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THE LABOUR MARKET PERFORMANCE OF YOUNG RETURN MIGRANTS AFTER THE CRISIS IN CEE COUNTRIES: THE CASE OF ESTONIA

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The labour market performance of young return migrants after the crisis in CEE countries: the case of Estonia

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Abstract

This paper extends the earlier literature on the effects of return migration by studying selection and labour market performance in terms of the wages of young returnees in particular. The topic is motivated by young people's various labour market issues and their high exposure to the consequences of the recent financial crisis. We use the Estonian Labour Force Survey data and the Estonian Population and Housing Census 2011 data in combination with the Estonian Tax and Customs Office data on individual payroll taxes. The econometric analysis focuses on the selection to temporary migration and estimation of wage premium to return, along with the decomposition of the returnee-stayer wage gap using the Oaxaca-Blinder approach and an investigation of wage premium dynamics over time after the return. The results generally show higher returns from temporary labour migration for young people relative to older people, and among youth the share of the unexplained fraction of the wage premium is also higher. These results imply a stronger role of experience gained abroad on earnings for youth.

JEL codes: F22, J31, J61

Keywords: return migration, labour market outcomes, Central and Eastern Europe.

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1. INTRODUCTION AND MOTIVATION

The recent EU eastward enlargement resulted in substantial East-West migration flows, especially of young and highly educated people from CEE countries (Kahanec and Zimmermann 2010). As a large share of migration processes is temporary by nature, return labour migration is particularly topical in this context. Existing studies on return migrants have conducted various and wide-ranging analyses of the impact of foreign work experience on the earnings of returning migrants (Barrett et al. 2001, Hazans 2008, Radu and Martin 2012, Zaiceva and Zimmermann 2012, Galgóczi et al. 2012, Lang et al. 2012, Barcevičius et al. 2012, White 2014). However, there is still relatively little known about the selection to return and post-return labour market outcomes in the context of young people. Focusing the research on young returnees is motivated by the recent enlargement of the scope of labour market issues faced by youth in Europe, including high unemployment rates, as well as the specific characteristics of labour market transitions experienced by young people, in particular labour market mobility both within and between economies (for an overview of the recent issues of youth in European labour markets, see O'Reilly et al. 2015). Recent economic shocks enforced a higher magnitude of labour market issues among youth, and young migrants were exposed to the effect of economic slowdown to a higher extent (Kahanec and Fabo, 2013).

Therefore, this study focuses on return migration specifically among youth (temporary migrants aged 15–35 years[2]) in Estonia. The case of Estonia is particularly relevant in terms of return migration studies, as the estimated rate of temporary migration is among the highest in Europe (Zaiceva and Zimmermann, 2012). Few studies have focused specifically on Estonian return migration processes. In particular, Hazans and Philips (2011) presented evidence on the characteristics of return migrants in the three Baltic States using Labour Force Survey data. Masso et al. (2014) analysed the effect of return migration on occupational choices and did not find any positive effects of foreign work experience on upward occupational mobility. Kauhanen and Kangasniemi (2013) specifically investigated the wage premium on temporary migration from Estonia to Finland and found Estonian return migrants earn on average 14% more than stayers.

The purpose of the given paper is to provide a thorough investigation of the youth return migration issue, in particular by contributing to the existing literature in two areas: thorough an analysis of the determinant characteristics of young returnees, and an in-depth examination of their performance after re-entering the domestic labour market through an investigation of the wage premium to return, and its composition and dynamics over time after the return. The econometric analysis focuses on selection to temporary migration and an estimation of the wage premium to return. An investigation of the nature and composition of the returnee-stayer wage gap applying an Oaxaca-Blinder decomposition, and an evaluation of the wage premium dynamics after re-entering the home labour market are performed in order to determine the specific characteristics of the post-return earning profiles of young returnees from different perspectives.

The analysis relies on two data sources: Estonian Labour Force Survey (EE-LFS) panel data for 2007–2013 and Estonian Population and Housing Census data (EPHC) conducted in 2011. Within the Estonian Labour Force Survey, return migrants are identified using the rotating panel nature of the data. The second more novel data from the Estonian Population and Housing Census dataset enables us to identify a much larger number of return migrants and

[2] The terms "return migration" and "temporary migration" are used interchangeably in the paper.

through linking the return migrant data with the Estonian Tax and Customs Office database on individual payroll taxes allows us to trace the dynamics of the wage premium to return migration over time.

In terms of sample definition, while the more common definition identifies young people using the age group 18–24 years (used among others by ILO, OECD, Eurostat), we employ a wider age category by including those aged 15–35 years. This approach is partly related to ensuring a reasonable sample size of young returnees or temporary migrants working after return. For instance, the average rate of unemployment for returnees is approximately three times higher than the total population (Radu and Martin, 2012). A similarly wide age bracket has been used also in earlier studies of youth labour market performance; for example, in a study of youth entrepreneurship (Kew et al. 2013).

However, we admit the possible heterogeneity of the respondents within the loose age group, as "younger" youth at the earliest stages of labour market entry are expected to differ from "older" youth both in terms of individual profile characteristics and labour market outcomes. To ensure the robustness of estimates based on a broad age definition, and to possibly detect the variation of results within the young sample, we applied the same empirical strategy to the group aged 15–35 and separately to the age subgroups 15–24 and 25–35 years, referred to as "younger youth" and "older youth". The use of different age brackets in different contexts is justified by the theoretical approaches that consider youth transition to labour market as a process, rather than a single step at some age (Arnett 2006, Arnett and Hughes 2012).

The nature (employment and non-employment motives) of temporary migration is an issue particularly in the young returnee group. Zaiceva and Zimmermann (2012) found that among return migrants, the proportion of students studying abroad a year ago and re-migrating after graduation is substantial. Since our research focuses on a youth sample, we may expect a considerable share of returnees to experience non-employment temporary migration, unless we limit the definition of returnees to purely work experience abroad. While the definition of return migrants in the LFS dataset is of solely employment nature (working abroad), the definition applied in the EPHC also includes those respondents temporarily staying abroad due to other reasons (primarily studies). This difference needs to be carefully considered in the interpretation of research results.

The rest of the paper is structured as follows. The next section discusses the two datasets used within the analysis (Labour Force Survey and Estonian Population and Housing Census), outlining the differences in the scope of population coverage, information on foreign labour market experience and sample selection. The third section presents the econometric methodology applied, including the selection to return equations, Mincerian type wage regression and return migration wage premium decomposition using the Oaxaca-Blinder approach. The fourth section presents the findings and the final part outlines the main conclusions and suggests possible policy implications from the analysis results.

2. DATA

The empirical analysis within this paper is performed based on two sources of data: the Estonian Labour Force Survey (EE-LFS) panel dataset for 2007–2013 and the Estonian Population and Housing Census (EPHC) conducted in 2011. The LFS dataset has been previously relied on in international migration studies, including Radu and Martin (2012). A number of return migration studies refer to the survey as the key source of data, namely

Dustmann and Weiss (2007) studied temporary labour mobility in Great Britain relying on the UK-LFS. Hazans and Philips (2010) investigated the return migrants on the Estonian, Latvian and Lithuanian labour markets using LFS data. Nevertheless, given the specific focus of this paper on the return migration of young people, the wide range of data available in the EE-LFS will shed more light on the key determinants of the young returnees and enable us to identify new aspects of temporary migration processes.

In order to derive a proxy for returnees, we have applied the panel data approach, similar to Hazans and Philips (2010), and the narrow definition of return migrant, namely that the person has worked abroad for at least one quarter over the last two years (the latter is the period over which the person's labour market history is available). As the main returnee identification variable was considered foreign work experience, the temporary migration process in the context of EE-LFS data is by nature associated with employment; that is, returnees have necessarily worked in a foreign country. The Estonian LFS survey is undertaken as a rotating panel, where each individual is surveyed for 2 consecutive quarters, and then after a 2-quarter break again surveyed for 2 quarters. The survey also includes information about the labour market status and country of employment one year before (Pettai and Lelumees, 2013). In our definition of return migration we have used all available information on past labour market performance in order to identify as many return migrants as possible. Therefore, following the definition of returnees and through merging the EE-LFS datasets from seven consecutive years has allowed us to enlarge the total sample of return migrants to 1,425 observations, including 484 young respondents aged 15–35 years (186 individuals aged 15–24 and 298 aged 25–35).

The Estonian Population and Housing Census statistics is an original source of data in terms of return migration studies. It was recently referred to in the analysis of migration and related labour market phenomena (e.g. Tammaru and Kulu 2003, Tammaru and Kontuly 2011*),* although the current study is the first in Estonia using EPHC to study return migration. Since the original Census dataset does not include the variable of level of earnings among respondents, the baseline data was merged with the Estonian Tax and Customs Office statistics on individual payroll taxes for 2006–2011. Compared to the classical data used in return migration studies, the compound dataset is innovative in terms of both sample selection and analysis possibilities. Covering the entire population of Estonia, the EPHC data captures all Estonians who were exposed to temporary labour mobility. The definition of a returnee, applied in the context of the Census data, is significantly broader compared to the EE-LFS approach, and identifies returnees as those who have returned from a foreign country within the last five years. However, since the EPHC questionnaire does not specify explicitly the reasons for living abroad, the returnee sample includes those staying in a foreign country due to reasons other than work (e.g. studies), and therefore, temporary migration is not only associated with employment.

The completeness of the Census dataset along with its broader definition of return migrants in respect to time and the motivation for the mobility, allowed us to detect a much higher number of returnees, namely 9,398 respondents in the young age group and 5,882 among those older than 35 years. Since the EPHC data contains the length of a person's stay in Estonia after return, a set of dummy variables representing the number of years since re-entering the domestic labour market was derived, allowing us to trace returnee performance over time. This provides considerable benefit for the analysis through identifying the dynamics of young returnees' earnings over five years following re-entering the domestic labour market, allowing us to investigate whether the benefits of return migration have a

certain time-dependent pattern. A summary of the key features of the given databases is presented in Table 1.

Table 1. The main characteristics of the EE-LFS and EPHC datasets

Data source	*Definition of a returnee*	*Number of returnees*	*Application*
Estonian Labour Force Survey (EE-LFS) panel 2007-2013	- "**Narrow**" **approach**: person who has worked abroad for at least one quarter over the last two years. - Purely associated with employment in a foreign labour market.	Total sample –1,425 observations Young respondents: 15-35 years – 484 observations, including: 15-24 years – 186 25-35 years – 298	Returnee selection, wage premium to return and its composition.
Estonian Population and Housing Census (EPHC) 2011 *(merged with the Estonian Tax and Customs Office data on individual payroll taxes)*	- "**Broader**" **definition**: returnees are those who have returned from a foreign country within the last five years. - Temporary migration is not only associated with employment (e.g. also studies, other reasons for foreign labour market stays are included as well).	Total sample – 15,280 respondents Young respondents (15-35 years) – 9,398 observations, including: 15-24 years – 2,554 25-35 years – 6,844	Analysis of wage premium dynamics over time after return.

The combination of the EE-LFS and EPHC data sources facilitates the analysis of returnees from several perspectives, and applying different definitions of return migrants also allows us to investigate the focus group from various perspectives. However, due to the considerably different scope and nature of how returnees are described when working with different datasets, a comparison of EE-LFS and EPHC returnee profiles should be undertaken in order to justify the conjunction of the results obtained based on different data sources and the coherence of the final conclusions.

The table in Appendix 1 presents the basic descriptive characteristics of younger and older return migrants estimated using both EE-LFS and EPHC data. Considering the significant distinction in the definition of returnees, it is expected that the descriptive statistics differ in terms of values across age groups. We additionally present the corresponding set of descriptive statistics for those respondents that, according to our data, never experienced foreign migration (referred to as stayers), in order to both compare the latter with returnees and relate the characteristics of the stayers based on LFS and Census datasets, as they are expected to be comparable.

As shown in Appendix 1, returnee sample characteristics differ across the two databases. On average, return migrants are nine years younger in the EPHC sample (32 years compared to 41), as with stayers, who are eight years younger on average in the Census dataset (37 years relative to 45 in LFS). While capturing the entire population, the EPHC samples of returnees and stayers include under and postgraduate students, and therefore, the average age of respondents in this dataset is younger. This assumption goes in line with Zaiceva and Zimmermann (2012), concluding that obtaining education abroad and later entering the domestic labour market is a common practice.

Along with average age, a set of other variations in the sample may result from the broader selection of respondents including a significantly higher share of young people in the EPHC

sample. More specifically, returnees aged 15–35 more frequently hold a higher education (44.1% compared to 13.9% in the EE-LFS dataset), as a significant proportion of young return migrants studied abroad and entered the domestic labour market after graduation. Young return migrants from the EE-LFS sample are more frequently married (39.0% compared to 28.8% in EPHC data), which is quite natural, as the LFS sample captures those working, and therefore, those whose migration decisions are also relatively more affected by family-related variables.

Moreover, since the EPHC sample includes those who returned during the last five years, it makes it possible to capture respondents who experienced temporary migration once along with those engaging in migration on a regular basis, while the more narrow time spell implied by EE-LFS does not allow to examine one-time temporary mobility to such an extent. Therefore, the lower proportion of young men in the Census returnee sample (46.14% compared to 71.82% in the EE-LFS dataset) could result from capturing those respondents who worked abroad non-regularly (one-time mobility), which is more common for women, while temporary male migrants commonly experience regular (seasonal, cyclical) mobility.

Consistent with previous results from Vadean and Piracha (2009), and Smoliner et al. (2012), returnees are more likely to be unemployed compared to those without foreign work experience. This statement is supported by estimates from both datasets; however, the share of unemployed young and older returnees in the LFS sample is considerably higher relative to the EPHC estimates (for young people respectively 25.8 and 10.0%), while the share of inactive respondents in the latter is greater (22.3 and 29.8%), resulting from the broader definition of returnees applied in the Census data, and therefore, capturing not only temporary migration for employment reasons, but also non-employment related motives.

A further division of the young returnee group into two age subgroups revealed a remarkable difference in returnee-stayer educational attainments across age cohorts both in the EE-LFS and EPHC samples. More specifically, younger returnees have a better educational profile, as the LFS-based estimated fraction of those with lower education among younger returnees is 16 percentage points lower than among stayers of the same age category, while for the older returnee-stayer framework, the difference is only 6 percentage points. EPHC data reported the differences as 15 and 10 percentage points respectively. However, in the group aged 25–35, superior educational attainments among returnees compared to stayers are visible only in the EPHC sample (share of higher education degree holders among return migrants is 19 percentage points higher), while the LFS data showed a lower proportion of university degree holders among returnees aged 25–35 (by 7 percentage points compared to stayers).

Therefore, the empirical evidence from the sample, which includes students, supports the idea that the educational attainments of those experiencing temporary migration due to various reasons are better compared to stayers among both the younger and older youth. Hence, while temporary labour mobility at the youngest age in the LFS sample was disadvantageous for the educational profile in older years, the EPHC sample clearly showed that return migrants in the loose definition are positively selected in terms of education in all age categories compared to stayers.

3. EMPIRICAL STRATEGY

The paper aims to fulfil a double task. The first part of the analysis will focus on identifying the key determinants of young return migrants and the selection to return patterns. The main

question in this is who the young Estonian returnees are, and how they differ from permanent migrants and stayers. The question of selectivity into return is of major importance in the context of the wage assimilation of returnees. A number of empirical studies, including Kahanec and Zimmermann (2010), Pungas et al. (2012), Kahanec and Kureková (2013), and White (2014) have been devoted to the analysis of selection to return patterns and their interrelation with post-return integration outcomes.

The descriptive statistics estimates presented in the previous section, in line with earlier empirical studies, have proved that young returnees are different from stayers in terms of socio-demographic characteristics. In order to investigate the patterns of selection to return, the binary choice (logistic) model was employed. Here we will consider two selection patterns: who are the migrants coming back (returnee-migrant selection) and who are the returnees compared to stayers (returnee-stayer selection). The models will be estimated based on the EE-LFS data.

The functional form of the returnee-stayer and returnee-migrant selection models are respectively as follows:

$$P\{y_i = 1|X_i\} = \alpha_i + \beta X_i^{'} + \varepsilon_i \text{ and}$$
$$P\{z_i = 1|X_i\} = \alpha_i + \beta X_i' + u_i, \quad (1)$$

where y_i is a realization of random variable Y_i taking value 1 if the respondent is a return migrant and 0 if a stayer, while z_i is a realization of random variable Z_i being 1 if the respondent is a returnee and 0 if a permanent migrant. X_i is the vector of control variables including socio-demographic, educational and employment characteristics of respondents, β is a vector of corresponding point estimates, and ε_i and u_i are residual terms.

The second research task includes a number of relevant dimensions, namely: the identification of the effect of return migration on the wages of young people, the nature and composition of the identified premium and the wage premium dynamics over time after returning. An investigation of the wage premium to return is performed through the classical Mincerian type wage regression (1974) with a logarithm for the average monthly wage as a dependent variable and conditioning on a set of individual socio-demographic, educational and employment characteristics, expected to affect earnings:

$$logW_i = \alpha_i + \beta_1 RET_i + \beta_2 MIGR_i + \beta_3 age_i + \beta_4 age_i^{\,2} + \gamma X_i' + \varepsilon_i, \quad (2)$$

where RET is a return migrant dummy variable, $MIGR$ is a binary variable for current migrants (non-returnees), age and age^2 are basic controls from the classic Mincerian model, X is a vector of other covariates considered in the model and their respective coefficient vector γ, and ε_i represents an error term. The OLS estimates will be produced based on EE-LFS data.

The nature and composition of the wage gap, identified in the OLS regression, is addressed in the paper through Oaxaca-Blinder decomposition methodology. The method will allow us to differentiate the wage gap that arises from personal characteristics and employment decisions taken by return migrants and stayers from the wage difference that cannot be explained by these factors. The Oaxaca-Blinder decomposition technique is widely applied in the study of wage gaps between various groups; however, only a few of them have used the method to study the potential premium wage from return migration (Hazans 2008). We refer to the classical decomposition methodology introduced by Oaxaca (1973) in order to explicitly

examine the contribution of separate factors to the overall wage gap. Therefore, our baseline wage decomposition equation is as follows:

$$\overline{logW_r} - \overline{logW_s} = \beta_s(\overline{X_r} - \overline{X_s})' + \overline{X_r}'(\beta_r - \beta_s), \quad (3)$$

where $\overline{logW_r}$ and $\overline{logW_s}$ are the means of the logarithm of the returnee's and stayer's earnings respectively; $\overline{X_r}$ and $\overline{X_s}$ are the vectors of the mean values of the explanatory variables and β_r and β_s are the vectors of the corresponding coefficients of covariates of returnees and stayers respectively. The first term on the right hand side refers to the explained difference in wage, resulting from the different characteristics observed for returnees and stayers, while the second term indicates the unexplained earnings gap, emerging from the difference in the yields of returnees and stayers.

The third dimension of the wage premium investigation, aiming to identify the time dependency of benefits to return migration among young returnees, is addressed through controlling the wage level for return migrants for five consecutive years after re-entering the domestic labour market. The wage dynamics study is based on the EPHC database completed with a wage variable derived on the basis of individual payroll taxes from Estonian Tax Office data.

Our wage dynamics model, like the OLS regression (2), relies on the Mincer wage equation and controls for the same set of factors as model (2), but is also conditional on two sets of interaction terms in order to track wage changes after return in groups of young and older people. More specifically, we add interaction terms between the years after return and a young returnee dummy variable (the first set of interaction terms) and an older returnee binary variable (the second set) to monthly wage regression in order to investigate wage premium time dependency separately in the two age groups. A similar approach was applied by Hirsch et al. (2013) to analyse wage assimilation among ethnic German immigrants to Germany.

Hence, the wage dynamics model has the following formulation:

$$logW_i = \alpha_i + \beta_1 age_i + \beta_2 age_i{}^2 + \gamma_i X_i{}' + \\ + \delta_{ji} RET_i^{young} YFR_{ji}{}' + \theta_{ji} RET_i^{older} YFR_{ji}{}' + \varepsilon_i, \quad (4)$$

where the logarithm of monthly wage W_i is a predicted variable, $YFR_{ji}{}'$ that denotes a vector of years from re-migration dummies ($j = 0,1 \dots 5$ corresponds to number of years elapsed from re-entering domestic labour market), δ_{ji} and θ_{ji} are vectors of OLS coefficients identifying the time effect on the returnee wage in younger and older groups respectively, and ε_i is a residual term.

4. EMPIRICAL RESULTS

4.1. Young Returnee Selection

In the analysis of the labour market performance of young return migrants it is essential to clarify their determinant characteristics. Returnee selection patterns may differ significantly depending on the framework considered: apparently, young returnees are selected from stayers differently than from migrants. As described in the previous section, selection to return is analysed by applying a logit model in two cohorts: youth (15–35 years)[3] and total sample (15–75 years). We perform a comparison using the total sample to determine the likelihood of experiencing temporary migration across age groups, and therefore, capture the young cohort in the context of the total population of returnees.

The models shown in Table 2 (and Appendix 2) reveal that with respect to age within the returnee-stayer selection framework, the younger age groups are more likely to experience temporary migration – for "younger youth" aged 15–24, "older youth" aged 25–34 and the 35–45 age group, the probability of being classified as a returnee is 0.6 percentage points higher than for the elderly group 55–64 years. On the other hand, in the second selection framework, the age effect is the opposite, naturally implying that before retirement, migrants are more likely to return home, while at a younger age they are still using the opportunity of working abroad. Several earlier studies, including Smoliner et al. (2012), concluded that return migration is reversely related to the age of the labour market participant, although in the Estonian context this statement applies only to the returnee-stayer selection.

Concerning the role of gender in young returnee selection, we see that for men the likelihood of being a return migrant is approximately 1.5 percentage points higher. Hence, among those young people going to work abroad, the proportion of men is higher; however, for current young migrants, the likelihood of returning to Estonia is 18.2 percentage points lower than among women; therefore, once abroad women are more likely to re-enter the home country labour market due to various reasons, including family ties. The same dependency is observed in the total sample; however, the marginal effect of gender in this case is slightly smaller (0.7 percentage points); therefore, men experience temporary migration more widely in all age categories, which may arise from family reasons: women usually take care of children and are more tightly connected to home and family.

Among other explanatory factors within youth returnee-stayer selection, higher education has a positive effect on the likelihood of experiencing temporary labour migration, implying that those young respondents with a bachelor's or master's degree are more frequently going abroad and later return to the home country than those with primary nine-year school education. This result is in line with previous studies by Masso et al. (2014), Hazans and Philips (2010), Zaiceva and Zimmermann (2012), Schroth (2013), revealing the positive selection of returnees with respect to the education level obtained. In this respect, temporary migration may be driven by the desire to find a better use of the degree acquired on the foreign labour market, offering higher wages.

We will next discuss the results with respect to the variables of individuals' assessments of how well their qualifications corresponded with their occupation. In the case of returnee-stayer selection for young returnees, no statistically significant effect was observed, while in

[3] The model was estimated for 15–24 and 25–35 age subgroups separately. As similar selection patterns along age groups were identified, the results on the joint group are presented.

the returnee-migrant framework, young returnee migrants are 21.5 percentage points less likely to be undereducated and 29.4 percentage points less likely to be overeducated than matched, supporting evidence from previous studies on migrant underperformance in foreign labour markets, including Dahlstedt (2011), Nielsen (2011) and Joona et al. (2014). In the total sample, the same pattern holds; however, the marginal effects are smaller (11.2 and 9.4 percentage points respectively). This observation may result from a predominant mismatch of migrant skills and competencies and the positions occupied by them in foreign labour markets.

Table 2. Logit model for selection to return from stayers and current migrants

Independent variables	Returnee-stayer selection		Returnee-migrant selection	
	All sample	Youth 15-35	All sample	Youth 15-35
Male	0.007	0.015	-0.050	-0.182
	(7.25)***	(4.85)***	(-2.43)**	(-5.37)***
Married	-0.003	-0.001	-0.021	-0.069
	(-2.71)***	(-0.36)	(-1.00)	(-2.47)**
Age 15-24	0.006	-	-0.098	-
	(2.97)***	-	(-2.91)***	-
Age 25-34	0.006	-	-0.183	-
	(4.65)***	-	(-7.04)***	-
Age 35-44	0.006	-	-0.153	-
	(5.27)***	-	(-6.32)***	-
Age 45-54	0.004	-	-0.172	-
	(3.22)***	-	(-6.73)***	-
Other non-Estonians	0.001	-0.003	0.114	0.063
	(0.92)	(-0.67)	(4.11)***	(2.25)**
Secondary education	0.000	0.003	-0.062	-0.046
	(0.05)	(0.94)	(-3.36)***	(-1.51)
Higher education	-0.001	0.008	0.082	0.040
	(-0.47)	(1.78)*	(3.06)***	(0.88)
Undereducated [a)]	-0.001	-0.007	-0.112	-0.215
	(-0.59)	(-0.99)	(-2.06)**	(-2.28)**
Overeducated [a)]	0.005	0.001	-0.094	-0.294
	(4.49)***	(0.28)	(-3.36)***	(-5.18)***
Medium level occupation	0.000	-0.006	0.092	0.119
	(0.04)	(-1.73)*	(3.82)***	(2.83)***
High level occupation	-0.002	-0.006	0.172	0.227
	(-1.43)	(-1.88)*	(7.98)***	(5.89)***
Self-employed	-0.002	0.001	0.149	0.211
	(-1.25)	(0.11)	(4.18)***	(2.94)***
Number of observations	72832	13920	2916	1017
Pseudo R-squared	0.0624	0.0692	0.1605	0.1538

Note: All regression models additionally control for current place of residence, widowed marital status, non-Estonian nationality with Estonian citizenship, industry of employment and year. Marginal effects are reported. Estimated based on EE-LFS panel data for years 2007–1013. ***, **, * Indicate results significant at 1%, 5% and 10% levels respectively. a) The two variables are calculated based on self-assessed occupation-qualification match of EE-LFS respondents.

The occupational variables revealed a statistically significant effect within young returnee profiles in both frameworks. When considering stayers as a base group, for medium and high level occupations (with 1-digit ISCO codes respectively 1-3 and 4-6), the likelihood of being a returnee is 0.6 percentage points lower than for low level occupations (those with 1-digit

ISCO codes 7–9[4]); in other words, returnees compared to stayers are less likely to occupy medium and high level positions. At the same time, young return migrants in the returnee-migrant framework are positively selected with respect to occupational level, implying that the occupational profiles of migrants are better in Estonia after return than while abroad. Similarly, returnees are more likely to be self-employed than migrants (in the young group the likelihood is 21.1 percentage points higher, in the total sample, 14.9 percentage points higher). These results are quite in-line with evidence of occupational downshifting among CEE migrants; for example, individuals working in white-collar occupations in the home country take up blue-collar occupations in the host country (Masso et al. 2014).

Hence, young return migrants significantly differ from both young non-migrants and non-return migrants. Within the returnee-stayer framework, the identified selection patterns of young Estonian return migrants are generally in line with earlier studies, including the findings of the "Re-Turn" project presented by Schroth (2013), summarizing return migrants as mostly men, being well educated, predominantly employed in the service sector and relatively younger compared to non-migrants (the project involved six countries – Czech Republic, Germany, Hungary, Italy, Poland and Slovenia). Although this is not fully the case for returnee-migrant selection, as in this framework return migrants are more frequently women and generally older; however, young returnees are still better educated and mostly employed in the service sector than permanent migrants.

4.2. Evaluation of the Wage Premium for Young Return Migrants

As outlined in section 3, returns to temporary migration are evaluated in three areas. Our first research problem was to identify whether foreign labour market experience has an effect on the wage of young returnees in Estonia. In particular, we are interested in examining how the wage surplus of return migrants compared to stayers varies across age groups. Table 3 presents the selected coefficients of the wage model (the full model is presented in Appendix 3). In order to track the returnee wage premium with respect to age precisely, we report the results on both age groups 15–24, 25–35, and 35 years and above.

Table 3. Wage premium to return migration (OLS regression of log of monthly wage)

Independent variables	**All sample**	**15-35 years**	Youth 15-24	Youth 25-35	**35 years and more**
Return migrant	0.072	0.138	0.154	0.126	0.039
	(3.73)***	(4.65)***	(2.78)***	(3.63)***	(1.59)
Non-return migrant	0.774	0.771	0.856	0.737	0.771
	(54.64)***	(35.24)***	(18.82)***	(29.53)***	(41.56)***
Gender (male=1)	0.343	0.335	0.254	0.355	0.341
	(70.30)***	(35.52)***	(12.05)***	(34.12)***	(60.02)***
Constant	4.260	2.844	0.096	3.407	4.001
	(130.50)***	(15.02)***	(0.05)	(7.57)***	(48.08)***
Number of observations	48569	13046	3342.000	9704.000	35523
R-squared adjusted	0.439	0.421	0.358	0.413	0.452

Notes: Dependent variable is logarithm of monthly wage. Regression model additionally controls for nationality, occupational and employment characteristics, education and time (years 2007–2012). Estimated based on EE-LFS panel data for years 2007–1013. ***, **, * Indicate results significant at 1%, 5% and 10% levels respectively.

[4] The 1-digit ISCO (International Classification for Occupations) codes are as follows: managers (1), professionals (2), technicians and associate professionals (3), clerical support workers (4), service and sales workers (5), skilled agricultural, forestry and fishery workers (6), craft and related trade workers (7), plant and machine operators and assemblers (8), elementary occupations (9).

The results of the regression analysis based on the regular Mincer wage equation verified the existence of a positive wage premium for return migrants relative to stayers. Therefore, our results are in line with a set of previous empirical findings, including Iara (2006), Hazans (2008), Radu and Martin (2012), revealing a positive wage premium to return in CEE countries. A statistically significant wage surplus was observed in the young group and the total sample. In particular, the estimate in the regression of the young group is twice greater than that of the total sample – those returnees aged 15–35 years are earning 13.8% more on average than stayers in the same age group, while in the full population of returnees (including both young and older cohorts) the premium is 7.2%. Consequently, the results suggest that for youth, return migration provides a higher wage premium after re-entering the domestic labour market than for the older age category, implying that in general foreign work experience seems to generate more added value for young returnees in Estonia. Further divisions of the youth cohort supported the previous conclusion and revealed a larger wage surplus in the youngest group (15.4%), while in the following age interval (older youth) the estimated premium was almost 3 percentage points smaller.

Therefore, the wage benefit from solely employment-induced temporary mobility clearly decreases with the returnees' age: the youngest return migrants enjoy the highest wage premium. However, this result relates to the estimated educational profile of the returnees (see Appendix 1): younger youth, when deciding to enter temporary work abroad, earn a higher salary compared to their peers who stayed in Estonia and were most likely enrolled in studies. However, already at the next age interval (25–34), the earlier wage benefit is partly offset, and that might possibly be related to the lower educational attainment in the older youth group; in other words, the young people's educational attainment might have been better if they had not worked temporarily abroad. A detailed study of that explanation would require more detailed data on young peoples' labour market trajectories.

Considering previously identified returnee selection patterns and the significant difference of returnees from the stayers in terms of a set of characteristics, we next aim to analyse the detected positive wage premium to return through the factors that induce it in order to detect the pure effect of foreign labour market experience on the earning surplus. Therefore, the second dimension of the investigation of the young returnees' positive wage premium refers to the in-depth analysis of the determinants of the wage gap. For that purpose we will apply the Oaxaca-Blinder decomposition of the earning gap between return migrants and stayers in two age categories (Oaxaca and Ransom, 1994). In order to obtain an in-depth analysis of the wage gap determinants, we control for the socio-demographic characteristics (age, gender, marital status, nationality and education) along with the effect of the characteristics of employment (occupation, industry of employment and employer's location). The reference group, represented by a constant term in our models, refers to ethnic Estonian single women with a basic level of education, occupying a low category position in small enterprises with the number of employees up to ten, located in Northern Estonia. Since the estimated decomposition revealed variation the contribution of individual factors to explain the wage premium across two subgroups of youth, Table 4 presents the results of the decomposition in three age cohorts (the full model, including estimates from separate equations for returnees and stayers, is available in Appendix 4).

The model shown in Table 4 reveals the higher unexplained wage differential in the total amount of the gap in the group of young returnees, compared to the older cohort, while the size of the overall wage gap is smaller for the latter cohort. This conclusion supports the results of the usual OLS regression reported in Table 3. In particular, the young returnee wage

gap constitutes 17% (6 points of the total 17% wage gap are explained), while in the older age group the earnings gap constitutes only 2%.

Table 4. Oaxaca-Blinder decomposition of the wage gap between returnees and stayers in two age groups

	Returnees aged 15-35 years			**Returnees aged 35 years and more**		
	Gaps in ln(wage)			**Gaps in ln(wage)**		
Factors	***Explained***	***Unexplained***	***Total***	***Explained***	***Unexplained***	***Total***
Age	-0.008	-0.0677	-0.0757	0.0284***	0.2621*	0.2905
Gender	0.0754***	-0.0779	-0.0025	0.0468***	0.0008	0.0476
Marital status	-0.0016	-0.0545	-0.0561	-0.0009	-0.1974**	-0.1983
Nationality	0.0009	0.0215	0.0224	-0.0095***	0.001	-0.0085
Education	-0.0005	-0.0836	-0.0841	-0.0060	0.0462	0.0402
Occupation	-0.0124	-0.0994**	-0.1118	-0.0252***	-0.0244	-0.0496
Industry	0.0128*	-0.004	0.0088	0.0092*	0.1134***	0.1226
Company's location	-0.0058*	-0.0112	-0.0170	-0.0001	0.0254	0.0253
Constant	0	0.4888**	0.4888	0	-0.251	-0.251
Total	**0.06**	**0.11**	**0.17**	**0.04**	**-0.02**	**0.02**

Note: Decomposition was performed using grouped control variables. Marital status – married and widowed; nationality – non-Estonians with Estonian citizenship and non-Estonians without citizenship; education – secondary and higher; occupation – medium and high level occupations (ISCO categories from 4 to 9); industry of employment – construction, hotels, transport, education, other business services, public administration and health care sector; company's location – central, northeast, western and southern Estonia; company's size – 11 employees and more. Estimated based on EE-LFS panel data for years 2007–2013. ***, **, * Indicate results significant at 1%, 5% and 10% levels respectively.

A detailed analysis of the effect of the control variables on the wage premium of young returnees displayed that there are few statistically significant contributions from individual factors to explain the overall earning gap. The gap in gender and industry of employment favours young returnees (explains 7.5 and 1.3 points of the wage difference), which is quite natural, considering that return migrants are predominantly men (71.8% relative to 50.5% among stayers based on EE-LFS data, see Table 2). Taking into account that the average wage level of men is superior to that of women, they have a better earning profile compared to stayers of the same age cohort. This observation supports the conclusion of Hazans (2008), reporting the superior wage premium among male returnees compared to female on the Latvian labour market; however, this contradicts the case of Hungary and findings of Co et al. (2000), who identified a positive wage premium only for female returnees.

The positive effect of employment industry in terms of explaining the wage gap may result from the fact observed from the raw data (Table 2), namely that returnees are more frequently employed in construction and other business services, while stayers have higher frequency of employment in the public sector.

In the older age cohort, the factor-wise contribution to the explained part of the earning gap is similar to the case of the young group; however, more individual covariates are statistically significant. With respect to age, the explained part of the wage gap is enhanced by 2.8 points, favouring returnees, which is rather natural, as an average age of return migrants is lower than stayers (Table 2) and thus the earnings level is higher. Gender and industry contribute positively to the returnee earnings level, as in the case of young returnees. However, factors like nationality and occupation disfavour returnees in terms of earnings within the older age group.

A more detailed look at the raw data reveals that in the older age category, the proportion of native Estonians experiencing temporary migration is smaller, compared with the respective group of stayers, and since the higher salary rates are observed for those who are ethnically Estonian, the negative effect of the nationality variable is natural. The same conclusion applies to the effect of occupation: among stayers, the proportion of high-position employees is greater, and therefore, the wages are rated as superior compared to returnees. Moreover, the occupational profiles may differ substantially across age groups, since for young returnees, being more mobile, work abroad may be their first employment experience, while older temporary migrants may be driven by unsuccessful domestic labour market performance; that is, the decision to go abroad may arise due to unsuccessful employment in the home country.

The unexplained part of the wage gap dominates over the explained for young return migrants, which is not the case for the older cohort. Apparently, the high share of unexplained returnee-stayer wage differential among youth, compared to the older age group, could result from an occupation-skill mismatch frequently faced by young people as the first workplace may not fully correspond to the individual's competencies. Given that the experience and competencies (so-called "brain gain") accumulated or qualification loss ("brain drain") as a result of temporary labour migration cannot be explicitly measured, they are captured by the unexplained part of the wage differential. Therefore, the larger unexplained wage premium fraction may imply a greater effect of unobservable factors related to individual competencies, skills acquired and/or developed while abroad on post-return earnings.

Hence, the results of the wage gap decomposition revealed that the effect of the foreign labour experience on the earnings level is not homogeneous with respect to returnee characteristics and differs significantly for young return migrants. As observed from the estimated model, the share of the unexplained wage difference among youth constitutes 65% of the total wage gap (6 percentage points of overall 17% difference) after controlling for the major individual and employment characteristics. That considerably differs from the older cohort, which has a significantly smaller (2%) wage gap between return migrants and stayers. Therefore, EE-LFS data based decomposition estimates revealed that in terms of earnings, returnees are gaining more from a foreign labour market experience at a young age; however, young stayers are favoured in terms of occupation compared to young returnees (unexplained gap with respect to occupation is -9.9 percentage points), implying that career mobility (occupational upgrading) may bring a higher reward for those young people who stayed on the Estonian labour market, supporting the conclusions of Masso et al. (2014).

The further separation of the youth group with respect to age (see table in Appendix 5) revealed a within-youth difference in the wage premium composition with respect to gender. In particular, the explained part of the wage differential showed that returnees are favoured with respect to age (0.08 out of a total 0.082 explained gap), while the unexplained fraction of the gap appeared with a negative sign (-0.131 from total 0.097 unexplained gap). A negative wage gap related to the gender variable implies that in the 25–35 age group, male return migrants, representing 78.2% of the total sample in the given age category (see table in Appendix 1), are disfavoured in terms of earnings compared to male stayers. Therefore, after re-entering the domestic labour market, male returnees have worse wage profiles compared to male stayers. This result could be interpreted in terms of the positive effect of temporary migration on reducing the wage disparity of young men and women, as for the latter, foreign labour market experience induces higher wage level compared to female stayers. The return migration having smaller effects on men than women is particularly important in the Estonian context due to the remarkable gender pay gap that at approximately 30%, is the highest at least among EU countries (see e.g. Anspal 2015 for a recent overview and evidence on that

issue). This conclusion goes in line with Co et al. (2000), reporting the positive effect of foreign labour market experience on earnings level only for women returnees; however, our results stipulate the same pattern only for the older youth subgroup.

The third dimension of the wage premium study aims to identify the dynamics of return to foreign labour market experience over time since re-migration. Our previous results have clearly shown a remarkable difference in young returnees in terms of individual characteristics, selection and wage profiles from the corresponding features of older-aged return migrants; consequently, the way positive return to re-migration appears and develops may vary across the age of return migrants. To analyse wage surplus dynamics, we have extended the classical Mincerian wage model with two sets of interaction terms between the time elapsed since return and the age of the migrant (young and older age cohorts)[5]. The model was estimated based on EPHC data with the wage variable derived from Estonian Tax Office data on individual payroll taxes (2006–2011). The results are reported in Table 5 (the full model is available in Appendix 6).

Table 5. Wage dynamics of young and older return migrants after return

Returnees aged 15-35			*Returnees aged 35 and more*		
Variables	Coefficient	St. error	Variables	Coefficient	St. error
Just returned	-0.0409	(.0410)	Just returned	0.1571	(0.0483)**
Returned 1 year ago	0.0129	(.0255)	Returned 1 year ago	0.1311	(.0384)***
Returned 2 years ago	0.0012	(.0258)	Returned 2 years ago	0.0641	(.0375)
Returned 3 years ago	0.0935	(.0236)***	Returned 3 years ago	0.0674	(0.031)*
Returned 4 years ago	0.0881	(.0234)***	Returned 4 years ago	-0.0000	(.0302)
Returned 5 years ago	0.1173	(.0237)***	Returned 5 years ago	0.0067	(.0283)
Number of observations	383083				
R-squared adjusted	0.2135				

Note: Dependent variable is the logarithm of monthly wage. The model additionally controls for age, gender, nationality, education level and occupation. Estimated based on EPHC 2011 data with the wage variable derived from Estonian Tax Office data on individual payroll taxes. ***, **, * Indicate results significant at 1%, 5% and 10% levels respectively.

As can be seen from Table 5, the wage premium trend is more pronounced for young returnees, implying the growth of the wage surplus over time. While the first three years after returning are statistically insignificant in terms of the wage coefficient, in the fourth year of re-migration, the young returnee earns on average a 9.4% higher wage than a non-migrant of the same age group; furthermore, after five years the wage surplus is already 11.7%. Remarkably, the wage dynamics pattern for older returnees differs considerably and displays negative dynamics over time: a 15.7% wage premium immediately after return shrinks after one year (13.1%) and after three years constitutes less than half of the initial wage surplus (6.4%). Therefore, older returnees enjoy the highest return to re-migration straight after re-entering the domestic labour market, while for youth the benefit of foreign labour market experience is revealed with time.

At first glance, it may seem surprising that the estimates of the young age influence on the return to the foreign market differ across the two datasets used in the analysis. However, if we consider that the sample of returnees based on the Census data includes non-working migrants (students), it appears quite natural that in the older cohort the wage premium to return is higher, since the students, constituting a high proportion in the young age group, may have

[5] The model was estimated in 15-24 and 25-35 years age subgroups separately. As similar selection patterns along age groups were identified the results on the joint youth group is presented.

earning profiles lower than active labour market participants and frequently experience their first employment with a non-correspondence of wage and actual competencies, while in the older cohort the employed are usually better matched to their individual competencies in terms of earnings and occupations.

We admit that these estimates do not reflect the pure effect of temporary migration, as wage profiles with positive dynamics over time are quite natural for young people, due to their gradual integration into the labour market, and improving occupational choices. Moreover, considering that the broadly defined return migrant sample based on EPHC includes not only those working abroad but also respondents migrating due to other reasons, it is more challenging to trace the wage dynamics induced solely by a foreign employment experience. Nevertheless, the model clearly shows that the benefit to return among youth develops differently, compared to the older age group, and therefore, domestic labour market performance and assimilation patterns among young returnees are considerably different from those detected among older adults.

5. CONCLUSIONS AND IMPLICATIONS

As a topic of growing interest among researchers, temporary migration has been widely studied; however, it remains under-investigated in the context of young people. Labour market challenges and the particular nature of labour market integration for young people justify the necessity to explicitly analyse youth return migration. The paper aims to fill this gap and investigate young return migrants on the Estonian labour market in terms of both their characteristics and post-migration performance, focusing on the selection to return from non-migrants and current migrants and the benefit of foreign labour market experience in terms of earnings profile.

Since the young returnee population was of major interest, it was studied in comparison with older return migrants on all research steps, in order to detect what characteristics are specific to youth relative to older returnees. Given the loose age definition of youth, we further split the broad age group into two subgroups and conducted the analysis separately for two young cohorts to both ensure the robustness of the conclusions based on the joint age category and detect possible variation of estimates within the youth sample.

The selectivity to return analysis has proved that young returnees are significantly different from both stayers and permanent migrants in the corresponding age group. Young returnees were found to be mostly men with a higher education degree, predominantly employed in the service sector and relatively younger compared to those who had never worked abroad. However, the selection of returnees from current migrants shows different patterns with respect to various socio-economic characteristics, namely, the effect of gender differs, implying that returnees are predominantly women and tend to re-enter the domestic labour market at an older age. Although, young returnees were still identified as better educated and mostly employed in the service sector compared to permanent young migrants.

The analysis of the wage premium to return revealed a downward tendency over age, with the highest wage return found in the youngest subgroup (15–24 years). If we combine this result with the educational profiles of the returnees in different age cohorts, reported on the basis of EE-LFS data, it is possible that the wage benefit in the youngest age group is later partly offset by losses in educational attainment relative to the returnees' peers, who did not choose foreign employment.

The study of the wage premium from return migration was not limited to the estimation of its size. We also attempted to investigate its main determinants and dynamics after return. The results of an Oaxaca-Blinder decomposition revealed that the foreign labour market experience favours returnees unevenly across age groups. In terms of the overall wage differential, in the young group the fraction of the unexplained gap remains high, reflecting the considerable effect of factors not captured by our models, including the work experience and competencies gained while abroad. Therefore, the superior fraction of the unexplained wage gap may be evidence of the greater effect of unobserved foreign labour market experience among youth aged 15–35, while for the older cohort of returnees, the unexplained share, and therefore, the role of the experience gained abroad as one of the factors captured by the unexplained fraction of the wage premium, is lower. The results on the divided youth category showed that in the subgroup of men aged 25–35 years, returnees are disfavoured compared to stayers, being evidence of the positive effect of temporary migration on reducing the wage disparity of young men and women in the Estonian labour market.

The results of the analysis based on the EE-LFS and EPHC datasets revealed different wage premium profiles for young returnees. Based on migration for purely employment reasons and the narrow definition applied under the EE-LFS data, young returnees earn a higher wage premium compared to the older age cohort, implying higher benefits from return migration in the young category. However, when using the broader employment-based definition of return migrants (based on the EPHC approach) instead of the narrow one (referred to in LFS data), the age effect on the wage premium differs. Therefore, when the returnee sample includes also those respondents staying abroad due to reasons other than employment, the return to these foreign stays will be lower for young people, relative to the older cohort.

These conclusions contribute to previous empirical findings regarding the post-return labour market performance of return migrants and reveal the main characteristics of labour market integration in the case of young returnees. Being an issue of increasing interest, return migration from the policy perspective should be addressed with respect to the major characteristics of returnees and their labour market assimilation profiles. Considering that young return migrants constitute a specific subgroup of the returnee population, they should be attracted to the host country economy due to significant potential based on high education attainments accomplished with foreign market experience, mobility and employment flexibility.

The revealed gender difference in post-return labour market outcomes among 25–35 year old returnees can be of particular policy relevance, since it reveals the gender wage gap, being a topical issue in the Estonian context, to be lowered as a result of temporary labour mobility. The benefit of return migration for the Estonian labour market in this respect is clear, as it reduces the scope of gender wage disparity particularly among youth. Therefore, facilitating the acceleration of the labour market integration of young returnees will enable them to fully realize their competencies, and therefore, provide benefit for the home country economy.

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Appendix 1. Descriptive statistics of the Estonian Labour Force Survey data and Estonian Population and Housing Census data

	Estonian Labour Force Survey (2007-2012 panel)								*Estonian Population and Housing Census 2011*							
	Return Migrants				**Stayers**				**Return Migrants**				**Stayers**			
	15-35 years	Youth 15-24	Youth 25-35	**>35 years**	**15-35 years**	Youth 15-24	Youth 25-35	**>35 years**	**15-35 years**	Youth 15-24	Youth 25-35	**>35 years**	**15-35 years**	Youth15 -24	Youth 25-35	**>35 years**
Socio-Demographic Characteristics																
Average age, years		41				45				32				37		
Gender (male=1)	71.8	68.8	78.2	61.2	50.5	52.5	53.5	44.5	46.1	41.4	47.9	54.0	51.3	51.6	51.0	43.3
Nationality (Estonian=1)	80.0	82.3	78.4	66.4	78.2	81.4	73.7	73.0	58.8	57.8	59.2	41.5	75.0	77.3	73.0	84.5
Citizenship (Estonian=1)	92.3	95.4	90.3	79.7	91.5	94.0	87.9	84.3	64.4	66.7	67.6	49.7	91.0	93.2	89.2	93.3
Marital status (married=1)	39.0	16.7	56.7	77.5	30.8	10.3	63.7	75.4	28.8	9.8	35.9	49.5	16.6	3.1	28.2	48.7
Foreign language proficiency	93.6	97.3	93.3	87.5	91.3	93.3	89.9	85.2	93.7	93.9	93.7	79.9	85.6	88.4	83.1	76.0
Education																
Higher	13.9	5.2	21.5	18.9	14.2	5.2	28.5	21.9	44.1	21.0	52.7	41.8	21.2	7.4	33.2	22.5
Secondary	53.9	60.5	50.4	59.1	44.7	44.6	49.5	50.5	42.8	54.3	38.5	46.8	45.9	43.1	48.2	55.4
Lower	32.2	34.3	28.2	22.0	41.1	50.3	22.0	27.6	13.2	24.8	8.9	11.4	32.9	49.5	18.6	22.1
Employment																
Average wage, EUR	638.2	502.9	675.1	572.9	573.8	423.3	586.5	517.4	928.7	653.9	966.9	1082.4	781.6	546.9	841.8	777.9
Employed	51.9	38.2	60.4	59.5	49.1	23.1	76.2	58.1	60.1	39.2	67.9	55.3	54.2	31.9	73.3	55.8
Unemployed	25.8	26.9	25.2	15.6	8.8	8.6	9.0	5.0	10.0	10.0	10.0	7.8	8.8	8.7	8.8	5.1
Inactive	22.3	35.0	14.4	24.9	42.1	68.3	14.9	36.9	29.9	50.8	22.0	37.0	37.0	59.4	17.9	39.1
Occupation																
White-collar	33.7	25.7	41.0	38.3	41.3	30.2	49.0	44.5	51.9	32.2	59.3	43.4	37.4	20.0	52.4	37.3
Blue-collar	66.4	74.3	59.0	61.7	58.7	69.8	51.0	55.6	48.1	67.8	40.7	56.6	62.6	80.0	47.6	62.7
Self-employed	3.1	-	5.0	5.3	3.1	0.6	5.6	5.2	5.3	3.4	9.2	9.1	2.7	2.1	5.6	5.2
N of observations	484	186	298	941	29770	15189	14581	106009	9398	2554	6844	to check	324256	149771	174485	518632

Appendix 2. Logit model for selection to return from stayers and current migrants

Independent variables	Returnee-stayer selection		Returnee-migrant selection	
	All sample	**Youth 15-35**	**All sample**	**Youth 15-35**
Male	0.007	0.015	-0.050	-0.182
	(7.25)***	(4.85)***	(-2.43)**	(-5.37)***
Age 55-64 (base)	*1.000*	-	*1.000*	-
Age 15-24	0.006	-	-0.098	-
	(2.97)***	-	(-2.91)***	-
Age 25-34	0.006	-	-0.183	-
	(4.65)***	-	(-7.04)***	-
Age 35-44	0.006	-	-0.153	-
	(5.27)***	-	(-6.32)***	-
Age 45-54	0.004	-	-0.172	-
	(3.22)***	-	(-6.73)***	-
Single (base)	*1.000*	*1.000*	*1.000*	*1.000*
Married	-0.003	-0.001	-0.021	-0.069
	(-2.71)***	(-0.36)	(-1.00)	(-2.47)**
Widowed	-0.001	-0.002	0.082	-0.339
	(-0.60)	(-0.17)	(2.14)**	(-2.52)**
Ethnic Estonian (base)	*1.000*	*1.000*	*1.000*	*1.000*
Non-Estonian citizen	0.001	-0.000	0.018	0.003
	(0.93)	(-0.12)	(0.64)	(0.11)
Other non-Estonians	0.001	-0.003	0.114	0.063
	(0.92)	(-0.67)	(4.11)***	(2.25)**
Primary education (base)	*1.000*	*1.000*	*1.000*	*1.000*
Secondary education	0.000	0.003	-0.062	-0.046
	(0.05)	(0.94)	(-3.36)***	(-1.51)
Higher education	-0.001	0.008	0.082	0.040
	(-0.47)	(1.78)*	(3.06)***	(0.88)
Qualification match (base)	*1.000*	*1.000*	*1.000*	*1.000*
Undereducated	-0.001	-0.007	-0.112	-0.215
	(-0.59)	(-0.99)	(-2.06)**	(-2.28)**
Overeducated	0.005	0.001	-0.094	-0.294
	(4.49)***	(0.28)	(-3.36)***	(-5.18)***
Public services (base)	*1.000*	*1.000*	*1.000*	*1.000*
Construction	0.009	0.016	-0.167	-0.159
	(8.61)***	(5.22)***	(-9.07)***	(-5.39)***
Energy	-0.004	-	0.051	-
	(-0.94)	-	(0.74)	-
Hotels	0.001	0.004	-0.137	-0.156
	(0.41)	(0.72)	(-2.96)***	(-2.36)**
Transport	-0.002	-0.010	-0.233	-0.247
	(-1.29)	(-1.83)*	(-8.71)***	(-4.34)***
Financial services	-0.008	-	-0.109	-
	(-1.46)	-	(-0.80)	-
Education	0.003	0.007	0.076	-0.055
	(2.11)**	(1.25)	(1.98)**	(-0.80)
Other business services	-0.000	0.009	-0.032	0.139

Appendix 2 *(continuation)*

Independent variables	Returnee-stayer selection		Returnee-migrant selection	
	All sample	**Youth 15-35**	**All sample**	**Youth 15-35**
	(-0.12)	(1.96)**	(-0.87)	(2.41)**
Public administration	0.000	0.009	0.159	0.077
	(0.01)	(2.09)**	(3.52)***	(1.23)
Health	0.002	0.014	-0.003	-0.079
	(1.15)	(2.29)**	(-0.07)	(-0.97)
Low level occupation (base)	*1.000*	*1.000*	*1.000*	*1.000*
Medium level occupation	0.000	-0.006	0.092	0.119
	(0.04)	(-1.73)*	(3.82)***	(2.83)***
High level occupation	-0.002	-0.006	0.172	0.227
	(-1.43)	(-1.88)*	(7.98)***	(5.89)***
Self-employed	-0.002	0.001	0.149	0.211
	(-1.25)	(0.11)	(4.18)***	(2.94)***
Number of observations	72832	13920	2916	1017
Pseudo R-squared	0.0624	0.0692	0.1605	0.1538

Note: All regression models additionally control for current place of residence and year. Marginal effects are reported. Estimated based on EE-LFS panel data for years 2007–1013. ***, **, * Indicate results significant at 1%, 5% and 10% levels respectively

Appendix 3. Wage premium to return migration (OLS regression of log of monthly wage)

Independent variables	All sample	15-35 years	Youth 15-24	Youth 25-35	35 years and more
Return migrant	0.072	0.138	0.154	0.126	0.039
	(3.73)***	(4.65)***	(2.78)***	(3.63)***	(1.59)
Non-return migrant	0.774	0.771	0.856	0.737	0.771
	(54.64)***	(35.24)***	(18.82)***	(29.53)***	(41.56)***
Male	0.343	0.335	0.254	0.355	0.341
	(70.30)***	(35.52)***	(12.05)***	(34.12)***	(60.02)***
Ethnic Estonian (base)	*1.000*	*1.000*	*1.000*	1.000	*1.000*
Non-Estonian citizen	-0.098	-0.086	-0.005	-0.116	-0.103
	(-13.70)***	(-6.83)***	(-0.23)	(-7.82)***	(-11.89)***
Other non-Estonians	-0.141	-0.096	-0.057	-0.108	-0.156
	(-18.71)***	(-5.99)***	(-1.52)	(-6.18)***	(-18.22)***
Foreign owned company	0.139	0.117	0.076	0.135	0.150
	(23.69)***	(11.19)***	(3.71)***	(11.17)***	(21.22)***
Permanent job contract	0.279	0.225	0.207	0.201	0.309
	(16.04)***	(9.43)***	(5.75)***	(6.54)***	(12.41)***
Private owned company	0.038	0.064	0.072	0.052	0.033
	(4.88)***	(3.23)***	(1.42)	(2.49)**	(3.85)***
11-49 employees	0.145	0.091	0.059	0.102	0.167
	(23.85)***	(7.78)***	(2.45)**	(7.75)***	(23.72)***
50-199 employees	0.231	0.175	0.177	0.177	0.253
	(34.75)***	(13.61)***	(6.25)***	(12.42)***	(32.79)***
200-499 employees	0.281	0.223	0.177	0.235	0.303
	(31.25)***	(13.31)***	(4.64)***	(12.82)***	(28.57)***
More than 500 employees	0.293	0.251	0.215	0.264	0.314
	(29.08)***	(13.51)***	(5.43)***	(12.75)***	(26.16)***
Construction	0.173	0.171	0.156	0.176	0.166
	(21.14)***	(11.98)***	(5.15)***	(10.96)***	(16.71)***
Energy	0.033	0.081	0.111	0.061	0.028
	(2.18)**	(2.07)**	(1.11)	(1.49)	(1.74)*
Hotels	-0.027	-0.034	-0.071	-0.019	-0.008
	(-2.10)**	(-1.69)*	(-2.22)**	(-0.73)	(-0.46)
Transport	0.150	0.108	0.095	0.109	0.169
	(19.91)***	(7.42)***	(2.82)***	(6.75)***	(19.18)***
Financial services	0.192	0.166	0.106	0.182	0.212
	(9.95)***	(6.16)***	(1.32)	(6.85)***	(7.99)***
Education	-0.118	-0.203	-0.275	-0.194	-0.114
	(-11.99)***	(-7.71)***	(-3.75)***	(-7.05)***	(-10.74)***
Other business services	-0.106	-0.029	-0.139	0.016	-0.133
	(-9.05)***	(-1.41)	(-3.40)***	(0.66)	(-9.44)***
Public administration	0.113	0.163	0.174	0.148	0.093
	(10.45)***	(7.03)***	(2.55)**	(6.12)***	(7.51)***
Health	0.002	-0.115	-0.141	-0.109	0.023
	(0.21)	(-4.22)***	(-2.11)**	(-3.65)***	(2.08)**
Low level occupation (base)	*1.000*	*1.000*	*1.000*	1.000	*1.000*
Medium level occupation	0.035	0.019	0.027	0.019	0.040
	(5.85)***	(1.65)*	(1.12)	(1.45)	(5.71)***
High level occupation	0.321	0.272	0.243	0.275	0.333
	(53.01)***	(21.39)***	(7.30)***	(20.35)***	(48.36)***

Appendix 3 *(continuation)*

Independent variables	All sample	15-35 years	Youth 15-24	Youth 25-35	35 years and more
Currently studying	-0.122	-0.116	-0.216	-0.022	-0.017
	(-10.76)***	(-8.55)***	(-9.65)***	(-1.31)	(-0.87)
Self-education	0.076	0.029	-0.012	0.041	0.095
	(14.31)***	(2.94)***	(-0.57)	(3.78)***	(15.18)***
Constant	4.260	2.844	0.096	3.407	4.001
	(130.50)***	(15.02)***	(0.05)	(7.57)***	(48.08)***
Number of obs.	48569	13046	3342.000	9704.000	35523
R-squared adjusted	0.439	0.421	0.358	0.413	0.452

Notes: Dependent variable is logarithm of monthly wage. Regression model includes additionally year dummies 2008–2012. Estimated based on EE-LFS panel data for years 2007–1013. ***, **, * Indicate results significant at 1%, 5% and 10% levels respectively.

Appendix 4. Oaxaca-Blinder decomposition of the wage gap between returnees and stayers in two age groups

	Age 15-35			**Age more than 35**		
Have worked abroad	**Yes**	**No**		**Yes**	**No**	
Age	0.0167**	0.0191***		-0.0084***	-0.0137***	
Gender (male=1)	0.2195**	0.3612***		0.3413***	0.3396***	
Married	0.0186	0.1296***		-0.1277	0.0875***	
Widowed	0.2666	0.0775***		-0.1366	0.0629***	
Non-Estonian (citizen)	-0.0494	-0.0736***		0.0054	-0.0654***	
Non-Estonian (non-citizen)	0.1424	-0.0923***		-0.1751**	-0.1216***	
Secondary education	0.0929	0.1009***		0.1523**	0.0844***	
Higher education	0.0264	0.3409***		0.3909***	0.3641***	
Medium level occupation	-0.2288**	-0.0036		-0.0322	0.0112	
High level occupation	0.1323	0.2561***		0.2913***	0.3318***	
Industry						
Agriculture	-0.4076***	-0.0786***		0.2901***	-0.0228	
Construction	0.0022	0.0836***		0.425***	0.0383***	
Hotels	0.0568	-0.1192***		0.2216	-0.1125***	
Transport	-0.1702	0.0966***		0.46***	0.1383***	
Education	0.0971	-0.3172***		-0.0921	-0.1766***	
Other business services	-0.0617	-0.1048***		-0.3907***	-0.264***	
Public administration	0.2808**	0.1045***		0.036	0.0507***	
Health care	-0.2701	-0.1303***		0.3029**	-0.004	
Firm's location						
Central Estonia	-0.2064**	-0.0679***		0.06895	-0.0578***	
North-East Estonia	-0.1393	-0.1129***		-0.1014	-0.0746***	
Western Estonia	-0.1792*	-0.1058***		0.019	-0.0733***	
Southern Estonia	-0.0219	-0.0837***		-0.0998	-0.0974***	
Constant	5.7186***	5.2297***		6.1519***	6.4029***	
Number of observations	10803			29308		
	Gaps in ln(wage)			***Gaps in ln(wage)***		
Factors	Explained	Unexplained	Total	Explained	Unexplained	Total
Age	-0.008	-0.0677	-0.0757	0.0284***	0.2621*	0.2905
Gender	0.0754***	-0.0779	-0.0025	0.0468***	0.0008	0.0476
Marital status	-0.0016	-0.0545	-0.0561	-0.0009	-0.1974**	-0.1983
Nationality	0.0009	0.0215	0.0224	-0.0095***	0.001	-0.0085
Education	-0.0005	-0.0836	-0.0841	-0.0060	0.0462	0.0402
Occupation	-0.0124	-0.0994**	-0.1118	-0.0252***	-0.0244	-0.0496
Industry	0.0128*	-0.004	0.0088	0.0092*	0.1134***	0.1226
Company's location	-0.0058*	-0.0112	-0.0170	-0.0001	0.0254	0.0253
Constant	0	0.4888**	0.4888	0	-0.251	-0.251
Total	**0.06**	**0.11**	**0.17**	**0.04**	**-0.02**	**0.02**

Note: Decomposition was performed by the grouped control variables. Marital status –married and widowed; nationality – non-Estonians with Estonian citizenship and non-Estonians without citizenship; education – secondary and higher; occupation – medium and high level occupations (ISCO categories from 4 to 9); industry of employment – construction, hotels, transport, education, other business services, public administration and health care sector; company's location – central, northeast, western and southern Estonia; company's size – 11 employees and more. Estimated based on EE-LFS panel data for years 2007–1013. ***, **, * Indicate results significant at 1%, 5% and 10% levels respectively

Appendix 5. Oaxaca-Blinder decomposition of the wage gap between returnees and stayers in three age groups

	Age 15-24		Age 25-35		Age more than 35	
Have worked abroad	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
Age	0.084**	0.077***	-0.002***	0.008***	-0.0084***	-0.0137***
Gender (male=1)	0.230	0.308**	0.186	0.355**	0.3413***	0.3396***
Married	-0.026	0.132**	-0.046*	0.118**	-0.1277	0.0875***
Widowed	0.127	0.774	0.441	0.060**	-0.1366	0.0629***
Non-Estonian (citizen)	-0.124	-0.016 **	-0.084	0.100**	0.0054	-0.0654***
Non-Estonian (non-citizen)	-0.048	-0.049**	0.191	-0.104**	-0.1751**	-0.1216***
Secondary education	0.055	0.087**	0.050*	0.079**	0.1523**	0.0844***
Higher education	-0.217	0.220 **	0.063	0.305**	0.3909***	0.3641***
Medium level occupation	-0.041	-0.039**	-0.082	0.013**	-0.0322	0.0112
High level occupation	0.218	0.132**	0.063	0.288**	0.2913***	0.3318***
Industry						
Construction	0.191	0.064**	0.063*	0.101**	0.425***	0.0383***
Hotels	0.108	-0.144**	-	-0.073**	0.2216	-0.1125***
Transport	-0.130	0.010**	-0.102	0.106**	0.46***	0.1383***
Education	-0.058	-0.383*	0.262	-0.285**	-0.0921	-0.1766***
Other business services	-0.515	-0.199**	0.175	-0.061**	-0.3907***	-0.264***
Public administration	-0.150	0.112*	0.452	0.109**	0.036	0.0507***
Health care	-0.693	-0.065*	0.087	-0.150**	0.3029**	-0.004
Firm's location						
Central Estonia	-0.438	-0.027**	-0.118*	-0.093**	0.06895	-0.0578***
North-East Estonia	-0.389	-0.143**	-0.149	-0.109**	-0.1014	-0.0746***
Western Estonia	-0.349	-0.058**	-0.105	-0.123**	0.019	-0.0733***
Southern Estonia	0.0135	-0.069**	0.050*	-0.093**	-0.0998	-0.0974***
Constant	4.194	4.003	6.260	5.602	6.1519***	6.4029***
Number of observations	2923		7880.000		29308	

Appendix 5 (continuation)

	Age 15-24			**Age 25-35**			**Age more than 35**		
	Gaps in ln(wage)			***Gaps in ln(wage)***			***Gaps in ln(wage)***		
Factors	Explained	Unexplained	Total	Explained	Unexplained	Total	Explained	Unexplained	Total
Age	0.037***	0.152	0.189	-0.003	-0.274	-0.277	0.0284***	0.2621*	0.2905
Gender	0.053***	-0.056	-0.003	0.080***	-0.131**	-0.051	0.0468***	0.0008	0.0476
Marital status	0.013	-0.052	-0.039	-0.002	-0.096*	-0.098	-0.0009	-0.1974**	-0.1983
Nationality	0.003	-0.012	-0.009	-0.002	0.025	0.023	-0.0095***	0.001	-0.0085
Education	-0.001	-0.067	-0.068	0.003	-0.092	-0.089	-0.0060	0.0462	0.0402
Occupation	-0.010	0.012	0.002	-0.008	-0.112***	-0.120	-0.0252***	-0.0244	-0.0496
Industry	0.005	-0.011	-0.006	0.019	0.088*	0.107	0.0092*	0.1134***	0.1226
Company's location	-0.004	-0.092	-0.096	-0.004	0.031	0.027	-0.0001	0.0254	0.0253
Constant	0	0.191	0.191	0.000	0.658**	0.658	0	-0.251	-0.251
Total	**0.096**	**0.065**	**0.161**	**0.082**	**0.097**	**0.179**	**0.04**	**-0.02**	**0.02**

Note: Decomposition was performed by the grouped control variables. Marital status –married and widowed; nationality – non-Estonians with Estonian citizenship and non-Estonians without citizenship; education – secondary and higher; occupation – medium and high level occupations (ISCO categories from 4 to 9); industry of employment – construction, hotels, transport, education, other business services, public administration and health care sector; company's location – central, northeast, western and southern Estonia; company's size – 11 employees and more. Estimated based on EE-LFS panel data for years 2007–1013. ***, **, * Indicate results significant at 1%, 5% and 10% levels respectively.

Appendix 6. Wage dynamics of young and older return migrants after return

Variables	Coefficient	Standard error
Age	0.0304	(.0005)***
Age squared	-0.0004	(0.0000)***
Gender (female=1)	-0.2495	(.0020)***
Nationality (Estonian=1)	0.1130	(.0020)***
Higher education	0.3152	(.0037)***
Secondary education	0.0816	(.0031)***
Legislators, senior officials and managers	0.1522	(.0065)***
Professionals	0.1063	(.0064)***
Technicians and associate professionals	0.0659	(.0063)***
Clerical support workers	-0.0338	(.0069)***
Services and sales workers	-0.2443	(.0064)***
Skilled agricultural, forestry and fishery workers	-0.2057	(.0105)***
Craft and related trade workers	-0.1341	(.0064)***
Plant and machine operators and assemblers	-0.1553	(.0065)***
Elementary occupations	-0.3486	(.0069)***
Just returned × Older returnee	0.1571	(0.0483)**
Returned 1 year ago × Older returnee	0.1311	(.0384)***
Returned 2 years ago × Older returnee	0.0641	(.0375)
Returned 3 years ago × Older returnee	0.0674	(0.031)*
Returned 4 years ago × Older returnee	-0.0000	(.0302)
Returned 5 years ago × Older returnee	0.0067	(.0283)
Just returned × Young returnee	-0.0409	(.041)
Returned 1 year ago × Young returnee	0.0129	(.0255)
Returned 2 years ago × Young returnee	0.0012	(.0258)
Returned 3 years ago × Young returnee	0.0935	(.0236)***
Returned 4 years ago × Young returnee	0.0881	(.0234)***
Returned 5 years ago × Young returnee	0.1173	(.0237)***
Constant	5.8266	(.0118)***
Number of observations	383083	
R-squared adjusted	0.2135	

Note: Dependent variable is logarithm of monthly wage. Estimated based on EPHC 2011 data with the wage variable derived from Estonian Tax Office data on individuals' payroll taxes. ***, **, * Indicate results significant at 1%, 5% and 10% levels respectively.

KOKKUVÕTE

Noorte ajutise migratsiooni seos nende hilisema edukusega tööturul kriisijärgselt Kesk- ja Ida-Euroopa riikides Eesti näitel

Käesolev artikkel arendab varasemat kirjandust ajutise migratsiooni mõjudest uurides eraldi just migratsiooni mõju noortele, viimaseid defineeritakse töös suhteliselt laialt 18-35 aastaste vanusegrupina. Ühelt poolt uuritakse töös seda, millised karakteristikud eristavad Eestisse tagasipöördunuid välismaal mitte töötanutest ja samuti jätkuvalt välismaal töötajatest. Teiseks uuritakse, milline on ajutise töökogemuse seos Eestisse naasmisel teenitava palgaga, kas välismaa töökogemust väärtustatakse kõrgema palgaga. Antud teemat motiveerivad nii noorte mitmesugused probleemid tööturul kui ka nende suur avatus hiljutise majanduskriisi mõjudele. Analüüsiks kasutatakse kahte indiviidi-taseme andmestikku, need on Eesti Tööjõu-uuringu andmed aastatest 2005-2013 ning 2011. aasta Eesti rahva- ja eluruumide loenduse andmed ühendatuna Eesti Maksu- ja Tolliameti andmetega indiviidide sotsiaalmaksu laekumiste kohta. Empiirilises osas uuritakse ökonomeetrilise analüüsiga välismaal töötanud ja mittetöötanud indiviide eristavaid tunnuseid, hinnatakse palgavõrrandeid ning dekomponeeritakse ajutist välismaa töökogemust omavate ja mitteomavate palgalõhet kasutades Oaxaca-Blinderi lähenemist. Tulemused näitasid, et ajutise töökogemusega noored on olnud eelkõige mehed, hõivatud eelkõige teenustesektoris, kõrgharidusega ja suhteliselt nooremad võrreldes välismaal mittetöötanutega. Noorte puhul kajastub ajutine välismaal töötamine hiljem suuremas palgapreemias kui vanemate inimeste puhul. Noorte puhul oli ka välismaal töötamisega seonduvas palgapreemias vaadeldavate teguritega selgitamata osa suhteliselt suurem. Kui vaadata laiemal põhjustel (sh seoses õpingutega) välismaal viibinuid, siis oli välismaal viibimise palgapreemia suurem hoopiski vanematel vanusegruppidel. Naiste suurem välismaal töötamisega seonduv palgapreemia vanusegrupis 25-35 osundab välismaa töökogemuse rollile soolist palgalõhe vähendajana.