LABOR OUTFLOW FROM THE VISEGRAD COUNTRIES AFTER THE EU ACCESSION

By
Tímea Hardy

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Supervisor: Professor Juan Manuel Puerta

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ABSTRACT

The purpose of the paper is to discuss one of the main features of the European Union membership, the free movement of labor. In 2004 the Visegrad countries - Hungary, Czech Republic, Poland and Slovakia - joined the Community (with six other countries) and they should have enjoyed the same rights as the old member states such as the four freedoms, however most of the EU-15 countries imposed labor market restrictions for the new entrants.

The paper researched how the labor outflow from the four countries was affected due to the EU accession from 2002 to 2007 and also what are the most important factors in choosing the possible target destinations. By using panel data method with first difference estimator it can be concluded from the results that the EU membership positively affected the migration activity in case of each examined country, however the migration intensity is relatively low. The results also show the GDP per capita and unemployment of the receiving country is the most decisive factors in choosing the target country.

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INTRODUCTION

Six years have already passed after Hungary and other nine countries - Czech Republic, Poland, Slovakia, Cyprus, Estonia, Latvia, Lithuania, Malta and Slovenia - joined the European Union at the same day in May 1, 2004. It was a decisive step in the modern history of Europe and influenced on political, economic and everyday life and the EU accession induces several research questions such as the labor market effects. Does it induce migration from the new member states to the old ones?

After the accession Central-Europe hoped that the West would open for them and they can work freely without any restrictions in the "old" member states, where they could enjoy higher wages and better working conditions, however the "new" countries realized that the old member states had fears of the new situation since they were afraid of the "cheap" well-qualified labor force, that could decrease the opportunities of their own employees and they could even lose their jobs. Western countries disagree that the newly joined countries should enjoy the same freedoms and that they can freely work in old member states. They argue that the „West will be overburdened and that the economies of Eastern and Western Europe alike will be hurt" (Hans- Werner Sinn, 2000, pg 3).

Among the fifteen countries only Great-Britain, Ireland and Sweden opened their labor markets for the Visegrad countries after their accession. Economic theory says that any of the member states should not close their labor markets for the new entrants, since it is one of the four main freedoms.[1]

[1]" the four freedoms are the freedom of movement of goods, persons, services and capital" (http://ec.europa.eu/external_relations/eea/)

In this thesis I analyze a group of countries in order to compare the effects of the membership among more states and to have a broader picture of the influences. Among the ten new countries I examine the labor market of the Visegrad countries, which is a group of four states - Hungary, Poland, Slovakia and the Czech Republic – existing since the fourteenth century.[2] I analyze the migration of four countries since first of all they joined the European Union at the same time and the four countries have common cultural and intellectual values, similar historical background, common origins in religious traditions and similar impacts influence them, their economy. They "work together in number of fields of common interest within the all-European integration" (Official website of Visegrad countries). All of the four countries are located in the Central-Eastern European region; they are the bridge between Eastern and Western Europe (see the map in the appendix). They were developing on a similar level in the past and nowadays as well and the EU accession affected them in a comparable point (see the comparative charts of their main economic indicators in the appendix, chart 3-6). In addition to this till nowadays there exists an economic and political cooperation and agreement among them.

According to the standard economic models of migration, Roy (1951) after 2004 the labor outflow from the four Visegrad countries should increase and more people should decide to move and work in the Western countries due to comparative advantages of the former European Union member states. It is know from the paper that choice of destination is very important and it depends on the income and employment opportunities of the receiving country. Several studies have also analyzed this topic, however to best of my knowledge nobody has looked at the patterns of migration regarding the EU membership of the four countries. On the other hand I found few papers that would analyze the four Visegrad

[2] The economic-political agreement among the Visegrad states was founded in 1334 in order to solve their problems and to form a unity against the foreign traders,

countries at the same time. Janice Bell and Tomasz Mickiewicz made a joint conclusion about the four countries but they wrote rather about their labor market and unemployment changes than about their migration activity. They concluded that labor market regulations and the catch-up of the Visegrad countries to the EU level are crucial in order to reach the European economic developmental level. Furthermore there are several researches that analyze the labor outflow from one of the four countries individually. Katarzyna Budnik (2007) examines the Poland migration flow; she reached the result that due to the European Union accession the ratio of the temporary emigrants to the total Polish population increased from 2% to roughly 6% by 2006. In the Tarki Social Research the Hungarian, the Czech and the Slovak workforce market were investigated at the same time, they concluded that 11.3% of qualified Hungarians, Czechs and Slovaks, taken together, plan to move to the EU-15, although only 1.1% of them plan to settle there permanently. Comparing to other Central-Eastern European countries Hungarian and Czech migration potential is relatively low (Á. Hárs, B. Simonovits and E. Sik, 2005). Claire Wallace (2002) also discussed the possible effects of opening the EU borders on the labor market and migration from the Central-Eastern European countries; however the empirical work is missing in her paper due to the lack of data.

The purpose of this thesis is to discuss how the EU eastward enlargement affected the labor market of the four Visegrad countries, how the EU enlargement increased the migration activity towards the Western member states of the European Union and how the four Visegrad countries take the advantage of one of the main benefits of their EU membership. I also analyze what factors are the most important in deciding on the receiving country such as the living standard and higher earnings opportunities.

In order to find the right estimation method the choice of the proper data set is crucial. As countries are compared to each other and observations are taken in different years, the proper representation of the observations tends to be the Panel method. “Panel data is a combination of time-series and cross-sectional analysis”, since time series analysis is used to capture the impact of changes in the same sates over time, while cross section is required to compare the countries with each other (Wooldridge, 2003). In addition to this I use panel data method in my analysis because it has a single feature compared to simple cross section estimation, namely that it can eliminate the unobservable country and time fixed effects which can bias the outcome of the regressions. Accordingly only by using panel estimation method I can get consistent estimator for the effect of the accession.

First of all I start the thesis with the literature review, introduce the analysis and findings of the existing researches related to this topic. In the next section of my thesis I briefly analyze the labor market and the labor force policy of the European Union, in the third one I examine the data I use for the panel regression. Then I conduct the methodology of the thesis, the panel regression itself. In this section I also examine the results and I show how the Eastern enlargement of the European Union influenced the labor markets of the Western countries and on the other hand how the migration facility of the four analyzed countries changed after the accession. Finally the thesis ends with conclusion.

1 LITERATURE REVIEW

Many economists concern about the effects of the labor market on economies both in the sending and receiving countries' viewpoint within the European Union, several research papers deal with the effect of the EU accession on the labor outflow from the new member states. There is an extensive literature written on this topic, many papers have been already prepared even before 2004, which predict the possible effect of the EU membership such as Thomas Bauer and Klaus F. Zimmermann. They expected about 3% of the Eastern population to migrate to the West after the EU accession, which means an immigration flow of about 3 million people (T. Bauer and K. F. Zimmermann, 1999). Most of the reports concentrate on one sending or one receiving country like UK or Germany (N. Gilpin, S. Lemos, J. Portes, C. Bullen, 2006) or on all countries of the EU without picking out any of them. (R. Barrell, J. FitzGerald and R. Riley, 2007)

It was and is still a popular prospect of Western states that Central Europeans will continuously move to their home countries in order to seek better working and living conditions. However, economists argue with it since the reality shows that migration from Central European countries has rather decreased and it is predicted to further decline (C. Wallace, 2002). Wallace concluded that labor outflow from the Central-Eastern European countries will decrease by the increase of convergence with the EU, furthermore she also emphasized that there is even a danger of too few migrants from the Central-Europe in order to meet the demographic requirements of the Western Europe due to the greater longevity and decreasing birth rates of the CEE regions. On the other hand she also examined the

immigration into the Central European countries from the post-communist South-Eastern Europe, which is expected to increase further.

Poland is the only state among the Visegrad countries, where more employees are leaving than coming, in other words the Polish migration balance was negative even before the EU accession and this tendency was significantly continuing after 2004. In Hungary, Slovakia and Czech Republic the net migration balance is positive, which means more people are coming to these countries than leaving (Stola, D, 2001).

I could conclude from the literature review that to best of knowledge nobody examined the correlation between the EU accession and migration flow from the four Visegrad countries, therefore it is worth to make an empirical analysis regarding it.

2 LABOR MARKET AND MIGRATION

I examine the concept of labor market by the labor economy, where the labor force changes between employers and employees. It is important to analyze the labor market from macroeconomic point of view, since we would like to have a boarder picture of the main factors that influence the modifications of the labor market like the Gross Domestic Product, the minimal wage and the unemployment rate.

In order to analyze the change of the labor market it is also important to examine the main forms, causes, effects and the possible barriers of the migration. According to the theories migration can be derived from two forms; labor-flow of the high-qualified professionals and the low-qualified ones. The migration of the qualified experts is a narrow channel, it affects relatively few employees and their job and knowledge is necessary for the receiving country (brain drain). Experts and qualified workers are needed for all countries and if these people move to foreign countries en masse it can be disadvantageous for the sending countries in the long run. The other more frequent form of migration is the flow of low-qualified labor force. In this case in the receiving country the local employees do not make specific working types, therefore there is lack of professionals. The form of illegal migration means a continuous problem for all countries to roll it back. (Theories of International Migration)

As Zsófia Kaszás (2007) states immigration can have several causes such as the financial and developmental ones. In most cases the employees want to earn higher wages and to further develop or they do not find a job in their home country. The safer and better working and financial conditions of the receiving countries and instable political and economic situation of the sending country can also lead to migration from the home countries.

The not en masse labor-inflow can be economically advantageous for the receiving country, however the Union has fears since the labor supply is increasing and the labor-force of the new member states are cheaper. On the other hand it is disadvantageous for the sending country due to the previously mentioned brain drain, since they lose their experts and intellectual capital, and another country can gain from it (Kaszás Zsófia, 2007)

According to Bauer and Zimmerman (1999) the labor flow can have political and economic barriers such as migration policy or the restrictions made by the receiving country. The social and cultural barriers like the lack of language skills and qualification or the social differences, the different employment systems or social insurance and tax systems can also be restrictive factors. The personal causes like persisting to the domestic environment can be also a barrier of the labor flow. (T. Bauer and K. F. Zimmermann, 1999). These migration obstacles can contribute to the fact that the migration intensity from the Hungary, Slovakia and Czech Republic is relatively low as it is stated in the literature review.

2.1 The labor market of the European Union

In the Lisbon Agreement the European Union had the aim to become a more dynamically developed and a more competitive knowledge-based economy,- which is able to maintain the stable and sustainable development, while ensuring stronger social cohesion for the citizens of the Member States. They defined several priorities in order to achieve this economic and social cohesion like ensuring full employment, creating new employment opportunities and decreasing both the unemployment and social, regional differences.

The citizens of the member states countries became EU citizens, which give them the right for the free movement of labor, goods, capital and services. In this thesis I focus on the free movement of labor, which means that EU citizens can freely work in other Member States

and they have exactly the same rights as the home country citizens. Although we speak about uniformed European Union, we cannot forget that there are very large developmental differences among the new and the old member states and these differences influence the labor market of the European Union. Due to the Eastern enlargement those countries joined the Union, that have lower GDP compared to the EU level (see in appendix, chart 4), therefore the differences increased in both living standard and income level among the member states.

After the Eastern accession temporary restrictions were introduced against the new member states except for Cyprus and Malta, where there were no limitations at all. Only the free movement of employees was restricted, therefore the citizens of the Union could freely travel from one country to another as tourists, students. However the accession makes an opportunity on the free movement of capital as well. What does this exactly mean? The level of investments rose to the Eastern more capital-poor part of Europe from the Western countries that own more capital. This increased not only the production of the Eastern states; but also the differences of the living standards became more balanced among the member states, furthermore the investments created more work placements for the capital receiving countries.

As the GKI research states for Hungary, the EU accession is advantageous for their economic production and for the employment and the situation is similar in case of Czech Republic, Slovakia and Poland. Joining a bigger and more complex market can also increase the wage level of the countries in the long run, since it is also expected to fall into the line with the Western norms? In spite of the slow process of the falling into line, for the four Visegrad

countries the accession contributes to the increased production of the country, therefore the full employment, the decreasing the unemployment.

The enlargement of the European Union implies two sided migration patterns. Hans-Werner Sinn discussed the simple transformation model, which focuses on countries that join a larger community such as the Visegrad countries joined the European Union after 2004. In this paper the smaller economy represents the "underdeveloped" Central-European countries and the large economy is the European Union, where the wages and capital concentration in production is much higher. While technology and knowledge move freely across the borders, flow of capital and labor includes some migration costs, which helps to keep the wage level different in the Eastern and Western states. Due to the opportunity and the hope for higher wages and development, people from the Eastern countries tend to migrate to the more developed old member states. The lack of workforce in the old member states on one hand increases the wage levels and on the other hand it kills the inefficient jobs. As a consequence of the migration, capital will go to the new countries by degrees, which lead to a raise in the salaries, employment rate and labor demand. If the migration costs will offset the benefits and wages are on the same level in the Western and Eastern countries, people start to move back to the new member states. Economists regard that this transformation process is maximizing the welfare of the whole Union, therefore the Commission of the European Union should "neither impose constraints on the migration" of employees nor try to avoid movement of labor by supporting the new countries (H. W. Sinn, 2000). Portes and French conclude that "the overall economic impact" of migration from the new EU Member States "had been modest, but broadly positive, reflecting the flexibility and speed of adjustment of the UK labor market". (Portes and French, 2005, pg. 33)

Roy discussed the migrant self-selection in his model, which is driven by comparative advantages of people (Roy, 1951). Income distribution has an important role of flow of migration as if it is more equal in the target country than in the sending country then the low-qualified workers are more likely to move to that country and vice versa (Borjas, 1987). Higher equality in distribution of earnings rather occurs in wealthier countries, therefore Roy model assumes that migrants from a poorer country will be inauspiciously treated with regard to their knowledge and skills appropriate to their labor market performance (H. Braucker and C. Defoort, 2007). The low intensity of migrants from the Visegrad countries can be explained by it, since the four Central-Eastern European states are less wealthy compared to average of the old member states (see chart 4 in appendix) and they might have fears that they will not be able to have a job meeting their expectations and skills (except from Poland). Due to the number of migrant workers is increasing from the lower income countries, „the negative selection bias of the migrant population in OECD countries may increase over time" (H. Braucker and C. Defoort, 2007).

2.2 Three periods of the migration restrictions against the new member states

The UK, Ireland and Sweden ensured the free movement of labor to the citizens of the ten new members following their accession to the community; however the other twelve countries imposed some restrictions against the new countries up to a transitory period except for Malta and Cyprus. They can exercise labor market controls up to seven years and after two and five years, so in 2006 and 2009 the old member states have to give some explanations why they want to still hold the restrictions (EUROsimA, 2010). A Münz regards the most threatened countries Germany and Austria are expected to maintain them at least until 2011; however they cannot totally avoid migration, since the citizens of the new member states still have the

right to move as a student, a pensioner or by marriage. After the transitional period in 2011 an increase of labor flow from Hungary, Poland, Slovakia and the Czech Republic is expected to occur, as they will have full access to the German and Austrian labor market as well. Austrian people have concerns about the East-West migrants; however additional migrants are greeted to fill in the labor market gaps. A decline in labor force is supposed by 500,000 within the next twenty years, therefore migration can be gainful if highly-educated people are moving from the neighboring countries to Austria. Until now mainly qualified workers with good knowledge of German language migrated, who want to be a part of the Austrian society, therefore migration cannot lead to cultural and social problems and it is reasonable to suppose that it will not be a problem after 2011 either.

Due to the restrictions imposed, Central-Eastern European migrants tend to rather to move to countries without any constraints like UK, Ireland or Sweden.[3] As a conclusion economists regards that Austria and Germany must be very cautious "not to miss the opportunities that East-West migration provides" (R. Münz, pg. 2).

According to EUROsimA (2010) besides the UK, Sweden and Ireland, the free movement of labor has been provided among the ten new member states since their accession to the community (2004). In 2006 Portugal, Spain, Italy, Greece and Finland removed the restrictions against all of the Visegrad countries. One year later Polish, Hungarian, Czech and Slovakian workers were able to access the Holland and Luxembourg labor markets and the French one in 2008. In 2007 Bulgaria and Romania also joined the community and they opened their workforce market right after their accession to the Visegrad countries (however my analysis do not include Romania and Bulgaria just the EU-25 member states). In 2009

[3] those, who are seeking for higher wages and better working conditions, move to the attractive US and Canada

Belgium and Denmark joined the line and finally as I mentioned before Austria and Germany is expected to remove their restrictions and offer free access to their labor market from 2011. Hungary was the only one among the four countries, which also decided to impose similar measures on the countries which control the Hungarian migration (Rainer Münz).[4] The date when the member states abolished the labor market restrictions and when the free movement of labor is ensured for the Visegrad countries are listed in the appendix (Table 3).

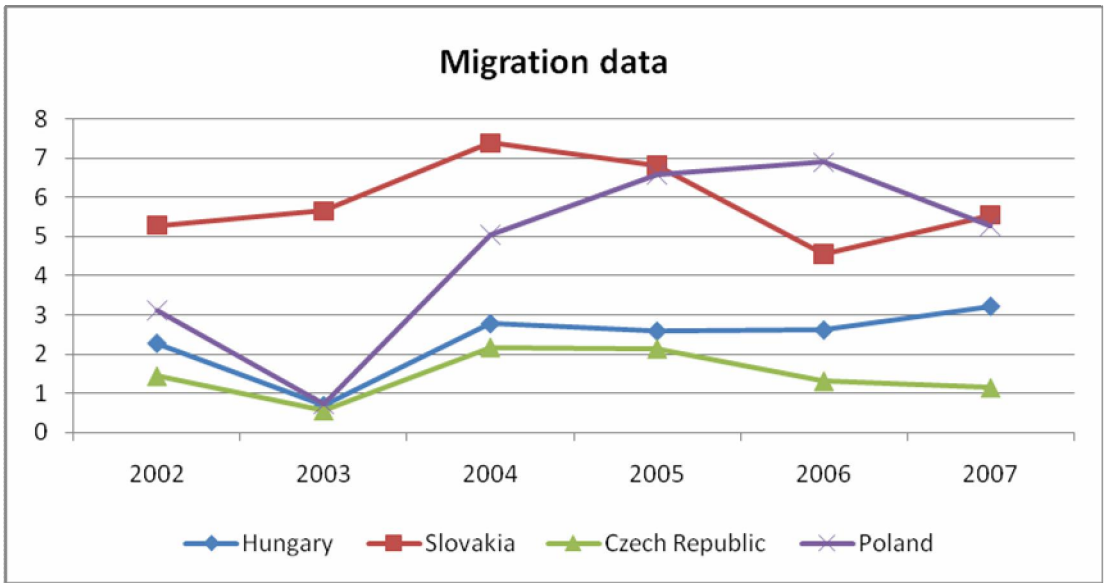
[4] The old member states did not open entirely their labor market for the Visegrad countries in 2004; the EU-15 did not provide the free movement of labor to the new member states. They decided to abolish their labor market restrictions only step by step, however the free movement of labor is expected to be ensured for the Visegrad countries within the whole European Union just by 2011.

3 EMPIRICAL ANALYSIS

3.1 Data specification; migration data and targets

The main data contains migration numbers and economic factors of the countries, which derived from the Eurostat, which is the main statistical database of the member states of the European Union and the candidate countries. The discussed Easter enlargement occurred in 2004. My sample includes migration data of the four countries towards each of the Western countries. The time period includes six years from 2002 to 2007 in order to compare the situation before and after the accession.

Chart 1: Migration of the four countries towards the member states of EU (%)

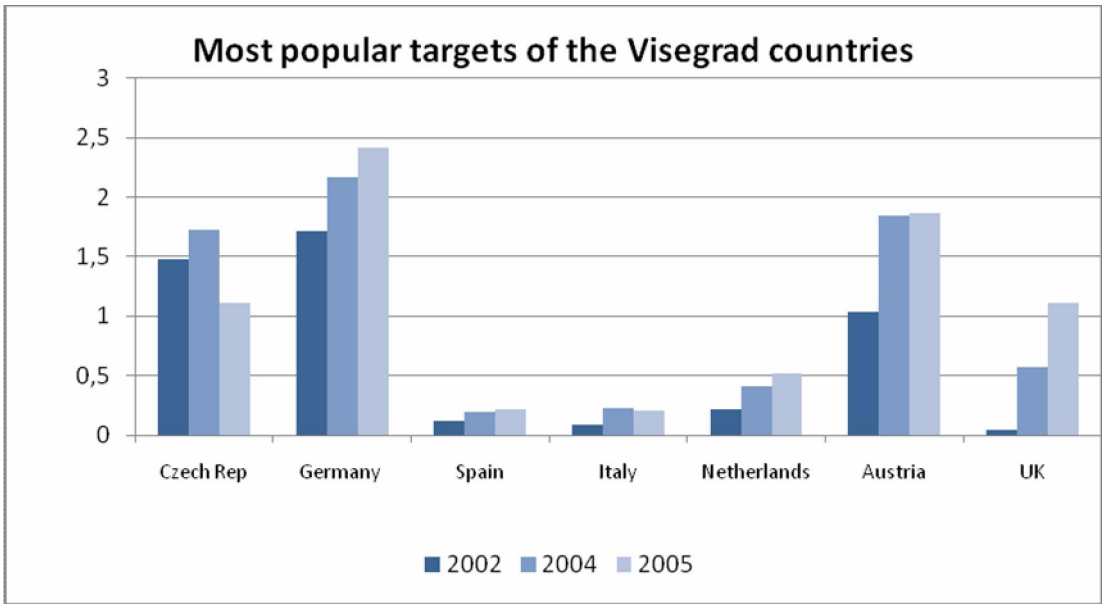


Source: Eurostat, accessed in May, 2010

Chart 1 shows the intensity of migration of the four Visegrad countries, it indicates how the migration activity changed after the EU accession in 2004. The chart shows how many people from 1,000 residents emigrate from the given country to another member state of the European Union from 2002 to 2007. The labor outflow from the four countries increased right in 2004, however after the EU accession the tendency of migration differed in the case of the four countries. We can easily see that Union membership has a significant effect on Polish

labor market, since its migration doubled from 2002 to 2005. In 2002 three from 1,000 people moved and in 2005 six and one year later even seven people from 1,000 residents decided to live in another member state of the European Union. In 2007 the Polish migration started to decrease and reached its 2004 level. In Hungary the labor force outflow slightly rose from one people to approximately three from 1,000 residents and this increase is continuing further to some extent, which means that the EU accession affected the labor outflow positively but only in a quite low level. In the other two countries, Slovakia and Czech Republic the enlargement has a small positive effect right after the accession; however after 2005 it became even smaller than before 2004. In 2006 only one Czech and five Slovak residents from 1,000 people migrated away and by 2007 their labor outflows were the same as in 2002, therefore we can realize that in long-run the EU accession will not have significant effect on their migration activity. The chart shows that the labor outflow from the Slovakia was large even before the accession which can be explained by the huge Slovak migration to the Czech Republic. It can be concluded that Polish employees are most eager to work abroad.

Chart 2: Most popular targets of the Visegrad countries before and after the accession



Source: Eurostat, accessed in May, 2010

Chart 2 shows which countries are the most popular for the four Visegrad countries, how many people of the 1,000 residents of the receiving country come from one of the four countries. Germany is the primary destination both before and after 2004, about 2-3 people of 1,000 German residents is from one of the Visegrad countries. The migration level towards UK increased most significantly after the accession, maybe because Great Britain was one of the three countries, which opened its labor market right after 2004. Popularity of Czech Republic can be especially derived from Slovakian immigration, but the intensity of the labor force outflow started to decline after 2004 since they had access to other markets with higher wage opportunities. Austria is also a popular destination country, its immigrants almost doubled after the EU accession. Claire Wallace (2002) also concluded that the primary target countries are Germany and Austria due to its close location to the Central-European countries. Besides it, I also analyzed why citizens moved to the specific foreign countries such as better working and living conditions. I measure these conditions by the GDP, the minimal wage and the unemployment rate of the target country. These data also comes from the central statistical database of the Union, the Eurostat.

3.2 Estimation method

In this paper I use simple panel data method because I observe the same destinations in different years. My regression is the following:

$$Migr_{c,i,t} = \alpha_{c,i} + \delta_t + \beta_1 Join_{c,t} + \beta_2 GDPperCap_{i,t} + \beta_3 Unemp_{i,t} + \beta_4 MinWage_{i,t} + u_{c,i,t}$$

$Migr_{c,i,t}$ variable contains the migration numbers of the four countries in destination *i* and at time *t* (year) and *c* indicates the country of origin which can be Hungary, Czech Republic, Slovakia and Poland. The $Join_{c,t}$ variable is a dummy variable, which shows whether the country has already joined the European Union or not. As all of the four countries joined the

Union in 2004, the join indicator equals 0 before 2004 and 1 afterwards. The destination fixed effect is α_i which arises in the regressions of each country, which contains all unobserved time constant factors that effect $migr_{c,i,t}$ and the time fixed effect is δ_t, which can be considered as all time dummies except for the reference year. This simple regression equation likely suffers from omitted variable problems, therefore I tried to control these factors with destination fixed effect and year fixed effect which can be, for example, GDP per capita, unemployment rate and minimal wage of the receiving country, the destination. These variables show how wealth the target country and what working and living conditions it can provide, which can affect the decision of the people who are considering to move and to work in a Western member states of the European Union.

Since they are constant over time, I can eliminate these causes with a simple differentiation like the first difference – it is just a simple cross sectional equation, but each variable is differenced over time – or fixed effect estimations, which can be calculated by subtracting the average effect over time from the original equation. In order to choose between the two methods the Durbin-Watson test statistics must be used. Since the test requires really strong assumptions like strict exogeneity, and on top of this the decision rule of this test statistics is complicated. Therefore, from another point of view, I chose first difference estimation instead of fixed effect estimator because the autocorrelation in the error term can be eliminated by using this method (Wooldridge, 2003).

$$D(Migr_{c,i,t}) = \beta_1 D(Join_{c,t}) + \beta_2 D(GDPperCap_{i,t}) + \beta_3 D(Unemp_{i,t}) + \beta_4 D(MinWage_{i,t}) + D(\delta_t) + D(u_{c,i,t})$$

From the pooled equation the constant term and the fixed effect estimator are eliminated.

Table 1 includes the variables used for the regressions, their meaning, their mean value, standard deviation, minimum and maximum value and the numbers of the observations;

minimal value equals 0 if there is no migration towards the given destination. I used 150 observations for the regressions.

Table 1: Variables used for the regressions

Variable	Meaning	Mean Value	Standard Deviation	Maximal value	Minimal Value	Observations
Migr_HUN	Number of people emigrated to the EU-25 countries from Hungary in a given year	94,24*	347,96*	2272,96*	0*	150
Migr_SK	Number of people emigrated to the EU-25 countries from Slovakia in a given year	234,95*	666,04*	4533,23*	0*	150
Migr_CZ	Number of people emigrated to the EU-25 countries from Czech Republic in a given year	58,58*	180,71*	1092,45*	0*	150
Migr_POL	Number of people emigrated to the EU-25 countries from Poland in a given year	184,14*	695,88*	4288,67*	0*	150
Migr_Total	Number of people emigrated to the EU-25 countries from the Visegrad countries in a given year	154,08*	526,28*	3175,51*	0*	150
Join_HUN/ SK/CZ/POL	Indicator of weather the country of origin was already a member of EU when the observation is taken; 0=no, 1=yes			1	0	150
GDPperCap	Gross Domestic Product per inhabitant in a year, in Euros	20403,99	14645,92	78100	2100	150
Unemp	Average annual unemployment rate in percentage	7,74	3,6	20	2,6	150
MinWage	Monthly minimal wage in a given year, in Euros	388,71	469,09	1570,3	0	150

* Migration rates divided by 1 million population

Source: the data are coming from Eviews 5.1 statistics based on the data from Eurostat.

3.3 Discussion of results

I have run five regressions in order to analyze the effects of the European Union accession on the labor market of Czech Republic, Hungary, Poland and Slovakia and the total joint effect on the labor outflow from the four Visegrad countries.

Since the pooled OLS method provided biased results, none of the coefficients are significant and the sign of the variables is contrary to my expectations. I ran the regression with first difference estimator due to the above mentioned causes. All five regressions of migration originated from each Viesgrad country are run on the join dummy and on the control variables; GDP per capita, minimal wage and unemployment rate. White errors are taken into consideration in order to get rid of serial correlation and heteroscedasticity. The country fixed effects are captured by the first difference estimation and the time trend is also included, which is expected to influence the outcomes. The results of the regression are illustrated in table 2.

Table 2: Regression coefficients (first difference included), difference in migration from each country as a dependant variable

	Independant variables				
Dependant variable	D(JOIN)	D(GDPPERCAP)	D(MINWAGE)	D(UNEMP)	Intercept
Czech Republic	881.38***	0.11*	-5.82	-134.71	-284.13**
	(120.5)	(0.06)	(5.99)	(88.27)	(122.83)
Hungary	997.96***	0.18**	-6.48	-142.5	-282.95
	(301.19)	(0.09)	(6.31)	(167.33)	(357.98)
Poland	7701.72***	0.25	-2.2	-345.93	-1285.98
	(1874.1)	(1.1)	(83.87)	(1193.09)	(2391.94)
Slovakia	515.36***	-0.06	-0.72	-131.71**	-78.82
	(82.43)	(0.12)	(8.31)	(64.74)	(109.63)
Visegrad countries	10096.41***	0.49	-15.53	-754.85	-1931.89
	(2288.72)	(1.09)	(84.95)	(1445.53)	(2797.95)

*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Source: the data are coming from Eviews 5.1 statistics based on the data from Eurostat.

In all cases the join variable is significant even at 1% significance level and the regressions show that the join has positive effect on the labor outflow, which means that during the six year period the labor outflow from the Visegrad countries strengthened due to the EU accession, more and more people tended to move and work in the western countries after 2004. The effect is the same in case of all countries; however the intensity of the increase is different among the countries. The regression shows how many people more want to move on average to any of the twenty-five member states of the EU from the Viegrad countries if the given country has already joined the EU and everything held fixed. In case of Czech Republic after the EU accession 881 people more annually want to work in the EU 25. In Hungary the intensity is slightly higher, 997 Hungarian citizens decided to move after 2004. The labor outflow from Slovakia is the least concerned by the EU accession, only 515 more people decided to take their chance in another member state of the European Union. Poland profited mostly from their EU accession, 7,701 Poland citizen more worked in the EU-25 after 2004, even if we take into consideration that Poland is almost four times larger than the other

countries (see in appendix, chart 3), since the migration intensity of Poland is about eight times bigger than from the second best performing country, Hungary.

First of all I show the joint product of the regression of the four Visegrad states and then I also introduce their separate outcomes. The results mostly meet my expectations, although only the join variable is significant, the signs of the control variables are mostly reasonable. GDP per capita positively affects the labor outflow and the unemployment rate influences the migration intensity negatively. I expected if the minimal wage level is higher, labor outflow will increase, however the regression shows that it cannot proven statistically and the minimal wage level negatively influences the migration. In this case interpreting the interception is meaningless since it would mean that the given country did not join the EU, the receiving country has no unemployment and its minimal wage and its GDP per capita equals to zero, which is more than unrealistic.

In Czech Republic besides the join variable, GDP per capita is statistically significant at 5% level. If the GDP per capita increases by €10 in the receiving country then one Czech citizen more will decide to move to that member state, which meet my expectations that richer countries are more attractive, since immigrants have higher earnings opportunities and better living standard chance. In case of Czech Republic neither the minimal wage nor the unemployment is significant. The negative sign on the unemployment variable is meaningful that if it is increasing in a receiving country less Czech people are tend to move and work there, however the negative sign on the minimal wage level is not reasonable since the regression shows if the minimal wage is lower in destination state more Czech citizens choose to move there.

In case of Hungary GDP per capita is the mostly determinant in choosing the migration destination, since it is the only statistically significant variable at 5% level besides the join variable similarly to the Czech example. If the GDP per capita of the receiving country increases by €10, about two more people tend to move to that destination. The unemployment and minimal wage level of the receiving country is statistically not significant and the signs of the two variables are the same as in the regression of Czech Republic.

In case of Poland only the coefficient of join is statistically significant, however the signs of the control variables meet my expectations except for coefficient of the minimal wage level. The outcome of the regression of Slovakia is slightly different from Hungarian and Czech one. Besides the join variable the coefficient of unemployment is also statistically significant at 5% level and it negative sign is also meaningful. It means if the unemployment rate is lower by 1%, 137 more people tend to move to any of the 25 member states, which meets my expectations.

As we taking the Visegrad countries in one unit the EU accession affects the labor outflow, however the migration intensity differs among the four states. As considering the control variables minimal wage has no influence at all in choosing the destination, however GDP per capita is decisive in case of Hungary and Czech Republic and unemployment rate in case of Slovakia.

3.4 Some caveats

There might have some evidence that the results face with several limitations due to the lack of data availability, therefore the examined period is too short to capture long term effects of the EU accession. Another problem might arise due to fact that the labor market restrictions were not simultaneously eliminated, so an unpredictable bias can come up here. Also by

comparing emigrants to the whole population of the Visegrad countries, the opportunity of the free movements of labor does not affect the labor outflow.

Besides these above mentioned facts, the results are still reasonably confident.

4 CONCLUSION

I analyzed how the European Union membership affected the labor outflow from the four Visegrad countries. Before running the regression I expected that EU accession positively influenced their migration activity, which means more people decided to work and live in the Western Europe after 2004. However in accordance with the literature I also expected that the migration intensity was low especially from Slovakia, Hungary and the Czech Republic.

I used the Panel Data Method with first difference estimator. By running the regressions of the four member states both individually and aggregately I could conclude that the results supported my expectations and described the positive statistically significant effect on the labor outflow and the highest migration activity can be realized in case of Poland.

I could further improve my regressions by adding the control variables such as GDP, minimal wage and unemployment rate of the destinations. I decided on these variables, since they showed how wealthy the target country was and economists concerned that the richer countries that were able to provide higher living standard for the immigrants are more attractive. I could conclude that the GDP per capita and unemployment rate of the destination could be influential, however the minimal wage had no significant effect on the migration activity at all and also it was even negatively influence the choice of the immigrants.

Since the four Visegrad countries joined the European Union just 6 years ago; it could be useful to redo this analysis in the future, when more data are available.

5 APPENDIX

Picture 1: Map of the Visegrad countries

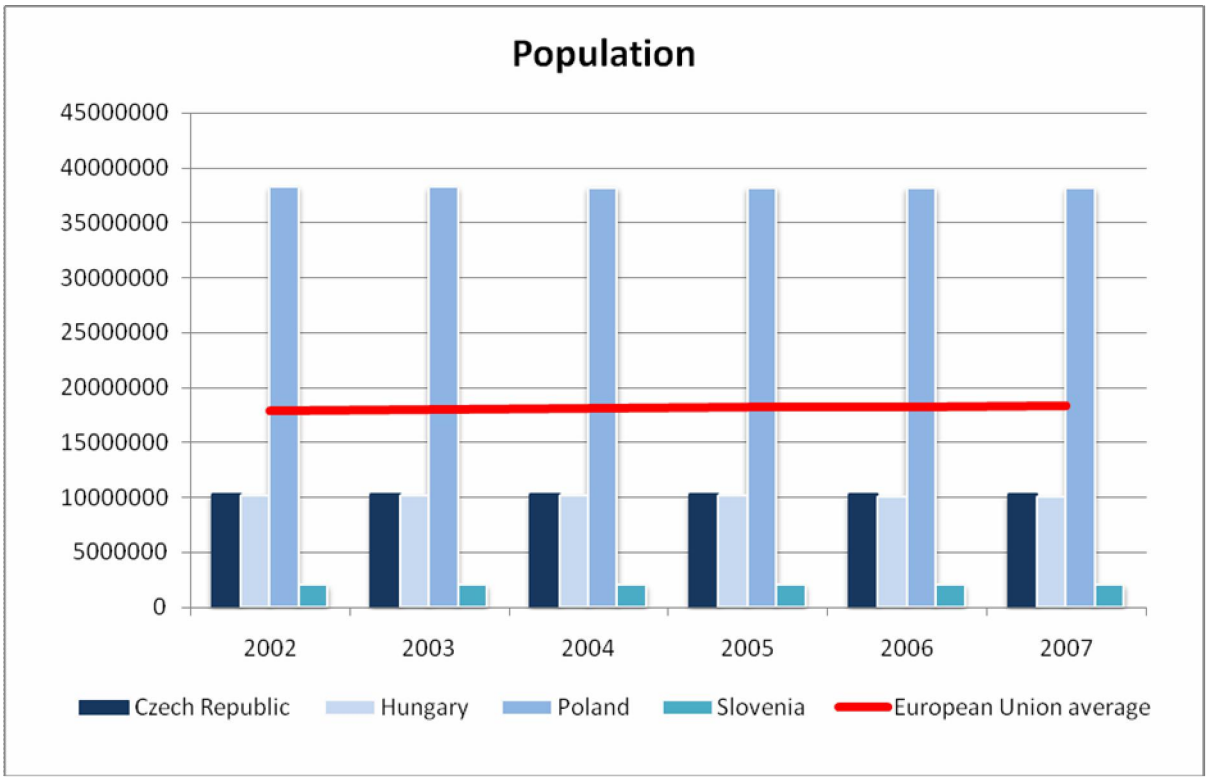
Source: Official website of Visegrad countries

Table 3: Date of opening of the labor market

	Poland	Hungary	Czech Republic	Slovakia
Portugal	2006	2006	2006	2006
Spain	2006	2006	2006	2006
Italy	2006	2006	2006	2006
Greece	2006	2006	2006	2006
France	2008	2008	2008	2008
Germany	2011	2011	2011	2011
Austria	2011	2011	2011	2011
Belgium	2009	2009	2009	2009
Netherlands	2007	2007	2007	2007
Luxembourg	2007	2007	2007	2007
Denmark	2009	2009	2009	2009
Finland	2006	2006	2006	2006
Ireland	2004	2004	2004	2004
UK	2004	2004	2004	2004
Sweden	2004	2004	2004	2004
Cyprus	2004	2004	2004	2004
Malta	2004	2004	2004	2004
Estonia	2004	2004	2004	2004
Latvia	2004	2004	2004	2004
Lithuania	2004	2004	2004	2004
Poland		2004	2004	2004
Hungary	2004		2004	2004
Czech Republic	2004	2004		2004
Slovakia	2004	2004	2004	
Slovenia	2004	2004	2004	2004
Bulgaria	2007	2007	2007	2007
Romania	2007	2007	2007	2007

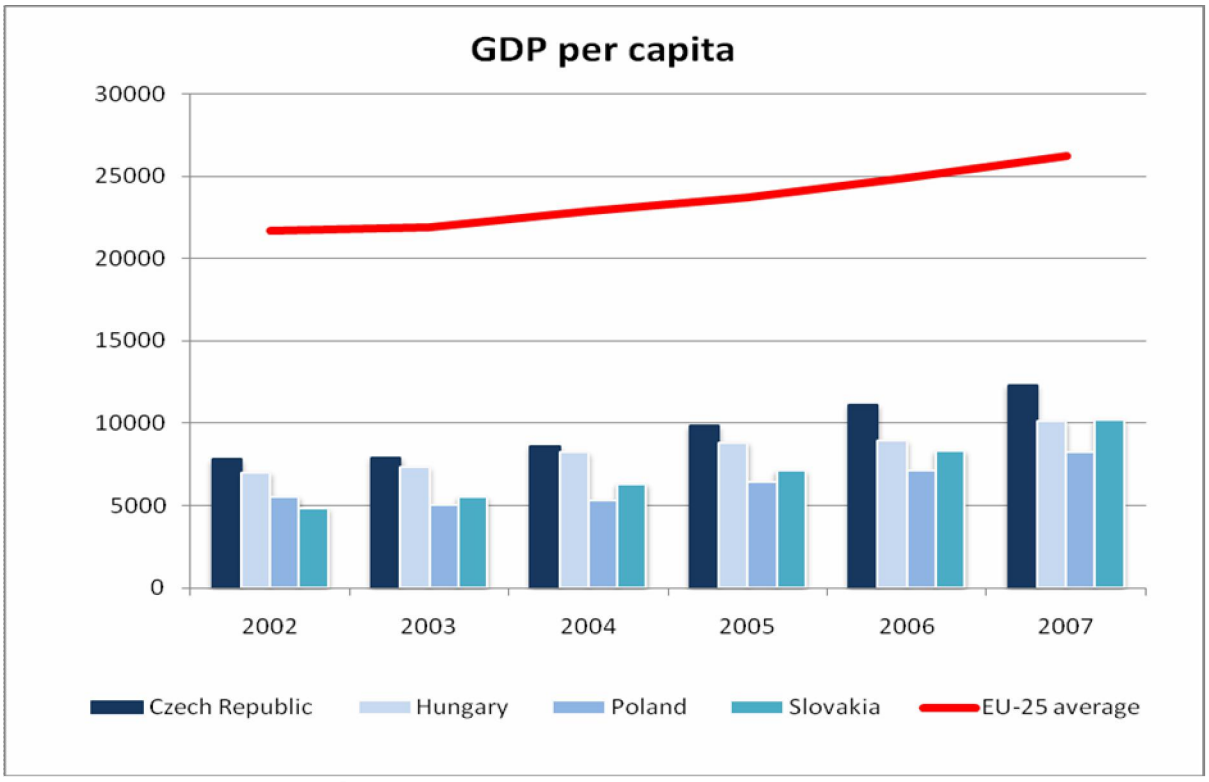
Source: EUROsimA 2010 Academic Team

Chart 3: Comparison of the population of the Visegrad countries and the EU-25 average



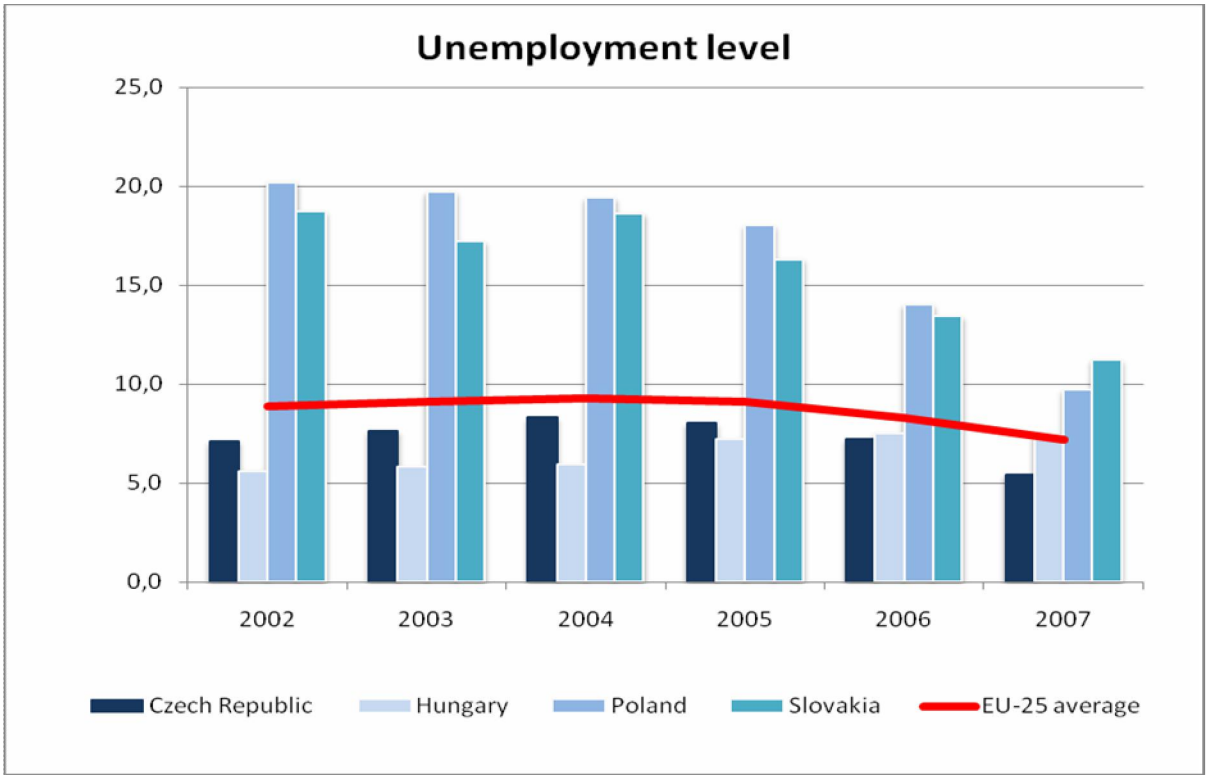
Source: Eurostat, accessed on May, 2010

Chart 4: Comparison of the population of the Visegrad countries and the EU-25 average



Source: Eurostat, accessed on May, 2010

Chart 5: Comparison of unemployment rate of the Visegrad Four and the EU-25 average



Source: Eurostat, accessed on May, 2010

Chart 6: Comparison of minimal wage rate of the Visegrad Four and the EU-25 average

Source: Eurostat, accessed on May, 2010

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