# LABOUR FORCE MIGRATION WITHIN EU: ANALYSIS OF PUSH AND PULL FACTORS

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## Abstract

This thesis analyses recent intra-EU migration trends and migration policy changes in the European Union. I find that migration policies adopted by separate EU member states in many cases put more focus on the outcomes of the migration process rather than on the changes of the economic incentives behind it. Therefore, the goal of this thesis is to identify key push-pull factors of the intra-EU migration in the period of 2000-2011 by carrying out econometric analysis based on the gravity model. There are four key findings of my empirical study. Firstly, labour market characteristics (average wage and unemployment rate) are statistically significant intra-EU migration. Thirdly, the findings also suggest that there are significant regional differences in intra-EU migration and push factors tend to be more significant in the migration process from new to old EU member states. Finally, I show that two big shocks in the period of 2000-2011 (EU enlargement and the global financial crisis) made the intra-EU migration process more wage sensitive. Based on the finding I propose policy suggestions that include the ways to improve selective migration. In addition, I suggest keeping a certain level of freedom for regional adjustments when unifying EU migration policies and also improving the labour market supervision for certain countries.

Key words: intra-EU migration, migration policies, push-pull factors

# Table of Contents

Introduction
1. European migration
1.1. History of European migration
1.2. Current trends of intra-EU mobility
1.3. Labour market of the migrants13
1.4. How does the intra-EU migrant look like?17
1.5. EU migration policies
2. Migration theories and empirical evidence
2.1. Neo-classical migration theory
2.2. Gravity model for migration
2.3. Push-pull factors theory
3. Empirical study
3.1. How important is labour migration?
3.2. Methodology and data commentary37
3.3. Empirical findings
3.3.1. Original gravity model
3.3.2. Modified gravity models: the influence of economic factors
3.3.3. Regional differences in intra-EU migration
3.3.4. The influence of EU enlargement policies and global financial crisis
Conclusions
Policy recommendations
Appendix
Reference List

# The list of the Tables

Table 1. Top 5 receiving and source countries in intra-EU migration in 201110
Table 2. Population trends in top 5 receiving countries    11
Table 3. The historical link between migration-related researches and policy responses
Table 4. A summary of the main push-pull migration factors
Table 5. Reasons for migration (% of total migrants)
Table 6. Correlations between dependent and independent variables
Table 7. Estimation results: Stewart's model42
Table 8. Estimation results: neo-classical (macro level) migration theory
Table 9. Estimation results: the influence of economic factors on migration decision47
Table 10. Estimation results: regional differences in intra-EU migration
Table 11. Estimation results: the influence of EU enlargement and the crisis

# The list of the Graphs

Graph 1. Net migration in European regions (in thousands of migrants)	ý
Graph 2. Unemployment rate in EU-27 (%)1	5
Graph 3. Age structure of immigrants by basic citizenship groups, EU-27, 2008 (1)18	3
Graph 4. EU8 population in major EU15 receiving countries, 2005-2011 (thousands of people)22	2

## Introduction

Migration process changes the "face" of a country. With boundaries and migration costs decreasing, countries become more and more culturally diversified. Foreign workers significantly contribute to a country's economic growth – they pay taxes, buy goods and services, some even create new jobs for others. Moreover, they also contribute to the economy of the country of their origin. Emigrants tend to send back home part of the money they earn– in 2012 over \$400bn were sent as remittances to developing countries (ILO, 2013). As the unemployment rate is expected to rise over the years and Europe is rapidly ageing, the number of migrants is expected to increase steadily over the years. According to the projections of OECD, Germany will need approximately 3.6 million immigrants a year in the period of 2000-2050 to keep up its constant dependency rates (K. Lorant, 2005). Without the support of immigrants the old age dependency ratio in EU would increase dramatically putting high pressure on the social welfare, health care and pension systems. The demographic changes that Europe is undergoing increase the importance of the sound management of migration process.

Migration brings to a country new opportunities as well as challenges. With a properly managed migration, a country can stimulate its development and economic growth by sufficiently using extra labour force or benefitting from remittances. On the other hand, migration can bring lots of social, security and economic problems. Poorly integrated immigrant minorities can cause social tension in the country. In addition to that, high level of emigration in certain EU states reduces the working capacities of the country itself, may slow down the economy and may also reduce the income of the public budget. These are the main issues addressed by the EU politicians focusing on migration. In the past decade intra-EU migration became one of the most popular topics for EU policy makers, politicians and researchers. The implementation of free labour force movement regulations changed the economic, demographic and social stance of the countries. The increasing amount of debates about migration from East to West Europe has been mainly based on the researches providing results of an impact of migration process or in the worst cases – based on prejudice, "populist" ideas or a fear of increasing amount of social welfare migrants. This research, as few others analysing intra-EU migration (M. Kahanec (2012), Y. Pascouau (2013)), focus on the immigration as a beneficial process for a country. In particular, this thesis differs from majority of researches in the way that it provides an analysis of the key drivers of intra-EU migration rather than consequences. The findings of the empirical study proves the importance of economic incentives in the intra-EU migration process and therefore oppose the migration policies focused on manipulating the access to social benefits as the key for controlling immigration.

Many steps have been taken in uniting the migration policies within EU. Unfortunately, the global financial crisis triggered a relatively negative response from different countries within EU and policy makers adopted a lot of immigration-unfriendly policies. Most of them were focused on reducing the number of work permits, limiting the access to social benefits or even introducing restrictions on certain countries (e.g. Greece and Hungary tightened restrictions for immigrants from Romania and Bulgaria). Unfortunately, those policies were mainly adopted under the pressure and did not reflect the short and long term demographic and economic goals (J. Koehler et al., 2010). The lack of in-depth analysis of main migration drivers in some countries (like UK which did not manage to bring net migration down and Lithuania which still struggles with high emigration rate) resulted in a lack of effectiveness of the policies. Despite the attempts, EU migration laws still widely differ among the member states.

Despite the differences in national migration laws, there is a great number of people moving within EU and using the advantages of borderless Europe. The intra-EU migration in 2011 increased the populations of top five host countries (Germany, UK, Spain, France and Italy) by

700,000 people. In terms of emigration, the top five EU countries in 2011 sourced above 800,000 people (most mobile were Polish, Romanians and French). It is a great responsibility for the policy makers to make this process easier and at the same time to ensure that migration does not harm national economies. State has an undeniably big power in balancing migration through influencing push and pull factors. The decisions that policy makers make have an impact on both – immediate labour market outcomes as well as perspectives of long term economic integration (A. Cangiano, 2012). Therefore, a thorough understanding of migration patterns and drivers is key in adopting successful and fruitful migration policies.

Historically there has been many attempts to explain what determines a person's choice to migrate. Most of the researchers base their analysis on the neo-classical migration theory. C. A. Pissarides and I. McMaster (1990) present strong statistical proof of an importance of the wage differentials in determining migration. D. Karemera et al. (2010) reach the conclusion that the size of a source country's population and income of receiving country are the key migration drivers. Nevertheless, many more researchers argue that those economic factors are not enough to determine the complex personal choice of migration and there are many more cultural, demographic, environmental and other factors that contribute to this process. D. Chiquiar and G. Hanson (2002) proved the importance of education, R. Ramos and J. Surinach (2013) showed the relationship between the distance, cultural and colonial history with decision to migrate, P. Antolin and O. Bover (1997) pointed out the importance of personal characteristics. Unfortunately, most of these researchers analyse international rather than intra-EU migration. Eurostat, Eurobarometer, International Migration Institute and other release periodical analysis of the intra-EU migration trends but do not carry researches of the importance of separate key migration drivers.

The goal of this thesis is to determine what were the main intra-EU migration drivers (pushpull factors) in the period of 2000-2011. The analysis mainly focuses on the importance of the economic (wage, unemployment rate, unemployment benefits) as well as some non-economic (population, distance, language) factors. I raise hypothesis that pull factors (the changes made in a host country) have more influence in predicting migration patterns. I also prove that there are regional differences in intra-EU migration and raise a hypothesis that two major shocks in the period of 2000-2011 (EU enlargement and global financial crisis) had a significant impact on the change in migration patterns from new to old EU countries. To prove my hypotheses I use gravity model for migration follows the patterns of the classical gravity model – immigration decreases with an increase of the distance between the countries and increases with the greater population of host or source countries. I also prove that the average wage and unemployment rate are statistically significant economic factors influencing personal migration choice. My first hypothesis that pull factors play more important role is accepted when the sample consists of all EU country pairs and rejected when the model includes only migration from new to old EU countries. Finally, I accept my second hypothesis and show that the immigration process became more wage sensitive due to EU enlargement and global financial crisis.

My thesis starts with an overview of European migration where I present the common migration trends and policy adjustments that responded to the changes or on the contrary, triggered the changes in the intra-EU migration. The second chapter gives a theoretical background of migration theories that have been developed throughout the years as an attempt to explain the reasoning behind the migration process. This chapter also presents the findings of economic researches that have been conducted in order to support the existing theories. The third chapter includes an empirical study where I try to identify the importance of regional differences and economic factors in migration process and accept (or deny) my hypotheses. Finally, I draw the conclusions and present policy recommendations that are in line with my findings.

## 1. European migration

This chapter provides an overview of the history of European migration as well as current trends of the intra-EU migration. Moreover, as the goal of this thesis is to identify key push-pull intra-EU migration factors, the sub-chapter 1.3.sets the base for the analysis of pull migration factors by providing an overview of the immigrants' labour market in a host country. In addition to that, sub-chapter 1.4. specifies the characteristics of an average migrant that makes a decision to migrate or stay in a home country as a result of cost-benefit analysis of push-pull intra-EU migration factors. Finally, an overview of main migration policy changes of the last decade are analysed in sub-chapter 1.5.

#### 1.1. History of European migration

In the past decades there has been a significant change in the characteristics of migration as well as policy responses targeted towards migration regulation. Before 1950 Europe was majorly a source continent in the migration process (G. Zincone et al., 2011). Many Europeans were leaving the continent with the hopes to find better job opportunities. There was no significant restrictions for labour force migration up to the World War I. The war created a need for security, therefore passports and visas became a part of policy response which allowed to track the people movements more easily (S. Koikkalainen, 2011). Situation started to change rapidly in 1960s (in South Europe – since 1970s). The war was over and European countries became increasingly popular destinations among international as well as regional migrants. Recovering economies were more willing to accept

extra labour force from abroad. It can be seen from the Graph 1, that overall trend of European net migration has been consistent in all parts of Europe (the rate of net migration has been increasing).



Graph 1. Net migration in European regions (in thousands of migrants)

Source: Net population prospects: The 2012 Revision. United Nations

As a response to the rapidly changing situation of labour force movements, it was decided by the Council of the Organisation for European Economic Co-operation that each member country should work on liberalization of conditions for foreign workers in Europe and should submit the reports describing the process on a yearly basis. This allowed to increase the monitoring process of migration and analyse the links between migration process and the level of country's development (OECD, 2011). One of the main advantages of better monitoring process was greater availability of data. During the period of 1958-1972 more than 8 million work permits were given to foreigners in six founder members of European Economic Community (West Germany, Netherlands, Luxembourg, Italy, France and Belgium). Out of those 8 million, one third (2.4 million) were migrants from one of the other EEC countries (S. Koikkalainen, 2011). The highest number of EEC immigrants came from Italy whose economy was severely hit by the war and increasing unemployment level.

In 1973-74, global oil crisis hit economies and the level of the inflows of foreign workers in West Europe decreased dramatically. The main reason was the economic slowdown, but the increased tension between nationals and foreigners in the country played a significant role as well. Later, at the beginning of 1980s the flows of labour migrants levelled out and the migration policies were shifted towards the integration of the foreign population that was already living in a particular country. Up to the 1980s the migrants were grouped into three categories depending on the purpose of migration (G. Zincone et al., 2011, page 8):

- 1. Labour migration;
- 2. Migration with a colonial background;
- 3. Refugee migration.

Later on it was agreed that these three categories are not enough to classify all the migrants. Even though the immigration after the oil crisis did not stop, but the work related migration which was previously leading against other types, gave up for the family related migration (OECD, 2011). At this time migration process became more popular topic in political debates. It was realized that the movement of the people significantly influences country's economic situation and development, therefore should be targeted according to the country's level of development and economic perspectives. Since 1950 West Europe has never had a negative net migration value (Graph 1). This region experienced faster post-war economic recovery. People from less developed countries (mainly Eastern and Northern blocks) saw West European countries as dreamlands of better life. Soon after the fall of *Iron curtain* and collapse of Soviet Union many Eastern Europeans started to look for job opportunities in the West. The value of net migration in Baltic countries (which, according to UN, belong to North Europe) was never negative up to the 1990s. This is the result of a strict supervision and high regulations on migration outside the Soviet Union. Straight after getting back the independence, Baltic countries experienced first big wave of emigration. Total net migration of those three countries dropped from 94,000 in 1985-1990 to -348,000 in the period of 1990-1995. Some of this migration was permanent, while other – temporary, including seasonal work and travelling shorter distances. Ever since 1990s Baltic countries have never had a positive value of net migration and with the accession to EU even greater emigration wave came.

The increasing number of EU migration in the previous decades created a need for the liberalization of people movement within EU. As a result, the migration patterns in EU since 2000 (especially since 2004) significantly changed.

#### 1.2. Current trends of intra-EU mobility

Intra-EU mobility has been increasingly liberalized since the fall of *Iron Curtain*. The short distances allow people from less developed countries look for the new opportunities abroad. Nevertheless, between 2000 and 2005 the average mobility of workers within EU was only 1% per year (H. Bonin et al., 2008). In 2013 there were 0.5bn of people living in EU. 4.1% of them were living not in their countries of birth (reported as foreigners) and only 2.7% of people were migrants

with a nationality of one of the EU country (Eurostat). Therefore, even though one of the key principles of EU is free movement of people, the overall EU citizens' mobility within EU is still relatively small and mostly includes movements from East to West or between South and West-North.

Western European countries have always been more developed and richer than the Eastern ones. With the higher speed of economic growth West always used to attract more labour force from the East and the past decade is no exception. Germany, UK, Spain, France, and Italy are the top five intra-EU migration destinations (see Table 1). These countries host majority of the immigrants, both – in intra-EU and third countries related movements. The intra-EU migration in 2011 increased the populations of those countries by 700,000 people (EU-27 nationals, except from reporting country). In terms of emigration, the top five countries in 2011 sourced above 800,000 people (most mobile were Polish, Romanians and French).

	Immigration*		Emigration**	
Absolute value	Germany	226,396	Poland	214,758
	Spain	128,856	Romania	194,090
	United Kingdom	174,135	France	172,469
	Italy	113,808	United Kingdom	148,729
	France	81,342	Germany	112,049
Per 1000 inhabitants	Luxembourg	29.22	Lithuania	16.87
	Cyprus	15.64	Latvia	11.39
	Austria	7.7	Romania	9.06
	Belgium	5.58	Ireland	8.58
	Ireland	4.51	Poland	5.62

Table 1. Top 5 receiving and source countries in intra-EU migration in 2011

Source: Eurostat

\*\* nationals of reporting country only

<sup>\*</sup> EU-27 nationals, excluding reporting country

Even though countries, mentioned above, attract most of the immigrants or are main source countries in absolute value, they are also the most populous countries in the Europe. Therefore, there is no surprise that these countries attract most of the migrants. Even if Germany hosts most of the EU-27 immigrants, in terms of its total population they account only to about 2 percent. When we consider the immigration and emigration for a 1000 of inhabitants rather than in absolute value, the results change completely. In 2011 Luxembourg and Cyprus attracted about 29 and 16 immigrants per 1000 inhabitants accordingly. Most migrant were Lithuanians (17) and Latvians (11).

High level of emigration became a serious issue for some countries. For example, since 2000 to 2012 approximately 433,000 people left Lithuania and mostly did not come back. This number accounts to 1/6 of Lithuania's total population. Poland, similarly, lost a significant part of its nationals – over 1 million people emigrated from the country in the period of 2000-2012. A great loss of people (mainly working age) raised concerns in society and reduced economic capacity of the countries. As a result, policies targeted towards the reduction of emigration rate gained a significant importance.

It can be seen from the Table 1, that three countries (UK, Germany and France) were both – among the top source and destination countries in intra-EU migration process. Therefore, the insight into the change of population composition provides a better understanding of what was the actual number of EU immigrants and how did it change over the years. Table 2 summarizes the change of population compositions of top five destination countries. It also provides an overview of how countries were affected by the EU enlargement policies and global financial crisis. Due to the lack of data on UK population in 2000, the 2001 numbers are presented as proxies.

It can be seen (from the Table 2) that Germany is the most populous country in Europe as well as the country hosting most of immigrants (in nominal value). The total number of foreigners in Germany has been decreasing since 2000, but the number of EU citizens increased in 2010. The amount of EU nationals (foreigners) living in Germany that year exceeded the total population of Latvia. Most of the EU immigrants in 2008 (latest data provided) came from Poland (119,649), Romania (37,778) and Italy (25,846). Despite the fact that Germany has always attracted most of the immigrants in EU, the amount of EU citizens (foreigners) measured as a percentage of the total population did not change very significantly in 10 years and fluctuated around 2.5-3%.

		Year	ear Country				
			Germany	UK	Spain	France	Italy
Total population		2000	82,163	58,999**	40,05	N/A	56,924
	Population (thousands)	2005	82,501	58,653	43,038	62,868	58,462
	``````````````````````````````````````	2010	81,802	62,027	46,487	64,659	60,34
		2000	7,336	2.459**	820	N/A	1,271
	Population (thousands)	2005	7,288	3,066	3,371	3,623	2,402
Foreigners .		2010	7,131	4,362	5,403	3,825	4,235
	% of total population	2000	8.93	4.17	2.05	N/A	2.23
		2005	8.83	5.23	7.83	5.76	4.11
		2010	8.72	7.03	11.62	5.92	7.02
		2000	2,419	1,008**	351	N/A	231
	Population (thousands)	2005	2,212	1,174	1,071	1,265	471
EU citizens*		2010	2,546	1,92	2,063	1,332	1,241
	% of total population	2000	2.94	1.71	0.88	N/A	0.41
		2005	2.68	2.00	2.49	2.01	0.81
		2010	3.11	3.10	4.44	2.06	2.06
						Source:	Eurostat

Table 2. Population trends in top 5 receiving countries

\* Except from reporting country

\*\*Year 2001

Spain, on the other hand, was not a very popular destination country in 2000 and the number of EU nationals living there amounted only to 0.8% of the total population. EU

enlargement opened the doors to Spain and in 2005 the amount of EU citizens tripled to from 0.8% to 2.49%. During the following 5 years, despite the severity of economic crisis in the country, the number of EU immigrants increased even more and reached 4.4% of the total population. In 2012 Spain was still a popular destination country and most of the immigrants came from Romania (64,716), UK (11,407) and Bulgaria (11,306).

In general, the volume of migration has been increasing in the whole Europe in the past decade. Policy makers in EU put a lot of attention in removing barriers for labour flows. Nevertheless, in 2011 only approximately 7% of EU citizens had been working abroad and 3% were currently working in the other member state. This means that nine out of ten EU citizens have never used the advantage of relatively free labour force movement within EU. Moreover, more than half of the population probably will never use the benefits of free labour flows - 53% of EU citizens were not interested in working abroad (in 2011) and only one third of the population claimed that they might consider the opportunity to work in the other member state (Eurobarometer, 2011). People from Luxembourg and Ireland clearly stand out from the rest of the Europe, reporting that 35% and 21% (respectively) of the population did try to work abroad or currently were employed in the other EU member state. The respondents from Czech Republic, on the contrary, had the least experience of working abroad – only 4% of the population did try to work abroad and just 13% would consider to do it any time in the future (which is the lowest rate among all EU countries).

Based on the statistics provided by Eurobarometer (2011), the enthusiasm of EU labour force to migrate is not as great as policy makers would like it to be. It even decreased since 2009 when labour migration process was severely affected by the crisis. With the start of the financial crisis in 2008, EU countries experienced multiple significant negative shocks. Economies contracted and a rapid labour demand growth stimulated by the economic boom was over. Some countries saw a great decrease in the emigration rate between 2008 and 2009 (Germany, Romania, UK) while in other countries emigration boomed as locals lost their jobs and were forced to move abroad. The number of emigrants increased from 67,329 to 178,915 in Poland between 2008 and 2009; in Lithuania the number increased from 21,793 to 33,522. The main destination countries felt the crisis as well. The amount of immigrants Germany received in 2009 was 210,142 smaller than in 2008, in Italy -76,729, in Spain -44,366, in UK -30,296 and in France -7,468. The migration from EU8 countries was affected as well. The biggest drop of immigrants from EU8 was felt in UK and Ireland (Eurostat), while Germany, Spain and Italy felt smaller change in the amount of arrivals from new EU member states.

In general, work related migration was most severely affected by the crisis while other type of migration declined to a lesser extent. Despite the consistent increase in the number of intra-EU migrants up to 2008 and EU attempts to gradually liberalize migration policies, permanent regulated labour intra-EU migration decreased by about 36% from the year 2007 to 2009 (OECD, 2011).Crisis changed the face of labour market all over the Europe.

#### 1.3. Labour market of the migrants

After a great increase of the number of foreign workers in EU member states, policy makers faced a need to take some actions in order to ease up the integration process for arrivals. The policy decisions had to be adapted to each country accordingly, since the nature of work related migration differs from country to country. The stance of the labour market of the immigrants significantly influences the pull factors of the migration process.

Generally, more developed countries experience a greater amount of low skilled labour immigration while less developed countries are attracting high skilled workers from abroad who are offered a relatively high salary. At the moment of EU enlargement more industrialized countries (Germany, France, Belgium) attracted more immigrants to such sectors as manufacturing, information and communication technology. North countries employed immigrants in state agencies, community service, health and education sectors. South Europe has always been developing its agricultural traditions, therefore, such countries as Spain, Italy, Greece, were always offering some seasonal jobs in the agriculture sector as well as employment in retail, construction and tourism (L.T. Katseli, 2004).

With the opening of their markets, EU member states expected that the flow of immigrants would fill in the gaps in the labour market (especially in those markets that pay close to minimum wage). The industries that were expected to be mostly affected in UK were agriculture, manufacturing, food, production and catering. The expectations partially came true since majority of immigrants took over low paid jobs, but they also moved to business, clerical and administrative jobs (ONS). Between May 2004 and December 2006 UK registered most of the immigrants having such occupations as factory worker (270,180 immigrants), warehouse operative (39,545) and packer (32,210). In 2012 situation did not change significantly and immigrants in UK were still mainly working in a low paid sectors, such as elementary process plant and food preparation and hospitality (C. Rienzo, 2013).

Immigration changes the labour supply in a destination country. As low skilled job vacancies are being filled in, an increasing amount of jobs in UK require graduate-level qualifications. In 20 years (1986-2006) the amount of jobs that do not require proper qualifications decreased from 38% to 28% and it dropped even more to 23% in 2012. The number of jobs that do require certain qualifications was increasing accordingly from 20% in 2006 to 26% in 2012 (D. Adam, 2014). Germany has seen a similar trend. In 2013 the Labour Minister of Germany claimed that the country seeks long-term prosperity, therefore it needs skilled immigrants (EUbusiness, 2013). The country focused in attracting a greater amount of immigrants qualified in health care, electronics and robotics.

As major destination countries started to focus on selective immigration, the level of unemployment of EU immigrants has been consistently increasing since 2007. Graph 2 shows that the unemployment level of EU immigrants has been increasing faster than the unemployment level of citizens of reporting country. In order to exclude minorities living in a reporting country and having different nationality, Graph 2 presents the figures for citizens who were born in other EU-27 country rather than those who just have different nationality.





The highest jump in the unemployment level in EU was reported straight after the hit of the financial crisis. The unemployment rate of citizens of reporting country jumped from 5.4% to 6.9%. EU immigrants were affected more severely – the value of unemployment increased from 7.1% to 10.2% in the period of 2008-2009. Regardless of the level of education, foreign-born people systematically tend to have higher unemployment level than native-born people in all the reported EU countries except from Hungary and Greece (see Graph 1 in Appendix).

As the level of unemployment is increasing, more and more people become a burden for a society since these people have to be supported from the tax payers' money. With the increase of

Source: Eurostat

unemployment level of immigrants, the public dissatisfaction rise even more – people are not happy with the idea that they have to support arrivals from other countries. This leads to a situation where policy makers implement restrictions of who and under what conditions can apply for social benefits. Decreased level of availability to social protection significantly reduces country's attractiveness among the migrants.

The situation where unemployment of immigrants is rising and social benefits are increasingly more difficult to get results in and greater number of immigrants working illegally. The activity of authorities and labour unions determine which countries are more popular among migrants willing to work illegally. Denmark in general pays high wages, nevertheless, it is not very popular destination country among the low-skilled migrants. Main reason is that when it comes to hiring a person for a low paid job, local people are preferred against immigrants and since high level of regulation makes it difficult to pay lower wages than minimum, immigrants have a great disadvantage against the locals. In Denmark there are 169 trade unions. Due to high level of competition, trade unions are deeply involved in the cases of work-related injuries, wage and working conditions determination, rehabilitation and other (Work in Denmark). On the contrary to Denmark, in UK there is only one union confederation and some independent trade unions and only less than 1/3 of UK employees are the members of either of it(ETUI, 2013). With lower representation rate immigrants in UK are more vulnerable and employers have more freedom to obey the law and pay wages that are lower than the official minimum. This results in a greater low skilled labour force flow to UK even if official wages in UK are smaller than in Denmark (according to UN, the average wage in Denmark in 2012 was \$5646.8 while in UK \$4220.9).

#### 1.4. How does the intra-EU migrant look like?

The migration trends provide the information about the total number of migrants within EU. Nevertheless, some EU citizens are more willing to migrate than the others. As previously mentioned, citizens from some countries are more open to new opportunities abroad than the other. Ireland and Luxembourg have the highest ratio of people who have worked abroad. Moreover, people in Nordic countries are more willing to consider working in another EU member state -71% of Swedish and 46% of Finnish people would like to get some experience of working within EU (Eurobarometer, 2011).

There are also significant gender differences in the migration process. The migration statistics provided by Eurostat does not show a high difference in the amount of migrant males and females. It can be seen from the Graph 3, that the population structure in EU-27 for nationals and non-nationals is relatively similar regardless of gender. Nevertheless, Eurostat provides the total number of people who migrated, despite the fact that many of them migrate due to non-work related reasons (especially women, who are more likely to migrate due to family reasons). According to the Eurobarometer (2011) survey results, men are more likely to migrate than women due to work related reasons. On average 31% of male respondents would consider working in other EU member state while only 24% of women would do the same. In addition to that, the higher percentage of women are not interested in changing their country for work related reasons.





<sup>(1)</sup> EU-27 excluding BE, EL, CY, RO and UK.

Source: Internal Market: Awareness, Perceptions and Impacts. 2011. Eurobarometer. Page 20

Regarding the age, Graph 3 suggests that from the age 15 to 40 a person is most likely to migrate. Moreover, in 2008 EU migrants on average were younger than the population of the country they were migrating to. The average age of immigrants was around 28.4 (29.3 if we exclude non-EU nationals). The willingness to migrate to other EU member is negatively correlated with the age of a migrant. 54% of 15-24 years old EU citizens are willing to migrate to other member state due to work related reasons, 38% of 25-39 years old would do so, 27% of 40-54 group, and only about 10% of people above 55 years old (Eurostat, 2011).

One of the key reasons why young people are more mobile is that on average they have less constraints to move – young working age person is more likely to migrate if he/ she does not have a family nor children yet. According to the survey, the activity ratio of an immigrant woman drops from 79% to 69% with a birth of a child. Even if the immigrant women who are EU nationals are less affected by the birth of a child than non-EU ones, they still follow the same pattern –the activity ration has a negative correlation to the number of dependent children in the family (Eurobarometer, 2011).

Finally, the level of education plays an important role in making the decision to migrate as well, as more educated people are more likely to migrate. According to Eurostat (2011), people who left the school at the age of 15 or below are less willing to try their luck in the other member state (only 12% of citizens from this age group would be interested in working abroad). 23% of people who left education at the age of 16-19 would agree to work abroad and 36% of citizens who continued their education up to their 20s would move to other EU member state for job related reasons.

The outcomes of H. Bonin et al. (2008) research are in line with the discussed results of the surveys. According to the authors, a person who is more likely to migrate is a young male, who is not married and has no children, has acquired higher skills and education, is unemployed or already has experienced one or another way of movement in the past.

The typical characteristics of an average EU migrant are constantly observed by policy makers who use this information in shaping migration policies. Thorough understanding of migration patterns and drivers is key in adopting successful and fruitful migration policies. According to A. Cangiano (2012), the decisions that policy makers make have an impact on both – immediate labour market outcomes as well as perspectives of long term economic integration.

#### 1.5. EU migration policies

Despite the significant influence of various economic factors in the migration process, policy decisions determine how open the country is for the immigration. Many steps have been taken by EU in the past decades in order to encourage the process of intra-EU migration. One of the first and most significant steps taken by EU in reducing the barriers for people movement was the Schengen agreement which created a borderless area within EU. Ever since this agreement EU was working towards creating a Single European Market that would bring more freedom into the movements within EU. After signing around 280 separate legislation acts in 1993 Single European market became reality (EC). The purpose of it is to reduce the barriers and simplify existing rules for everyone in the EU. This goal is being reached by ensuring the existence of four freedoms – free movement of people, capital, goods and services. The creation of Single Market was just a beginning in a long ongoing process of securing four freedoms and many laws and treaties have been adopted ever since.

Labour migration policies of EU prioritize legal immigration that fulfils the individual labour market needs of each member state. Already in 1999 the Treaty of Amsterdam concluded that there is a need of creation of common immigration and asylum policies within EU member states. Nevertheless, the process of migration liberalization was developing very slowly as it is never easy to find a common agreement between so many countries. Member states agreed to work on family reunification question but failed to adopt common rules regarding admission of immigrants (Y. Pascouau, 2013).

The further big step taken by EU was the accession of 10 new member states in 2004. The enlargement of EU brought new work opportunities for the citizens of new member states and new labour force pools for existing ones. Nevertheless, most of the older member states decided to restrict

the labour force movements from new member states for a predefined period of time. Only three countries welcomed new immigrants from the very first day – UK, Sweden and Ireland. Before 2004, the number of EU immigrants in Sweden fluctuated around 14,000. With the EU enlargement new immigration wave came into the country bringing up the number to 16,417 in 2004 and 18,421 in 2005 (Eurostat). Ireland has seen even higher increase in the number of EU immigrants, but was still far away from UK. From all the new Eastern European countries members, Poland, Slovakia and Lithuania sourced most of the migrants to UK after the enlargement (S. Longhi and M. Rokicka, 2012). The UK net migration rate hit its high in 2004 and equalled 222,600, compared to 151,000 a year earlier. According to the ONS, about 52,600 workers came from newly accepted EU member states – this represent about 40% of the total increase in immigration rate. In the later years, the immigration rate from EU8 countries kept growing dramatically up to 2008 financial crisis (see Graph 4). Despite the fact, that only these three countries opened up their borders for the new EU labour migrants, some other countries felt the increase in the amount of immigrants as well. Germany saw an increase of more than 36,000 people, Spain – above 54,000 people. On the other hand, the amount of EU-27 immigrants in Italy decreased by 10% (Eurostat).



Graph 4. EU8 population in major EU15 receiving countries, 2005-2011 (thousands of

people)

Source: Intra-EU labour migration after Eastern enlargement and during the crisis. B. Galgoczi and J. Leschke(2012), page 7

Old member states of EU were enthusiastic about benefitting from increased labour force pools from new member states. This increase contributed to improving the quality of skilled labour force, matching international competition. Unfortunately, the crisis hit economies and some countries stayed overpopulated with immigrants while others struggled with bringing their labour force back. It was evident right away that the crisis had affected the migration process within EU as well as migrants themselves, even if the impact was not unanimous around the Europe (J. Koehler et al., 2010). A significant shock required appropriate response and immigration policies that were adopted after the crisis were focused on tightening control of labour force migration via changing the system of immigrants' admission, return migration and labour market policies. It was the time when countries faced more migration policy related disagreements than ever before. Despite the progress that EU made, the dream of common migration policies was becoming less and less viable. Based on A. Cangiano (2012) research, migration policies of EU up to now remain a question of national policy framework.

Post-crisis policy changes complicated immigration process in many EU countries. The first countries to take actions were those that imposed no restrictions on immigration after EU enlargement. Ireland was one of few countries that opened its borders in 2004. After a record high immigration rate prior the crisis, this country took actions in restructuring the immigration rules for the family members of a migrant, making it more difficult to get work permit (OECD). UK reacted even more harsh and set the goal that the number of immigrants in the future would remain within tens of thousands per year. The country also reformed its social benefits system making it more difficult for immigrants to get housing provided by a state. In general, most of the countries (including Italy, Slovenia, Hungary, Portugal, Croatia) implemented restrictive immigration policies by reducing the number of work permits issued. Other countries chose implementation of minimum salary requirements, restrictions on certain countries (e.g. Greece and Hungary put restrictions for immigrants from Romania and Bulgaria) or chose other tools. New rules led to higher emigration rates in some countries (UK and Ireland) where a greater part of the emigrants were the people who immigrated to those countries before the economic difficulties. Post-crisis migration policies were mainly adopted under a pressure and were not reflecting short and long term demographic and economic goals (J. Koehler et al., 2010).

Migration policies that do not fully reflect economic needs of a country may cause more harm than benefit. Germany is one of the countries that still struggles to attract a sufficient number of qualified immigrants. The German firms identify Germany's migration policies as one of the key restraints for intensifying the recruitment of the foreigners (A. F. Constant and U. Rinne, 2013). There are also other EU countries that struggle to achieve the desired results of the implemented migration policies. Even if the goal of UK's post-crisis immigration policy changes was to reduce the number of net migration to "thousands of immigrants", country never came even close to this number (see Graph 4). One of the main reasons was the failure of policy makers to thoroughly analyse the main push and pull factors influencing migration process. Instead of focusing on selective migration, policy makers put their attention towards creating unfriendly atmosphere for social welfare migrants. On the other side, countries trying to fight emigration problem (like Lithuania) were not successful in attracting their citizens back neither. There is a wide variety of factors determining person's willingness to migrate and all of those factors have to be taken into consideration by policy makers while shaping migration policies.

## 2. Migration theories and empirical evidence

Throughout the years, various theories have been developed as an attempt to explain the patterns of people movement. They all have one common assumption – migration is a voluntary act of people and the models do not attempt to explain forced migration (M.J. Greenwood, 2005). Despite this unanimous agreement, the scientists of different fields provide different explanations of the causes of migration. According to the social network theories, people move to already existing migration networks. Cultural theories focus on migration caused by the center-periphery patterns. Economic theories consider migration as a process of people's response to economic and labour market stimulus (M. Hooghe et al., 2008). The aim of this chapter is to analyse those key concepts of major migration theories and empirical studies in order to set a background for the further research and policy suggestions.

The various migration theories and findings have always played a significant role in policy decisions making (see Table 3). As it can be seen, the policy decisions in general reflected the direction of researches. With the increase in the number of researches emphasizing the benefits of migration, the policy makers were more willing to liberalize the migration process. As the amount of researches proving the harm of the migration was increasing, so did the amount of legislative restrictions.

# Table 3. The historical link between migration-related researches and policy responses

Time period	Researchers	Policy response
Before 1973	Optimistic about development and migration processes.	Policies were benefitting the migration due to widely spread idea that migration contributes to the development of the countries. Since 1960s there was a great increase of migration to Western Europe.
1973 - 1990	Pessimistic about development and migration processes.	Scepticism regarding migration grew. The fear of <i>brain drain</i> led countries to adopting various legislative restrictions for the migrants.
1990 - 2001	Greater amount of empirical studies leads to more subtle views.	The immigration policies were tightened even more.
2001 - 2004	A tremendous increase of migration related publications, mainly optimistic.	Positive empirical findings lead to liberalization of migration policies. The benefits of <i>brain gain</i> and remittances play important role.
After 2004	Numerous researches analysing the effects of EU enlargement policies.	Increased public dissatisfaction (in more developed countries) leads to adoption of more hostile policies for immigrants.
	Source: H. de Haas (	2008) page 2, M. Hooghe et al. (2008), adapted and modified

#### Source. 11. de mais (2008) page 2, M. mogne et al. (2008), adapted and modifi

#### 2.1. Neo-classical migration theory

Most of the migration theories developed prior to 1970s explained migration as a result of maximizing the utility gains. (M. J. Greenwood, 2005). Probably the most widely used is the neoclassical equilibrium perspective. Originally it was developed to determine the influence of development to the labour force migration.

The theory covers both - micro and macro levels. In the macro level the international migration is a function of geographic differences and labour market differentials. The source (of migrants) countries are typically those with excessive labour supply and therefore lower wages while

the adopting countries tend to have higher labour demand and are willing to provide higher wages. As a result the migration process is described as a tool to reach the equilibrium between countries having excess labour supply and scarce capital and countries lacking the labour supply but having a significant capital flow to offer (D. S. Massey et al., 1993). This movement of opposite directions leads to convergence meaning that in a long term the incentive to migrate disappears (H. de Haas, 2008). Since, according to this theory, the absence of wage differentials would mean no incentive to migrate – the best policy options targeting migration flows are related to intervening into the labour market in order to eliminate the disequilibrium between the source and receiving countries.

The macro level theory did not provide full satisfactory explanation of why people chose to leave one country and move to another one. Various scientists argue that there is much more than just wage differentials determining the decision to migrate. As a result, economists turned back to the micro level data. According to this adapted theory, a migrant is a rational thinking person who forms his/ her decision to migrate depending on the thorough cost-benefit analysis (H. de Haas, 2008). The wage differentials are no longer solely most important factor in making the decision to migrate. A migrant also tries to find a place where he/she could be most productive regarding the skills he/ she possess and also reach the highest net benefits. Micro level neo-classical migration theory takes into account such factors as costs related to migration process itself. Those costs include actual price of migration, learning the language, getting familiar with new culture, and other. Therefore, a person who is more educated, more skilled or knows the local language is more likely to migrate. D. Chiquiar and G. Hanson (2002) empirically proved that Mexican immigrants to US on average are more educated than people staying in Mexico.

The other important factor in making decision to migrate, according to this theory, is the employment level difference that helps to determine how likely an individual is to find the job in a new country. In other words, before making a decision to migrate, a person calculates expected net gain (discounted value of future earnings minus the migration costs) in other country with what he/ she would earn by staying home or moving to even another country (T. Mitze and J. Reinkowski, 2010). This rational decision making was explained by many scientists. One of the most well-known is Harris – Todaro model according to which the migration from rural to urban areas is based on net income rather than wage differentials (J. R. Harris and M. P. Todaro, 1970). This model can also be used to explain international migration and willingness to migrate can be expressed as (T. Mitze and J. Reinkowski, 2010):

$$Y_{ii}^E < Y_{ij}^E - C_{ij} \tag{1}$$

where:

 $Y_{ii}^E$  - expected income in a home country which is determined as a function of wage/ income rate in home country and a probability to be employed in home country.  $Y_{ii}^E$  - expected income in the host country

 $C_{ii}$  - migration costs

This formula shows that a person chooses to migrate if the value of income in home country is smaller than the difference of income in other country minus migration costs. Since the micro level neo-classical migration theory includes a wider variety of factors, the policy response aimed at targeting migration, according to this theory, must be broader than just influencing the labour market. In addition, it must also cover such areas as controlling expected (rather than observed) income, costs of migration or probability of getting work.

Even though the neo-classical migration model is widely used by various scientists as well as policy makers, the empirical studies do not provide full support to it, nor they give enough evidence to deny it. G. J Borjas (2000) provides evidence that the differences in migration costs significantly contribute in determining the willingness to migrate – those people whose costs of migration are lower are more likely to migrate. Even if the migration costs are equal, the shape of income distribution determines the migration. C. A. Pissarides and I. McMaster (1990) show similar findings. Authors present strong statistical proof that wage differentials have a significant impact in determining migration. But differently from G.J Borjas, they claim that the differences in the growth of wages influence migration, not the level of wages. In addition to wage differences, unemployment ratios have a great impact on the scope of migration too and, in the contrast to wage differences, it has permanent effects.

If we take into account static macro level neo-classical migration model, the wages should be the most important determinant in shaping the migration models. Nevertheless, most of the scientists avoid the limitations and turn their view towards much broader spectrum of migration determinants. In the contrast to previously described findings, C. Dustmann (2003) develops the idea that wage differences may even lead to misleading conclusions when trying to determine migration patterns. The author analyses the optimal duration of the migration period and finds out that people may come back to their home country earlier if the wages increase in the host country. This process can be explained by the wage and income effects. The wage effect supports the neo-classical model and suggests that when the wages in host country increase, immigrants prefer to stay there longer. But, on the other hand, the income effect describes marginal utility of wealth which has an opposite effect because of the decreasing gain in staying in the host country. Moreover, narrowing down the sample of migrants into the subgroups can provide interesting results. In his paper, M. Vujicic (2004) narrows down the population to health care sector and finds that there is a very little correlation between the size of the difference in source and receiving country and supply of the migrants. He even suggests that the professionals of health care take the decision to migrate based not on the wage differentials but rather on other non-wage related factors. People with certain personal characteristics (like those having families) are less likely to move even if the wage differences are high (P. Antolin and O. Bover, 1997).

The key concepts of neo-classical theory of migration are often contradicting with actual empirical findings. Nevertheless, this model still remains a starting point for most of the empirical studies analysing external as well as internal and regional migration (T. Mitze and J. Reinkowski, 2010).

#### 2.2. Gravity model for migration

As mentioned above, the geographic differences play an important role in the neo-classical migration theory. One of the most significant migration costs is the actual price of moving to other country. Therefore, according to this theory, people are less likely to migrate with an increase of the distance between the countries. Already in 1940s scientists noticed the pattern that distance has a significant impact in person's willingness to move. Princeton astronomer Stewart was observing his students (regarding the distance to their home) and described their behaviour in terms of gravitational or demographic force which depends on the population sizes and squared distances (M. J. Greenwood, 2005). Later on this model was adapted to depict migration patterns and expressed as:

 $M_{ij} = \frac{GP_i^{\beta 1}P_j^{\beta 2}}{D_{ij}^{\alpha}}$ 

30

(2)

where: M<sub>ij</sub>- migration from region *i* to *j* G - constant P<sub>i / j</sub> - population size of *i*and *j* respectively

 $D_{ij}$  - distance between *i*and *j* 

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According to this formula, person's willingness to migrate increases together with population size (in source, adapting or both countries) and decreases with an increase of distance between the regions. This gravity model of migration was rarely tested since it is pretty straightforward and does not require additional effort. Nevertheless, it is very broad and do not provide satisfactory background for migration related researches. In 1960s the original model was modified as many economists were including various behavioural factors into it. There were many attempts to define the best explanatory variables and common expression of those models can be defined as:

$$lnM_{ij} = ln\beta_{0} + \beta_{1}lnD_{ij} + \beta_{2}lnP_{i} + \beta_{3}lnP_{j} + \beta_{4}lnY_{i} + \beta_{5}lnY_{j} + \sum_{n=1}^{m}\beta_{in}lnX_{in} + \sum_{n=1}^{m}\beta_{jn}lnX_{jn} + e_{ij}$$
(3)

where:

 $M_{ij}$ - migration from region *i* to *j* 

 $D_{ij}$  - distance between *i* and *j* 

 $P_{i/j}$  - population size of *i* and *j* respectively

 $Y_{i/j}$ - income of *i/j* region

 $X_{i/\ j}$  - other commonly included factors (such as unemployment rate, taxes, environmental factors, development proxies and other)

Modified gravity models are still important in empirical studies since they manage to incorporate behavioural factors to the traditional model (M. J. Greenwood, 2005). Many authors chose gravity migration model as a base for their studies. R. Ramos and J. Surinach (2013) use this model to prove that the neighbouring countries are the main source countries of legal as well as illegal immigrants coming to EU, meaning that the small geographic difference has a significant impact on decision to migrate. D. Karemeraet al. (2010) use gravity model to test the neo-classical model of migration and reach the conclusion that the size of population (of source country) and income of receiving country are the key migration drivers.

#### 2.3. Push-pull factors theory

Even though gravity and other neo-classical migration models help to narrow down the number of migration drivers, they do not answer the question why certain people in the same country chose to migrate and others do not. In 1966 E. S. Lee introduced a new approach in creating a migration process framework. According to the author, migration process always involves origin, destination and intervening obstacles, where distance is a constant intervening factor (E.S. Lee, 1966). E. S. Lee divides factors into "plus", "minus" and "0", where "plus" is a factor stimulating migration process, "minus" – a factor discouraging migration and "0" – a factor to which a migrant is indifferent. All of them can be put into 4 distinct categories:

- 1. Factors related to the area of destination.
- 2. Factors related to the area of origin.
- 3. Interfering obstacles.
- 4. Personal characteristics.

It may seem that the factors related to the area of origin and destination should be opposite signs, but E. S. Lee points out that a migrant has lots of information and experience to evaluate the factors related to area of origin but, on the other hand, while evaluating the factors of area of destination a person always encounters some sort of uncertainty and lack of information which makes the decision to migrate more complicated. In addition to that, the choice to migrate is not a fully rational decision, as personal differences (like level of openness to change) can never be put into a model.

Even though E. S. Lee did not give a precise name to his theory, but generally it is known as a "push-pull" factors theory. "Push-pull" factors theory is similar to the neo-classical migration theory since it connects equilibrium model with the individual choice model (H. de Haas, 2008). This theory gained a tremendous popularity among the scientists and policy makers throughout the years. One of the main reasons why this model is so popular is that it allows researchers to combine not only economic, but also personal, political, demographic, ecologic and all other factors when looking for key migration drivers. There is a wide variety of push-pull migration factors. Some of them gained greater popularity among researchers and were divided into certain categories:

	Push	Pull
Economic (and demographic) Political	<ul> <li>High unemployment rate</li> <li>Low wages</li> <li>High poverty gap/ lack of jobs</li> <li>Unsatisfactory education and health care quality</li> <li>Political conflicts</li> </ul>	<ul> <li>Ability to develop as a person or professional</li> <li>Higher wages</li> <li>Higher standard of living</li> <li>Stable political system which brings</li> </ul>
	<ul> <li>Corruption and poor level of governance</li> </ul>	<ul><li>safety and security</li><li>Political freedom</li></ul>
Cultural, social	<ul><li>Discrimination</li><li>Abuse of human rights</li></ul>	<ul> <li>Colonial relationship</li> <li>Family reunification</li> <li>Active community of migrant's ethnicity</li> </ul>

Table 4. A summary of the main push-pull migration factors

Source: F. Prausello (2011), adapted and modified

Table 4 presents key push-pull factors of migration but there can be found many other factors in various articles (like legal, historical, educational, environmental and other). J. C. Jenkins (1977) found out that Mexican migration to US is driven not only by wage and standard of living differences but also by the fact that in Mexico there has been an increasing mismatch between rural population growth and the amount of arable land. There can be seen a pattern that on average pull migration is economically beneficial while push migration is a result of some kind of disturbances and can cause even more economic problems.

Even though push-pull factor model is one of the most widely used, it has also been criticized by some economists. It has been argued that push and pull factors are just a different side of the same coin, meaning that they are of descriptive rather than analytical value and this concept should not even be called a model (H. de Haas, 2008). In addition to that, in this concept migration drivers have same weights, therefore it is not clear which ones are of a greater importance.

To conclude, migration is mostly a voluntary human act based on utility maximization. It has been proved by many researchers that neo-classical migration theory does work in the real life and migration is often driven by labour market differences. In addition to that, gravity model also emphasizes the importance of distance and population size when analysing migration process. Depending on the perspective, all the factors having influence on willingness to migrate can be grouped into push and pull factors depending on the country where the changes have been introduced. In the next chapter I use the models introduced in this chapter as a base for econometric calculations in order to identify key push-pull intra-EU migration drivers.

### 3. Empirical study

In this chapter I carry out an econometric research in order to determine the importance of various economic and policy factors in person's decision to migrate. First, I try to identify the most significant economic push-pull factors affecting personal migration choice. Second, I raise hypothesis, that pull factors (the changes in a host country) has significantly more influence in determining the number of immigrants coming to a specific country than push factors. Last, I test the hypothesis that the two biggest shocks in the period of 2000-2011 (EU enlargement and global financial crisis) notably affected the migration process from new to old EU member states.

#### 3.1. How important is labour migration?

The choice to migrate is a hard and complex decision that a person has to make. Therefore, sometimes it is difficult to determine which factors are the key drivers in a personal migration choice. Nevertheless, some factors on average have more influence than the others. Table 5 presents the results of a Labour Force Survey ad hoc module on the labour market situation of migrants and their immediate descendants. It combines the results of the surveys conducted in 15 EU member states. The respondents are the people who immigrated to the particular country at the age 15 and above. Survey was conducted in 2008. Results, that are presented in the Table 5, show that in 2008 more than one third of the working age (15-64 years old) migrants in 15 EU member states indicated "Family reasons" as a key motive of migration. On average 37% of the respondents stated this reason as migration trigger. There can be seen a trend that richer countries attract more migrants who enter a country with a family reunification purpose (in Netherlands, France, Sweden, Belgium

and Germany the value of this measure was even above 40%). In addition to that, women are more likely to migrate as a result of family formation, reunification or accompanying their spouses. Out of all the migrant working age women 49% reported family reasons as a driver to migrate (for males this value was only 23%).

	Work*	Work**	Family reasons	Education reasons	International protection
Belgium	12	12	46	8	9
Germany	13	8	44	6	14
Ireland	17	33	24	8	2
Greece	5	57	21	2	7
Spain	11	46	30	3	0
France	7	19	47	14	4
Italy	14	46	34	3	0
Cyprus	31	22	27	6	5
Lithuania	21	N/A	33	N/A	N/A
Luxembourg	35	9	38	1	4
Netherlands	8	8	49	8	13
Austria	9	24	39	9	12
Portugal	8	33	39	4	N/A
Sweden	9	5	46	4	25
UK	15	17	31	19	6
AVERAGE	14	24	37	7	8

Table 5. Reasons for migration (% of total migrants)

Source: Eurostat

\* A job found before migrating

\*\* No particular job found before migrating

Even though a high number of migrants indicated the importance of family-related reasons in making the decision to migrate, work related reasons play an even more significant role in the migration process. Quite often labour migration can trigger a need for family reunification (for example, if one of the spouses finds a well-paid job in other country, his/her family may decide to migrate as well in order to reunify the family). In addition to that, the survey results suggest that work related reasons were more significant for greater amount of respondents. On an average 14% of migrants reported that they moved because they already found a job in another EU country while 24% of respondents moved with a hope to find a working place after changing their location. In total, it is approximately 38% of migrants who changed their living country as a result of work related reasons. Migrants in Luxemburg, Cyprus and Lithuania were more likely to move if they already had a job prior to migration process, while Greece, Spain, Ireland, and Portugal attracted on average more risk-takers who migrated without a prior job placement. Opposite to family related reasons, more working age men reported work as a cause for migration. The other two significant drivers for migration in 2008 were education related reasons and international protection (on average 7% and 8% respectively).

EU survey provides a good overview of why people choose to migrate but does not give an information whether the decisions made by the respondents are rational. Further research is carried out in order to determine whether the migration patterns respond to the changes of a country's characteristics (change of population size, development, income and other).

#### 3.2. Methodology and data commentary

In this chapter I use random-effects generalized least squares linear regressions model for the panel data with 4211 observations. Due to the nature of Gravity model, the fixed effects model cannot be used since it would omit the *distance* variable as it is not changing over the time. The sample of the panel data used in this empirical study consists of 607 country pairs (EU member states). The availability of data dictates the time constraint and the analysis is carried out for the period of time between 2000-2011, using annual observations. Cyprus is excluded from the analysis due to the data limitations. The variables used in regressions are expressed in logarithms, except form the dummy variables.

There are possible issues with the data that may bias the results of the empirical study. The risk of endogeneity is one of the key problems. First of all, the decision to migrate includes a variety of factors that cannot be observed or expressed quantitatively, therefore the omitted variable bias may occur. Such factors as job related skills, personal work-leisure preferences or openness to move cannot be measured quantitatively and put into the model, even though they have a high influence on a person's willingness to migrate. Secondly, there is a risk of a reverse causality. The population has the highest risk for reverse causality in this empirical study. Nevertheless, it cannot be excluded from the calculations since it is one of the key factors of a gravity model. Regressions with population lags provided close to identical results. Lastly, there is a risk of a high level of correlation between the independent variables. Few important independent variables (GDP per capita, social benefits) were excluded from the model due to collinearity (see Table 2 in Appendix). In this research I use GLS model since various literature suggests that it has lower chance of providing misleading results or being statistically inefficient. Nevertheless, the results of an OLS model provided similar results.

The independent variable of this research is immigration. It is a yearly data of migration flow. The value of this variable is expressed as a number of certain nationality people who legally immigrated to a certain host country at predefined year. For example, immigration for Lithuania-UK country pair in 2004 was equal to 10,800 which means that this amount of Lithuanians immigrated to UK in 2004. Unfortunately, there is a notable amount of missing data which reduced the original sample by almost half. Moreover, Eurostat provides the number of immigrants disregarding the nature of migration. As it was showed in the subchapter 3.1., the work related migration is a key cause for people movement within EU, therefore in this analysis I use the total number of EU migrants as a proxy for labour force migration. The data is taken from the Eurostat database. In this research I use various independent variables:

- <u>Distance</u>. This variable shows the distance (expressed in kilometres) between the capitals of a country pair. The data is taken from CEPII GeoDist.
- <u>Population</u>. It is a size of population of a country in particular year. Data provided by Eurostat.
- <u>Average wage</u> is measured in cash and kind (except from Estonia that measures wages in cash only), before social security and other tax deductions. Data is provided for a full-time equivalent employee which enables to disregard the differences in average working time among the countries. The value is expressed in US dollars. The average wage data was collected from UNECE Statistical Database.
- <u>Unemployment</u> shows what is the percentage of unemployed people in the total amount of labour force (Eurostat).
- <u>Unemployment benefits</u> variable shows the size of government expenditure for unemployment benefits (as a percentage of GDP). Data was taken from Eurostat.
- <u>Language</u> dummy indicates the level of foreign language (English) knowledge in the country. The dummy is calculated by observing what was the percentage of pupils studying English at ISCED level 1 (as percentage of total amount of pupils at this level). Dummy equals 1 if the average percentage amount of pupils learning language in the period of 2005-2011 was above 60 percent, and 0 if this amount was below 60 percent.
- Old/ new dummy indicates whether the country joined EU before or after 2004. The dummy equals 1 if the member state joined EU before 2004 (Belgium, Denmark, Germany, Ireland, Greece, Spain, France, Italy, Luxembourg, Netherlands, Austria, Portugal and Finland) and equals 0 if the country joined the EU after 2004 (Bulgaria, Czech Republic, Estonia, Croatia, Latvia, Lithuania. Hungary, Malta, Poland, Romania, Slovenia and Slovakia).

In this analysis the factors that are considered as push factors are – decrease in average wage, unemployment benefits and population, and an increase in unemployment rate in a source country. Variables considered as pull factors - increase in the average wage, unemployment benefits and population, and a decrease in unemployment rate in a host country. Table 6 provides the correlations between the dependent variable (immigration) and the independent variables.

	Correlation with immigration*			
Independent variable	Source country (push factor)	Host country (pull factor)		
Average wage	-0,0284	0,4703		
Unemployment	0,0955	-0,1308		
Population	0,3737	0,4639		
Unemployment benefits	0,0255	0,3853		
Distance	-0,3033			

Table 6. Correlations between dependent and independent variables

\* variables expressed in logarithms

It can be seen that the correlation coefficients of immigration and independent variables are significantly higher for a host country. This suggests that migration patterns more closely reflect the economic and policy changes made in a host country rather than changes that happened in a source country. In other words, we can presume that the immigration policies have more influence on person's decision to migrate than emigration policies. In addition to that, the correlation between immigration and unemployment benefits of the source country has the opposite sign than expected. One of the possible explanations is that countries that spend more (as a percentage of GDP) money for various social benefits are those that face more economic challenges and in general tend to attract less migrants. Nevertheless, the coefficient is very small and the relationship of this factor and immigration is less of importance (compared to host country).

#### 3.3. Empirical findings

In this sub-chapter I firstly run a regression to test the original Stewart's Gravity model. Secondly, I use the modified gravity model with various economic independent variables to determine the importance of economic factors, suggested by neo-classical migration theory and different researchers. Thirdly, I divide my sample into four groups of country pairs depending on the EU joining day and analyse whether there is a significant difference in the migration flows between those groups. Lastly, I analyse whether the importance of average wage had changed (in the migration process from new to old EU countries) prior and after the EU Enlargement and prior and after the global financial crisis.

#### 3.3.1. Original gravity model

According to the original (Stewart's) Gravity model for migration, the number of migrants moving from one region to another negatively depends on the distance and positively on the size of population of both – host and source countries. Various researchers proved the existence of this relationship in the migration to the Europe process (R. Ramos and J. Surinach (2013), M. Hooghe et al. (2008)). Table 7 presents two regressions illustrating the classical Gravity model for intra-EU migration. The number of observations decreased to 3194 as a result of introducing population lag.

Both models are fixed for the year variable in order to exclude the influence of the years when immigration rates substantially changed in the same direction for all the analysed countries. The first regression is an exact fit for the model and shows that the number of immigrants in the country decreases with an increase of the distance between the country pairs. In addition to that, a 1% increase in a source country's population on average increases the number of immigrants in host country by 0.7% (ceteris paribus). Similarly, the 1% increase in the population of a host country increases the attractiveness of a country and the number of immigrants raises on average by 0.9% (ceteris paribus).

Independent variables	(1)	(2)
ln_distance	-1.085***	-1.084***
	[0.090]	[0.090]
ln_population (source)	0.732***	
	[0.051]	
In_population (host)	0.910***	
	[0.063]	
ln_population (source), t-1		0.735***
		[0.051]
ln_population (host), t-1		0.901***
		[0.063]
Year	Yes	Yes
Constant	-13.738***	-13.650***
	[1.421]	[1.422]
Observations	3,194	3,194
Number of country pairs	536	536
R-squared		
within	0.0956	0.0947
between	0.489	0.4871
overall	0.5394	0.4371

Table 7. Estimation results: Stewart's model

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \*p<0.1

Due to the free labour force movement within EU it is difficult to trace the migration flows. People can live in a country for few years before they register as migrants, nevertheless, the source country's population decreases the same year they leave. To test whether this situation has an influence on the results, I introduce one year population lag in regression 2. The results are not significantly different from the ones in first regression and further lags provided no major change neither. Therefore, it can be said that intra-EU migration in 2000-2011 followed patterns of the classical gravity (Stewart's) model for migration.

#### 3.3.2. Modified gravity models: the influence of economic factors.

Modified gravity models are widely used among researchers as they enable to include variety of behavioural factors into analysis. The macro level neo-classical migration theory puts it's attention on importance of labour market differences in determining person's willingness to migrate. Since migration decision is understood as an attempt to maximize utility gains, it is thought that wage differentials and differences in unemployment rate are the most significant push-pull factors in migration process. Formula (4) shows the general expression of modified gravity model that I use as a base for the regressions. It shows that the migration elasticity is a function of a distance, populations, average wages, unemployment rates, unemployment benefits, English language knowledge in source and host countries.

$$\begin{split} \ln M_{sh} &= \ln \beta_0 + \beta_1 \ln D_{sh} + \beta_2 \ln P_{st} + \beta_3 \ln P_{ht} + \beta_4 \ln Y_{st} + \beta_5 \ln Y_{ht} + \beta_6 \ln U n_{st} + \beta_7 \ln U n_{ht} \\ &+ (\beta_8 \ln benefit_{st} + \beta_9 \ln benefit_{ht} + \beta_{10} language_s + \beta_{11} language_h) + \alpha_{1t} \\ &+ \alpha_{2s} + \alpha_{3h} + u_{sh} + e_{sh} \end{split}$$

where:

(4)

 $M_{sh}$ - immigration from source to host country  $D_{sh}$  - distance between source and host country  $P_{s/h}$  - population size of source and host country respectively  $Y_{s/h}$ -average wage of source and host country  $Un_{s/h}$  - unemployment rate of source and host country *benefit*- unemployment benefit (as a percentage of GDP) in source and host country *language*- language dummy  $\alpha_{1t}$  - year fixed effect  $\alpha_{s/h}$ - source/ host country fixed effect

Firstly, I test the importance of the average wage and unemployment rate in the migration process, therefore I run regressions excluding variables put in the bracket in formula (4) (unemployment benefits and language dummy). Equations 3 and 4 in Table 8 present the results of the GLS model. Equation 3 is fixed for the year variable. In the period of 2000-2011 some of the analysed countries systematically attracted more immigrants due to their size, therefore, regression 4 includes dummies for the host and source countries as well. The independent variables of a classical gravity model (distance and population sizes of host and source countries) are statistically significant and the coefficients have the expected directions in both equations. The wage and unemployment independent variables are highly significant for a host country – an increase in average wage in a host country on average results in an increase in the number of the immigrants coming to that country. As expected, increase in particular country's unemployment rate decreases the attractiveness of the country for labour force migration and the number of immigrants on average decreases.

Independent variables	(3)	(4)
ln_distance	-1.123***	-1.373***
	[0.078]	[0.082]
In_population (source)	0.762***	-2.718***
	[0.039]	[0.793]
In_population (host)	0.711***	3.220***
	[0.045]	[0.985]
ln_averagewage (source)	-0.134	0.365**
	[0.084]	[0.181]
ln_averagewage (host)	1.440***	0.819***
	[0.086]	[0.260]
ln_unemployment (source)	-0.085	0.031
	[0.073]	[0.073]
ln_unemployment (host)	-0.306***	-0.399***
	[0.073]	[0.072]
Year	Yes	Yes
Country (source)		Yes
Country (host)		Yes
Constant	-19.691***	-1.996
	[1.225]	[20.427]
Observations	4211	4211
Number of country pairs	607	607
R-squared		
within	0.1339	0.1672
between	0.6939	0.8624
overall	0.6993	0.8263

Table 8. Estimation results: neo-classical (macro level) migration theory

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \*p<0.1

The change in average wage and unemployment rate in a source country on average has less or no significant influence in the intra-EU migration process. The only statistically significant coefficient (for economic source country's variables) is the wage in equation 4. Nevertheless, it has opposite direction than expected. I would expect it to be negative since people are less likely to leave the country when their wage increases. The direction of this slope coefficient might be biased or follow the different kind of trend than expected. In the case of a high wage differentials between source and host countries a small increase in the wages in a source country is unlikely to significantly affect the person's migration choice. Another possible explanation is that with an increased migration the population size is decreasing and since nominal wages are rigid, the average wage of a country increases. Moreover, due to lack of information, people are more likely to observe the common trend of a host country and are more sensitive to what average wage in there is. When it comes to the source country's wages, a person judges his own income and an increase of the average wage of a country does not necessarily reduce his/ her willingness to migrate if his own (her own) wage did not increase. Same tendencies work in judging the level of unemployment. People tend to be biased when judging the information that they have about their own situation in the source country and trust more general information about the host country.

In addition to average wage and unemployment rate, there are variety of other factors that have a significant influence on a personal migration choice. To analyse the influence of those factors, I estimated the model using major economic push-pull factors (wage, unemployment rate, unsatisfactory education and social care level) that is expressed in formula (4). Table 9 includes social care and education level in the regression as unemployment benefits (as a percentage of GDP) and language dummy. The coefficients for unemployment benefits in a source country are not statistically significant. For the host country they are negative. Negative relationship between increase in unemployment benefits and immigration can be explained by the fact that countries spending most of their budget for various social benefits (as a percentage of GDP) are on average those that face more economic difficulties and are less attractive for the immigrants. The other possible explanation for the more developed countries is that those countries that pay higher unemployment and other social benefits on average have more restricted immigration policies or imply higher control on minimum wage workers (like earlier in the research discusses case of Denmark), therefore even if they increase the size of benefits, there is no observed corresponding increase in immigration rate.

Independent variables	(5)	(6)
ln_distance	-1.104***	-1.373***
	[0.083]	[0.082]
In_population (source)	0.761***	-2.775***
	[0.039]	[0.772]
ln_population (host)	0.722***	3.096***
	[0.045]	[0.931]
ln_averagewage (source)	-0.158	0.327*
	[0.102]	[0.183]
ln_averagewage (host)	1.580***	1.070***
	[0.096]	[0.270]
ln_unemployment (source)	-0.107	-0.006
	[0.083]	[0.083]
ln_unemployment (host)	-0.212**	-0.279***
	[0.089]	[0.081]
In_unemploymentbenefit as % of GDP (source)	0.027	0.067
	[0.069]	[0.068]
In_unemploymentbenefit as % of GDP (host)	-0.178**	-0.254***
	[0.069]	[0.069]
language (English language speakers above 60%) dummy (source)	0.195*	4.697***
	[0.116]	[1.151]
language (English language speakers above 60%) dummy (host)	-0.309***	-1.806
	[0.112]	[1.392]
Year	Yes	Yes
Country (source)		Yes
Country (host)		Yes
Constant	-20.869***	-3.676
	[1.503]	[17.914]
Observations	4211	4211
Number of country pairs	607	607
R-squared		
within	0.1399	0.1735
between	0.6928	0.8624
overall	0.6937	0.8269

# Table 9. Estimation results: the influence of economic factors on migration decision

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \*p<0.1

The proxy for education level in this model is a language dummy. In the survey carried out by Eurobarometer (2011), respondents identified language barrier as one of the two main reasons discouraging people from working in another EU member state. The research of A.F. Constant (2013) is in line with the survey and proves that language barrier is one of the key obstacles for reaching a higher level of skilled labour immigration in Germany. The results of my empirical study confirms those findings – the language dummy in Table 9 is positive for a source country (in fixed year model and fixed year and countries model) which suggests that people living in the country with a higher foreign language teaching level are more likely to migrate to the other EU member state.

The GLS models used in this subchapter proved the importance of average wage and unemployment level as significant migration pull factors. The increase in wage in a host country significantly contributes to an increase in the number of the immigrants coming to that country. The opposite relationship was observed in the relationship between unemployment and immigration. Unemployment benefits, on the contrary, did not seem to have a strong causal relationship with the immigration. Education level was proved to be a push factor – countries having lower level of pupils studying English language on average tend to source less immigrants.

#### 3.3.3. Regional differences in intra-EU migration

One of the key goals of EU is free labour mobility between the member states and harmonization of migration laws. Previous sub-chapter introduced models for a general intra-EU migration. Nevertheless, EU is a highly diversified region with 27 countries that all differ in their development level, economic stance and policies. EU can be divided into "old" and "new" countries depending on the day they joined the Union (2004 is a benchmark year). Migration between those regions reflect the differences in economic situation and labour market needs, therefore may differ in the nature. The increased need for a geographic mobility comes from the wish to reduce the labour market imbalances in the Union (H. Bonin et al., 2008). Geographic mobility also equilibrates regional labour market imbalances. Therefore, the goal of this sub-chapter is to show that there is significant differences in the regional intra-EU migration.

The results of GLS model for country pairs divided into regions are presented in the Table 10. The "old" refers to the countries that became EU members before 2004 and "new" to the countries that joined EU during or post 2004 EU enlargement. The first indicator of a country pair shows the nationality of a migrant (source country), the second one – the destination/ host country. Therefore, the regression 9 (new-old) provides the results for the migration process from the new EU countries to the old ones.

The distance and population variables are statistically significant for the all country groups. Average wage of the source country, on the other hand, follows the expected patterns only in the migration where the source country is a new EU member state. An increase in the average wage in a new state on average results in a decreased number of immigrants in the particular host country. Increasing the average wage in the host country is a significantly reliable method in the migration between new EU countries. For the other regional migration coefficients of average wage in a host country are statistically insignificant. Unemployment rate of a source country is insignificant for all the country groups. The host country's unemployment rate is strongly significant and consistent throughout the regions. The increase in unemployment rate in the host country on average decreases the number of immigrants coming to that country in the cases of all the country pairs.

Independent variables	(7)	(8)	(9)	(10)	
	Old-old	Old-new	New-old	New-new	
ln_distance	-1.233***	-0.963***	-0.817***	-1.732***	
	[0.173]	[0.103]	[0.161]	[0.151]	
In_population (source)	0.819***	0.776***	0.910***	0.607***	
	[0.073]	[0.063]	[0.089]	[0.124]	
In_population (host)	0.768***	0.142**	0.907***	0.0814	
	[0.078]	[0.069]	[0.111]	[0.138]	
ln_averagewage (source)	-0.442	0.444*	-0.561**	-0.704***	
	[0.294]	[0.265]	[0.238]	[0.27]	
ln_averagewage (host)	0.753	0.33	0.892	0.774**	
	[0.481]	[0.213]	[0.901]	[0.316]	
ln_unemployment (source)	0.0393	0.0599	0.0343	0.237	
	[0.082]	[0.173]	[0.119]	[0.218]	
ln_unemployment (host)	-0.320***	-0.501***	-0.351**	-0.691***	
	[0.079]	[0.161]	[0.151]	[0.201]	
Year	Yes	Yes	Yes	Yes	
Constant	-13.06**	-10.33***	-20.97**	3.457	
	[6.552]	[3.1]	[8.884]	[4.774]	
Observations	1654	935	1024	598	
Number of country pairs	194	147	151	115	
R-squared					
within	0.0948	0.1698	0.3615	0.2205	
between	0.6577	0.5358	0.7065	0.6662	
overall	0.6642	0.5194	0.6937	0.6487	

# Table 10. Estimation results: regional differences in intra-EU migration

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \*p<0.1

The most analysed intra-EU migration related policy question in the recent decade was what are the drivers and consequences of the migration from the new EU countries to the old ones. Equation 9 in Table 9 shows the results of GLS model for a country pair where the source country is a new EU member state and the host country is the old one. This model provides the best fit (the highest R-squared value) from all four types of regional migration. Except from the high importance of the distance and population sizes, the average wage of a source country is a strongly significant push factor and unemployment rate of a host country is a strongly statistically significant pull factor in the migration between "new-old" country pair migration.

#### 3.3.4. The influence of EU enlargement policies and global financial crisis

The opening up the borders for new Eastern European countries in 2004 resulted in many concerns especially among old member states that feared that a great amount of lower skilled labour force and people benefitting from social welfare will flood the countries. It was a great shock in the migration process, since one of the major barrier for the mobility was removed. The other shock came with the global financial crisis in 2008. Policy makers in many EU countries adopted various national laws that were migration-unfriendly. In this subchapter I analyse the influence of these two shocks on the migration patterns from new to old EU countries. In particular, I focus on whether migration process became more or less wage sensitive after the EU enlargement in 2004 and after the hit of the global financial crisis in 2008.

The model that I use is presented by formula (5). It is based on previously used modified migration model. The key difference is that I introduce the interaction dummy which indicates the

year of the shock. The coefficients  $\gamma_6$  and  $\gamma_7$  indicate the increase in the migration elasticity after the shock.

 $\ln M_{sh} = \ln \gamma_0 + \gamma_1 \ln D_{sh} + \gamma_2 \ln P_{st} + \gamma_3 \ln P_{ht} + \gamma_4 \ln Y_{st} + \gamma_5 \ln Y_{ht} + \gamma_6 Y_{st} * post\_shock + \gamma_7 Y_{ht} * post\_shock +$ 

+ 
$$\gamma_8$$
 interaction +  $\gamma_9$  ln  $Un_{st}$  +  $\gamma_{10}$  ln  $Un_{ht}$  +  $\alpha_{1t}$  +  $\alpha_{2s}$  +  $\alpha_{3h}$  +  $u_{sh}$  +  $e_{sh}$ 

(5)

where:

M<sub>sh</sub>- immigration from source to host country

 $D_{sh}$  - distance between source and host country

 $P_{s/h}$  - population size of source and host country respectively

Y<sub>s/h</sub>-average wage of source and host country

 $Un_{s/h}$  – unemployment rate of source and host country

*post\_shock*-- interaction dummy of a shock year (EU enlargement or global financial crisis) following all the average wage observations after the shock year (not just the shock year itself)

 $\alpha_{1t}$  – year fixed effect

Table 11 presents the results of an econometric model based on formula (5). Interaction term is excluded due to collinearity (since I use year fixed effect). Regression 11 in the table proves the importance of the wage differentials in the migration process from the new to old EU member states. In this equation I use EU enlargement interaction dummy. There is no significant change in the distance, population and unemployment independent variables from previous regressions. Analysis with interaction term allows to check the change of wage sensitivity in migration process. *Ln\_average wage* variable represents the period prior the enlargement, *post shock wage* represents the increase in the migration sensitivity to wage changes after the EU enlargement. In other words, if before the shock 1% increase in a source country's average wage caused  $\gamma_4$ % decrease in the number of out-migration, after the shock the 1% increase in the wage contributed to  $(\gamma_4 + \gamma_6)$ % decrease in out-migration.

	(11) The effect of EU enlargement	(12) The effect of the crisis
	Year>2003	Year>2008
ln_distance	-0.841***	-0.873***
	[0.158]	[0.160]
ln_population (source)	0.883***	0.894***
	[0.086]	[0.088]
ln_population (host)	0.936***	0.929***
	[0.105]	[0.107]
ln_averagewage (source)	-0.521**	-0.606***
	[0.214]	[0.220]
ln_averagewage (host)	-0.027	0.943
	[0.944]	[0.860]
post shock wage (source)	-0.325***	-0.699***
	[0.121]	[0.158]
post shock wage (host)	1.182***	0.3
	[0.344]	[0.297]
In_unemployment (source)	0.085	0.001
	[0.113]	[0.118]
ln_unemployment (host)	-0.506***	-0.370**
	[0.149]	[0.148]
Year	Yes	Yes
Constant	-13.885	-20.726**
	[9.036]	[8.527]
Observations	1024	1024
Number of country pairs	151	151
R-squared		
within	0.3903	0.3848
between	0.7239	0.7205
overall	0.7051	0.7045

Table 11. Estimation results: the influence of EU enlargement and the crisis

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \*p<0.1

It can be seen that the coefficient for average wage of a source country was highly significant and negative prior and after the enlargement. Before the enlargement 1% increase in average wage in the source country contributed to approximately 0.5% decrease in migration. The post shock wage coefficient suggests that after the enlargement the corresponding 1% increase in the source country's average wage resulted in a higher (0.84%) decrease in migration. The coefficient for the wage in a host country, became highly significant after the enlargement. If prior 2004 the changes in host country's average wage did not significantly affect the number of immigrants coming to the country, after the enlargement a 1 % increase on average wage in a host country contributed to on average 1.2% increase in the number of immigrants coming to that particular country.

The other significant shock was the hit of global financial crisis starting 2008. As discussed previously, the crisis resulted in a significant decrease in the migration volume within EU. The country pairs that were affected the most were those where the source country was a new EU member state and a host country – old member state. Equation 12 in Table 11 shows a significant change in the wage sensitivity prior and post the crisis. The coefficients for the average wage in a source country are negative and statistically significant for both periods. The crisis increased the sensitivity of migration process to the changes in the average wage in a source country. The host country's changes in average wage remained statistically insignificant both periods of time.

In this chapter I ran various regressions that proved the significance of average wage and unemployment rate as important push-pull factors in migration process. Moreover, if we consider general intra-EU migration, the changes in host country's wages play much more important role in determining the change in a number of immigrants coming to the country. When we consider the movement of people from new EU member states to the old ones, the significance of increase in source country's wage outpaces the influence of the changes in a host country. Therefore, my hypothesis that pull factors have more influence in migration decision making process is confirmed for a general intra-EU migration and rejected for the regional migration from new to old EU member states migration. In addition to that, I accepted the second hypothesis and proved that two biggest shocks in the period of 2000-2011 notably affected the migration process from new to old EU member states. I found that migration process became more wage sensitive as a results of EU enlargement and global financial crisis.

## Conclusions

In this thesis I showed that there has been a lack of consistency between changes in migration policies within EU member states and actual migration drivers. At the beginning of the last decade EU countries were optimistic about the benefits brought from the increased intra-EU migration. As the adopted policies were increasingly liberalizing the labour force movement, some of the old EU member states became overpopulated by the immigrants and became sceptic about further enlargement. In addition to that, the hit of global financial crisis contributed to an increase in the existing tension inside and between the countries. As a result, despite the numerous attempts, EU migration policies still remain a question of a national policy framework. Many local legislative acts related to immigration policies were targeted to the consequences of the immigration and were adopted without proper pre-evaluation and as a result did not achieve expected results (e.g. right after the crisis in 2008 the goal of UK was to reduce the number of net migration to "thousands of migrants" but country never came even close to this number). Some of the policies were a prompt response to the global financial crisis and did not reflect the medium and long term economic and demographic targets. State has an important role in shaping the migration patterns therefore a lack of understanding of particular push-pull factors influencing migration process results in a failure of the policies. Therefore, the goal of this research was to determine the key push-pull migration factors in the intra-EU migration in the period of 2000-2011.

The study includes data and literature review and gravity model based econometric models for the panel data of 4211 observations for EU country pairs in the period of 2000-2011. The results of the study suggest that labour market characteristics (average wage and unemployment rate) are statistically significant economic drivers in the intra-EU migration process. I also found that the features of a host country (pull factors) have significantly higher influence in determining intra-EU migration patterns. The other important factor in the decision to migrate is the knowledge of a language (which was used as a proxy for education level). My findings are in line with the results of Eurobarometer (2011) survey and confirms that citizens from a country with the higher level of pupils studying English language on average are more mobile.

The other pattern observed in the research is that there are significant differences as well as similarities in the importance of migration drivers among different EU regions. I have divided the intra-EU migration into four subsamples: migration from a new EU member state (joined after 2003) to another new EU member state, from new to old, from old to new and from old to old. What I have found is that the decrease in unemployment rate in the host country is a statistically significant pull factor for all regions. When it comes to the average wage, dividing the sample into four groups resulted in different results. Regional regressions showed that if the person is migrating from a new EU member state, the increase in average wage in his/ her own country decreases person's willingness to migrate and the number of immigrants accordingly decreases in a host country. Finally, the results of the empirical study proved that EU enlargement and global financial crisis increased the wage sensitivity in the migration process from new to old EU member states.

The findings of my study confirm the results of most of the researchers focusing on the influence of migration drivers. The income differentials (expressed as average wage in this study) is a major pull factor in the migration process. In addition to that, intra-EU labour force migration follows the patterns of a classical gravity model. Nevertheless, differently from my research, majority of the researchers focus on international rather than intra-EU migration. Moreover, I introduce the regional differences that suggest that policy decisions have to be adapted for the regions separately since the nature of labour force migration differs among those regions. This statement contradicts with the goal of EU that aims to unify the migration policies for all the member states. There is a

lack of similar researches focusing on intra-EU migration and in particular showing the existence of regional differences in determining the key migration drivers.

As it was stated in the thesis, the increasing unemployment level and ageing society creates the situation where in a long term EU member states will have to compete with other countries for attracting the skilled immigrants (R. Munz, 2008). Therefore, the migration policies have to be proactive and predict the future labour market needs. It was proved in my study that economic factors have a significant impact on personal migration choice. Migration policies targeted on those factors have a higher chance of benefitting from the migration process. With the properly managed migration a country can reduce the shortages in the labour supply, stimulate its economic growth and development.

### **Policy recommendations**

Based on the findings of my thesis, I propose **policy recommendations** that could increase the effectiveness of the migration policies in the EU:

1. EU countries should <u>focus more on the selective immigration</u>. The enthusiasm of opening the borders decreased significantly in few years after EU enlargement and once the lower skilled job shortages had been alleviated, old EU member states started to increase restrictions on labour force migration. As European countries are ageing there is an increasing need for skilled labour force therefore the tight restrictions may cause serious economic and social issues in the future. The <u>creation of well-planned training programs</u> in the countries where the need for certain type of skills exists would bring economic benefits and eliminate (or at least reduce) the labour market imbalances in the long run. Y. Pascouau (2013) also suggests that creation of clear system of skills and qualifications recognition among the countries would benefit in creating selective migration.

2. The goal of EU is a creation of single European market. Nevertheless, the results of my empirical study proved the existence of regional differences, therefore, as EU keeps increasing the level of law harmonization, it should also focus on those differences and leave some room for regional adjustments.

**3.** One of the key purposes of the recent hostile immigration policies in certain EU member states was the attempt to reduce the amount of social welfare, lower skilled and illegal migrants. <u>Countries that are concerned about illegal labour force immigration should invest in increasing the quality of their own labour market supervision.</u> Denmark is a great example of the country that pays high wages but avoids unnecessary illegal immigration. The desirable results are achieved as an outcome of a strict supervision of the authorities and trade unions that leave very little place for employers to pay lower than minimum wage or employ immigrants illegally. UK, on the other hand, lacks fruitful supervision of the labour market and therefore is a popular destination country for lower skilled migrants willing to work for lower salary than official minimum.

# Appendix

Graph 1. Unemployment rate - comparison of foreign-born persons with native-born persons (age 25-54), year 2008



() Data not available or unreliable for foreign-born for BG, LT, MT, PL, RO, SI, SK and IS.

Source: Internal Market: Awareness, Perceptions and Impacts. 2011. Eurobarometer. Page 42

Graph 2. Correlations between ln_	_immigration and	independent variables
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	ln_imm~n	ln_dis~e	ln_pop~1	ln_pop~2	ln_awe~1	ln_awe~2	ln_une~1	ln_une~2	ln_gd~a1	ln_gd~a2	ln_soc~1	ln_soc~2	ln_un_~1	ln_un_~2
ln_immigra~n	1.00													
ln_distance	-0.30	1.00												
ln_populat~1	0.37	0.06	1.00											
ln_populat~2	0.46	0.09	0.00	1.00										
ln_awerage~1	-0.03	-0.01	0.16	-0.02	1.00									
ln_awerage~2	0.47	0.06	-0.04	0.13	0.09	1.00								
ln_unemplo~1	0.10	0.08	0.17	-0.02	-0.37	0.03	1.00							
ln_unemplo~2	-0.13	0.10	0.02	0.19	0.06	-0.37	0.11	1.00						
ln_gdp_pe~a1	-0.05	-0.02	0.10	-0.01	0.97	0.05	-0.46	0.02	1.00					
ln_gdp_pe~a2	0.45	0.05	-0.04	0.05	0.04	0.96	0.02	-0.47	0.02	1.00				
ln_soc_ben~1	0.09	-0.04	0.41	-0.02	0.77	0.04	-0.14	0.08	0.74	0.02	1.00			
ln_soc_ben~2	0.43	0.02	-0.02	0.38	0.00	0.76	0.07	-0.23	0.00	0.72	0.06	1.00		
ln_un_bene~1	0.03	0.03	0.25	0.00	0.65	0.00	0.01	0.06	0.64	0.00	0.72	0.05	1.00	
ln_un_bene~2	0.39	0.09	-0.03	0.24	0.00	0.62	0.07	0.04	0.00	0.60	0.05	0.68	0.05	1.00

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