estate
- Electronics / Telecommunication
- Agriculture / Forestry / Fishing

Production, Transportation, and Material Moving Occupations includes the following categories of from CV Keskus data:

- Transportation / Logistics
- Manufacturing / Production

Military workers were not reflected in CV Keskus data. Problems in categorizing mainly concerned such fields as electronics and telecommunications, energetics and natural resources, human resources and training, public and government services and advertising, marketing and PR. These categories made up less than 5% of all observations.