University of Tartu
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Tartu 2013

ISSN-L 1406-5967
ISSN 1736-8995
ISBN 978-9985-4-0752-3
The University of Tartu FEBA
www.mtk.ut.ee/research/workingpapers

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Abstract

The aim of this paper is to outline differences in the socio-demographic and employment characteristics of Estonian people who have worked in a neighbouring country – Finland, Sweden, Latvia or Russia. The empirical part of this paper relies on data from *CV Keskus* – an online employment portal bringing together jobseekers and vacant job posts. The results of our analysis show that different destination regions – the wealthier countries of Finland and Sweden (referred to as East-West mobility) and Latvia and Russia (referred to as East-East mobility) have attracted workers with different personal and job-related characteristics. Ethnicity and higher education are important determinants in explaining differences between East-West and East-East labour flows. Non-Estonians and people with a higher education have been less likely to work in Finland or Sweden.

JEL Classification: J61, O57, R23, P52

Key words: geographic labour mobility, neighbouring countries, cross-country labour flows, Estonia

[1]Acknowledgements. Financial support is acknowledged from the NORFACE research program on Migration in Europe - Social, Economic, Cultural and Policy Dynamics (project MIDI-REDIE, *Migrant Diversity and Regional Disparity in Europe*). The authors of the paper are also grateful to the support from the European Social Fund, project no 1.5.0109.10-006 „Occupational mobility in Estonia - involved factors and effects" in order to get possibilities to work with the unique CV Keskus database. Views expressed in the paper are solely those of the authors and, as such, should not be attributed to other parties.

1. INTRODUCTION

The model of the European Single Market has increased awareness towards the 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). The European Commission announced 2006 as the European Year of Worker Mobility, and has continued to consolidate new knowledge and practices as a means to facilitate geographic and job-to-job mobility for the European labour force.

Geographic labour mobility covers both trans-national migration as well as cross-border commuting. 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. Kahanec and Zimmermann, 2010), the type of geographic labour mobility – cross-border commuting – has received less attention. Our analysis provides some input in terms of research into cross-border labour flows, focusing on labour mobility from Estonia to its neighbouring countries.

Geographic labour mobility, 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 6,214 in 2011 and already 10,871 in 2012 (Statistics Estonia, 2013). With around 50% of migrants moving there each year, Finland is the most popular destination for Estonian migrants. Migration has increased significantly in all age groups with the exception of those aged 60 and more (Statistics Estonia, 2013). This means that the country is losing (at least temporarily) people of prime working age.

Besides increasing migration numbers, 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 most important target country for cross-border commuters is Finland. The high level of cross-border commuting and increasing migration numbers signal that the country's institutions have to profoundly monitor geographic labour mobility in order to elaborate and implement policy measures that on the one hand reduce permanent labour outflows, but also attract labour force with a range of knowledge, skills and network connections and to benefit from the free movement of labour in the long run.

The empirical part of this paper relies on data from CV Keskus – an online job portal bringing together jobseekers and vacant job posts. It makes it possible to examine the main socio-demographic characteristics (e.g. age, gender, education, language skills) and job characteristics (job categories and duration of employment) of Estonians who have worked in a neighbouring country – Finland, Sweden, Latvia or Russia. The former two countries are among the wealthiest states in the EU, whereas the latter two are post-Soviet states. It could be the case that differences in the socio-economic background of these two groups are accompanied by disparities in labour flows. Following this reasoning, the aim of this paper is to outline possible differences in the socio-demographic and job-related characteristics (age, gender, education, professions, etc.) of people who have worked in Finland and Sweden (this is referred to as East-West mobility) compared to people who have worked in Latvia and Russia (this is referred to as East-East mobility). We suppose that knowledge about cross-border labour movement that is based on empirical evidence provides additional information for elaborating policy measures that can support sustainable development and competitiveness of the Estonian economy.

We are aware that our database creates some limitations for our study (see section about data and methodology); nevertheless, we believe that the analysis will still generate valuable information. To the best of our knowledge, this is the first paper focusing on a comparative analysis of cross–border labour mobility based on such a database. Much research has also been done on East-West mobility in the EU, but East-East labour flows have been analysed less, as such movements are less frequent. This paper is the first attempt to monitor Estonian labour flows to all four neighbouring countries – Finland, Latvia, Sweden and Russia based on the CV Keskus database.

The following analysis consists of four main sections. The next section provides a short overview of the theoretical considerations of migration in general and cross-border labour mobility in particular, and summarises some previous empirical evidence. Section three introduces the database and research methodology. An overview of descriptive statistics and results from a logistic regression model examining labour flows from Estonia to neighbouring countries is presented in section four, and our conclusions are presented in the final section.

2. LITERATURE REVIEW: DETERMINANTS OF MIGRATION AND COMMUTING

Migration and commuting are two aspects of spatial labour mobility, and research usually focuses on one or the other, although there are examples of empirical works looking at factors that affect the choice of whether to migrate or commute (e.g. Eliasson et al, 2010) and the interaction between commuting and migration (e.g. Shuai, 2012). Our paper does not aim to look at determinants affecting the decision to work abroad, but rather at whether different destination regions are characterised by differences in personal and job-related characteristics of workers. However, we do provide a brief insight into theoretical aspects of labour migration along with empirical evidence of labour mobility from the EU, including movements between old member states (EU15) and the new member states (EU12) that joined the EU in 2004 or after.

Labour mobility, especially migration, is a vast area of research with numerous strands. Of earlier authors, 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. Thus, Lee's framework includes inter-regional macroeconomic disparities, as well as individual characteristics. Sjaastad (1962) established what has later been termed the "human capital theory of migration," a framework under which the decision to migrate is considered an investment in an individual's human capital, taking into account the costs and benefits of the act of migration. Departing from an individual framework, Mincer (1978) looked at migration decisions in the family context. Massey (1990) argues that migration analysis should include the individual, household and community level, the latter being connected to macroeconomic disparities between regions in income and employment levels. Although 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 explored 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 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) find evidence that greater welfare benefits act as a magnet for immigrants as do 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 correlations 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). To our knowledge, analyses of cross-border commuting at EU level are scarce. 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 who are more likely to be employed in manufacturing or construction and less likely in non-market services. Comparing EU12-to-EU15 (East-West mobility) with EU15-to-EU15 commuters (West-West mobility), Huber and Nowotny (2008) show that the former group has a larger share of young people (aged 20–29) with medium education levels who are more represented among construction, machine operating and agricultural positions. These results indicate a negative selectivity of workers in EU12-to-EU15 mobility. The latter group has larger shares of professionals, technicians, managers and market services workers. In addition, high-skilled workers primarily commute between EU15 countries and low-skilled between EU12 states or from EU12 to EU15 (MKW, 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). 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 report shows that commuting between Estonia and Finland takes place weekly or even monthly rather than daily. National labour market experts highlighted construction and agriculture as important fields of activity for Estonian workers in Finland (MKW, Wirtschaftsforschung: 2009).

Although our analysis offers only a basic insight into a rather unique database, we try to offer some contribution to research dealing with labour flows from EU12 to EU15 countries (East-West flows) and from EU12 (new member states) to other EU12 countries (East-East flows). In the latter case we also include Russia in the analysis. From this perspective, Estonia offers an interesting case as it neighbours with wealthy Nordic countries and post-socialist Eastern-European countries.

3. DATA AND METHODOLOGY

The empirical part of the paper is based on the CV Keskus database. CV Market Group (CV Keskus) is the largest jobseeker database in the Baltic States. The database includes information about the socio-demographic characteristics and employment history of jobseekers. The following analysis is based on 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. Thus, if it is assumed that unemployed people were looking for jobs through online employment portals, the beginning of 2010 is a suitable time for pulling the data. In addition, the dataset includes jobseekers that were working at that point in time.

CV 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). As noted before, we concentrate on countries that neighbour Estonia – Finland, Sweden, Latvia and Russia.

However, the database has some shortcomings that present some limitations for conducting an empirical analysis. First, it might not be representative of the population of mobile workers as some occupational fields (e.g. medical workers) may be under represented. Jobs abroad have also been categorized using a unique method, which makes them difficult to group into larger categories (e.g. sectors). The data include demographic information about each person – year of birth, education (with years of obtaining different levels reported), language skills, marital status and number of children. Unfortunately, we cannot 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 language skills. On the other hand, English language skills could be regarded as a proxy for capabilities or human capital in people who have worked in Estonia's neighbouring countries, and therefore, we include these skills in our study. Although the data does not include ethnicity directly, we use mother tongue as a proxy for this.

Our sample consists of 8,456 CVs of individuals aged 15 or more. The following analysis looks at their most previous job in a neighbouring country – 6,019 (71.1%) individuals in the sample worked in Finland, 1,071 (12.7%) in Sweden, 1,070 (12.7%) in Russia and 296 (3.5%) in Latvia. Therefore, 84% of labour flows from Estonia to neighbour countries are East-West flows and the remaining 16% are East-East flows. The main focus of the empirical part is on providing a descriptive overview of various workers and job-related characteristics of Estonian people who worked in neighbouring countries.

We also estimate two logistic regression models to confirm and somewhat enlarge the results of the descriptive analysis. The models use the following:

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

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 demographic characteristics

The ethnicity and gender of cross-border workers show some differences, when comparing East-West and East-East labour flows from Estonia. The former group is clearly dominated by males (nearly 70%) and ethnic Estonians (over 75% of reported data). Workers in Latvia and Russia have predominantly been non-Estonians (65% in Latvia and 85% in Russia of reported values), and male workers show only a slight majority.

Table 1 provides an overview of age groups by gender for each destination country. Among similarities, the largest share of workers is aged 21–25. The only exception is female workers in Finland, where the youngest age group is slightly larger. Coupled with data presented in Appendix 1, more than half of the observations belong to the first two age groups in each destination country. There are some differences between destination countries: Finland has attracted somewhat more workers aged 36 and above compared to the other countries; female workers are more represented in the two lower age groups compared to male workers in the case of Latvia and Russia; finally, Russia seems to attract less workers aged 31 and above than other countries.

In Table 2 we present the education levels of men and women upon leaving for the most previous job in a neighbouring country (additional data is presented in Appendix 1). Missing data mostly comes from young people that have not finished secondary education. Thus, the lowest education skills are more likely to be under reported in the results presented in Table 2. Despite this, the results indicate that workers in Finland and Sweden are clearly characterised by lower shares of highly educated people. Even though there is a greater share of highly educated female workers, the rates fall far behind those of Latvia and Russia. Labour flows to Finland and Sweden are dominated by people with secondary or vocational education. In addition, while people with primary education make up the smallest group in other countries, there have been more Estonian workers with primary education in Finland than workers with a higher education.

Table 1. Age groups on the basis of the gender of workers in destination 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.

Table 2. Educational groups on the basis of the gender of workers in destination countries, % on the basis of gender groups in each country

	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.

Job categories will provide some insight into differences in education, but before that we also look at English language skills as an indication of potential characteristics of individual capabilities. The results are reported in Table 3. Workers in Sweden and Latvia have better English language skills, and the differences with regard to Finland and Russia increase as the level of skill increases. One reason behind this is that Russian and Finnish are widely spoken among Estonians. As much as 46% of people who worked in Finland reported some Finnish language skills. In the case of Russia, the vast majority of ethnic minorities in Estonia are Russians. As the workers in Russia have been of an ethnic minority in 83% of cases, it is clear that these people know the local language of their destination country and English skills might not be necessary.

Table 3. English skills of workers in destination countries, % on the basis of country

Skill level	Latvia	Russia	Finland	Sweden	Average
Any	56.08	49.91	52.72	59.48	53.33
Mediocre	48.31	32.80	38.15	46.69	38.91
Good	30.41	19.16	20.55	29.97	21.91

Source: CV Keskus data, authors' calculations.

The descriptive analysis of CV Keskus data about labour flows from Estonia to its neighbouring countries confirms the findings of Huber and Nowotny (2008) that younger age groups are more mobile and East-West workers are most likely to have medium levels of education. Our results show that there do not seem to be remarkable differences between East-East and East-West flows in terms of age groups. The results also differ in the sense that male workers do not have a clear majority in East-East flows.

4.2. Job categories and duration

The following graph (figure 1) shows the shares of different professions of cross-border workers that constitute over 5% in at least one country of destination. The percentages of Estonian construction and real estate workers in Finland and Sweden show the largest shares reaching over 40% and 30% respectively. Industrial and manufacturing, agriculture and life sciences and customer service posts are all quite popular in Finland and Sweden. In that sense these two countries have very similar popular professions among Estonians.

Construction and real estate posts have been the most popular posts in Russia as well, but as the graph shows, the shares of different professions are much more evenly distributed. This is true for Latvia as well. Besides construction and real estate, more than 5% of the positions Estonians have taken in Russia are industrial/manufacturing, transport/logistics, finance, mechanics/engineering, customer service and education/science. For people who have worked in Latvia, management, sales, commerce, customer service and transport/logistics stand out alongside construction/real estate and industrial/manufacturing, and it is worth noting that management posts make up the largest share. However, since the sample includes about 20 times more observations from Finland than Latvia, the total number of sales and managerial workers in Latvia is approximately twice as low as in Finland. Detailed data about job categories is presented in Appendix 2. Russia is the only neighbouring country where, out of the sample, over 5% of labour migrants have worked in finance or education/science.

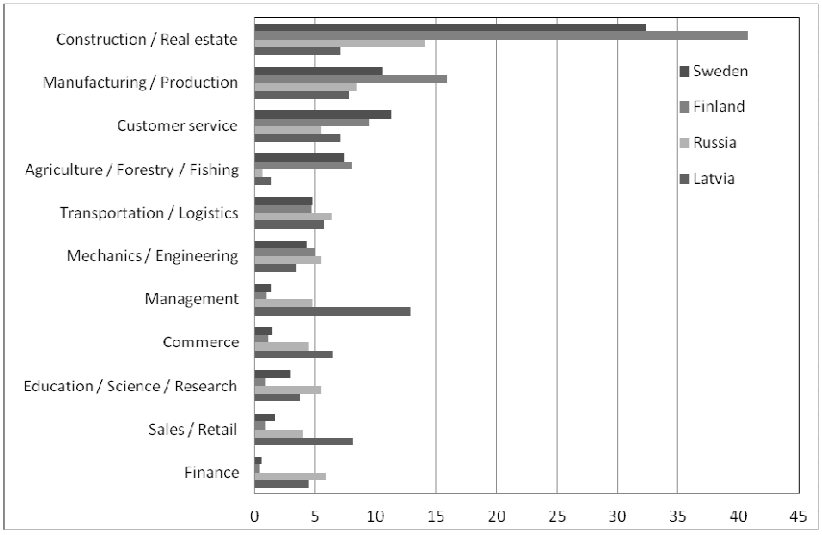

Figure 1. Workers in destination countries as a % according to job categories

The high shares of construction/real estate workers in Finland and Sweden are in line with the dominant groups of young workers without higher education. As for Latvia and Russia, management, finance and educational professions explain the share of workers with higher education. These data explain differences in educational background between East-East and East-West cross-border labour flows.

In further analysis we rely on job categories that are grouped following the framework of the occupational classification of the U.S. Bureau of Labour Statistics (details about categories are presented in Appendix 3). The composition of the categories grouped according to country in Table 4 illustrates that East-West labour flows are in most instances concerned with lower-skilled professions (e.g. construction, maintenance, transportation, production). 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 move between EU15 (West-West mobility) or EU12 countries (East-East mobility).

Table 4. Shares of grouped job categories in destination countries, as a %

	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.

We finally look at how long job posts in neighbouring countries have lasted. It is worth noting that job posts in Latvia and Russia lasted, on average, twice as long as in Finland and Sweden. However, extreme durations do distort the data – 95% (99%) of durations are up to 64 (131) months, but values reach up to 425. We have therefore grouped the data as presented in Table 5: (seasonal) jobs of up to 3 months, 4 months to one year, one to two years, two to four years and over four years.

Table 5. Duration of job posts in neighbouring countries, as a %

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.

Table 5 shows that while the majority of people that worked in Finland or Sweden did so for up to one year, the opposite holds true for people who worked in Latvia or Russia. In all four 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 most 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 fall below 20%.

Therefore, job-related characteristics indicate that East-West flows are rather concerned with lower-skilled and short-term occupations that are often seasonal. To confirm the descriptive statistics we set up logistic regression models and look at the odds ratios for variables concerning East-West and East-East labour flows.

4.3. Results from implementing logistic regression models

In order to test whether there are statistically significant differences between East-East and East-West cross-border flows according to personal and job-related characteristics, we estimate two logistic regression models. Table 6 reports the odds ratios from the two models along with robust standard errors below them in brackets. The dependent variable takes the

value 1 for East-West labour flows (to Finland or Sweden) and 0 for East-East flows (to Russia or Latvia). The first model includes socio-demographic variables and a dummy variable indicating whether working abroad took place before or after joining the EU. Model 2 includes job-related characteristics (grouped job categories and durations). Both models look at labour flows after 1991 (i.e. after Estonia regained independence). Excluding the younger age groups (below 25) from the analysis, to provide a higher probability that workers have obtained their highest level of education, has very little effect on the results; these results are not reported in the table below.

Table 6. Odds ratios from logistic regressions comparing East-West to East-East labour flows

	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)
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.

Empirical results that rely on the Model 1 are generally in line with results from the descriptive analysis (see sub-sections 4.1 and 4.2). Men have been 1.5 times more likely to work in Finland or Sweden than in Latvia or Russia. Minorities, however, about 17 (1/0.06) times less likely. Results do not show significant differences between East-East and East-West flows in the age groups of workers. People with higher education are 7.7 (1/0130) times less likely to follow the pattern of East-West cross-border labour 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 less educated workers than East-East flows. More importantly, grouped job categories explain gender differences resulting in an insignificant estimate for the gender variable in Model 2. This indicates that the occupational choice between genders is not random. The statistical significance of the dummy variable for the period of starting working abroad indicates in both models that after Estonia joined the EU, East-West labour flows have increased more than East-East flows.

Occupation groups show the strongest positive effects for Sweden and Finland in such fields as natural resources, construction, production and transport compared to managerial and professional posts. Therefore, results from Model 2 confirm that East-East labour flows are more likely to comprise high-skilled workers. Job posts in Sweden and Finland show a significantly lower tendency for posts to last more than 3 months compared to posts in Latvia and Russia. As durations increase the odds ratios get smaller indicating a higher probability of working in Latvia or Russia for longer periods. Again, these results confirm what we show in the previous section about job-related characteristics. There is a clear tendency for Estonians to work on seasonal or short-term job posts in Finland and Sweden (East-West mobility). East-East cross-border labour flows are more long-term compared to the less educated and short-term East-West labour flows.

5. CONCLUSION

This paper has looked at migration flows from Estonia – a country with increasing emigration and one of the highest cross-border commuting rates in the EU. This includes cross-border mobility to Eastern neighbouring countries Latvia and Russia (East-East mobility) and Western neighbours Finland and Sweden (East-West mobility). The study relies on the rather unique CV Keskus database, which makes it possible to monitor a person's five previous job posts. The focus of the paper was on examining differences between East-East and East-West labour mobility observing the main personal and job-related characteristics of Estonian people who have worked in neighbouring countries. We suppose that knowledge based on empirical evidence about cross-border labour mobility provides additional information for elaborating future policy measures that support the development and competitiveness of the Estonian economy.

The empirical results of the study have confirmed that different destination regions – the wealthier countries of Finland and Sweden on the one hand and the post-socialist countries of Latvia and Russia on the other – have attracted workers with different personal and job-related characteristics. The results of the study show that ethnicity and higher education are important determinants in explaining differences in East-West and East-East cross-border labour flows. Non-Estonians and people with higher education have been less likely to work in Finland or Sweden. East-West labour flows were significantly more likely to be

characterised by lower-skilled workers in fields such as construction, agriculture, manufacturing and production and customer service. East-East flows were more evenly distributed between professions and more likely to be characterised by higher-skilled occupations. In addition, labour flows to wealthier neighbouring countries (Finland and Sweden) are characterised by significantly shorter durations of job posts. More than 60% of observations worked in these countries for less than a year. In terms of the skills of workers, our results are consistent with previous literature that has looked at labour flows between different regions (MKW Wirtschaftsforschung, 2009; Huber & Nowotny, 2008) indicating that cross-border labour mobility in the case of Estonia as a small country with post-socialist path-dependence follows similar patterns compared to cross-border labour flows between larger countries and regions.

The results of the study also show that younger people have been more mobile in both East-East and East-West flows, but there are no statistically significant differences in age groups between the two groups of neighbour countries. The results of logistic regressions indicate that East-East and East-West flows do not differ on the basis of gender once job categories are controlled.

This work is still in progress. The CV Keskus database with five previous job posts enables us to look further into the career path and occupational levels of workers to obtain additional information about cross-border occupational mobility, spill overs and gains from possible return migration.

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Appendix 1. Overview of the main demographic statistics by country of origin, as a %

		Latvia	Russia	Finland	Sweden	Total
Gender (male)		52.03	54.77	70.26	64.24	66.90
Ethnicity	Estonian	26.35	11.78	62.83	54.34	54.02
	Other	47.97	68.22	11.28	16.90	20.48
	Unkown	25.68	20.00	25.88	28.76	25.50
Age	15-20	19.26	21.31	20.80	19.98	20.71
	21-25	36.82	40.09	30.82	37.72	33.08
	26-30	19.26	18.79	17.05	18.49	17.53
	31-35	9.80	9.07	10.53	9.24	10.16
	over 36	14.86	10.75	20.80	14.57	18.53
Education	Primary	4.39	3.36	8.72	6.63	7.63
	Secondary	29.39	28.04	45.11	41.18	41.90
	Vocational	18.58	18.04	28.36	28.01	26.67
	Higher	32.43	37.29	7.34	12.04	12.61
	Unknown	15.20	13.27	10.47	12.14	11.20
Number of observations		296	1 070	6 019	1 071	8 456

Source: CV Keskus data, authors' calculations.

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

	Latvia		Russia		Finland		Sweden		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Assisting / administration	10	3.38	51	4.77	72	1.20	45	4.20	178	2.11
Construction / Real estate	21	7.09	150	14.02	2 453	40.75	346	32.31	2 970	35.12
Electronics / Telecommunication	4	1.35	30	2.80	67	1.11	10	0.93	111	1.31
Energetics / Natural Resources	3	1.01	23	2.15	62	1.03	5	0.47	93	1.10
Finance	13	4.39	63	5.89	22	0.37	6	0.56	104	1.23
Media / New Media / Creative	14	4.73	26	2.43	17	0.28	8	0.75	65	0.77
IT / E-commerce	8	2.70	46	4.30	31	0.52	11	1.03	96	1.14
Management	38	12.84	51	4.77	57	0.95	15	1.40	161	1.90
Commerce	19	6.42	47	4.39	67	1.11	16	1.49	149	1.76
Human Resources / Training	4	1.35	22	2.06	46	0.76	26	2.43	98	1.16
Culture / Entertainment	5	1.69	30	2.80	31	0.52	13	1.21	79	0.93
Agriculture / Forestry / Fishing	4	1.35	7	0.65	486	8.07	79	7.38	576	6.81
Mechanics / Engineering	10	3.38	58	5.42	296	4.92	46	4.30	410	4.85
Sales / Retail	24	8.11	43	4.02	54	0.90	18	1.68	139	1.64
Law / Jurisprudence / Security	4	1.35	35	3.27	11	0.18	1	0.09	51	0.60
Public / Governmental service	1	0.34	13	1.21	3	0.05	6	0.56	23	0.27
Customer service	21	7.09	58	5.42	569	9.45	121	11.30	769	9.09
Healthcare / Pharmacy	7	2.36	37	3.46	69	1.15	25	2.33	138	1.63
Catering	14	4.73	24	2.24	190	3.16	27	2.52	255	3.02
Transportation / Logistics	17	5.74	68	6.36	282	4.69	51	4.76	418	4.94
Tourism / Hotels	9	3.04	10	0.93	107	1.78	42	3.92	168	1.99
Marketing / Advertising / PR	12	4.05	30	2.80	23	0.38	10	0.93	75	0.89
Manufacturing / Production	23	7.77	90	8.41	955	15.87	113	10.55	1 181	13.97
Education / Science / Research	11	3.72	58	5.42	49	0.81	31	2.89	149	1.76

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.

KOKKUVÕTE

Piiriülene tööjõuliikumine Eestist naaberriikidesse

Rahvusvahelise tööjõu liikumise omapäraks Eestis võrreldes Euroopa Liidu teiste riikidega on tööjõu kõrge piiriülene ränne. Siit tulenevalt oli uurimistöö eesmärgiks välja selgitada, kas naaberriikides töötanud Eesti inimeste sotsiaaldemograafilised ja ametiga seotud karakteristikud varieeruvad, võimaldamaks välja tuua piiriüleses tööjõu rändes Ida-Ida (Eestist Lätti ja Venemaale) ning Ida-Lääs (Eestist Soome ja Rootsi) suunaliste voogude eripärasid. Analüüs tugineb elektroonilise portaali CV Keskus andmebaasile. Tööjõu piiriülest rännet iseloomustav valim koosneb andmetest 8456 inimese kohta; neist 84% on hõlmatud Ida-Lääs ning 16% Ida-Ida suunalisse tööjõu liikumisse. Uurimistulemused näitavad, et eelkõige erinevad Ida-Ida ja Ida-Lääs suunalised tööjõu vood Eestist piiririikidesse inimeste hariduse ja etnilise kuuluvuse tunnuste alusel. Kõrgharidusega inimestel on šanss osaleda Ida-Lääs suunalises piiriüleses tööjõu liikumises ligi 6 korda väiksem võrreldes Ida-Ida suunalise liikumisega. Ka etniliste vähemuste puhul on šanss Ida-Lääs suunaliseks tööjõu liikumiseks oluliselt väiksem Ida-Ida suunalise liikumisega võrreldes. Statistiliselt olulised erinevused on ka välismaa ametikohtadel töötamise kestuses, mis näitavad, et võrreldes Läti ja Venemaaga (ehk Ida-Ida suunaline piiriülene liikumisega) töötati Soomes ja Rootsis väiksema tõenäosusega kauem kui kolm kuud, kusjuures mida pikemat ametikoha kestust vaadata, seda väiksemaks šansside suhe muutub. Vanuselise ja soolise tunnuse alusel piiriülesed tööjõu vood statistilises mõttes ei erine, kui logistilises regressioonimudelis on kontrollmuutujaks töötaja ametiala. Ametialade puhul näitavad tulemused, et Ida-Lääs liikumisi iseloomustavad pigem madalama kvalifikatsiooniga ametikohad kui Ida-Ida liikumisi.