

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Economics



Bachelor thesis

**Economic Analysis of Immigration into the Czech Republic
and its Implications for the Czech Labour Market**

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE
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Thesis title

Economic Analysis of Immigration into the Czech Republic and its Implications for the Czech Labour Market

Objectives of thesis

The goal is to evaluate the contribution of foreigners on Czech market, to identify reasons and volumes of immigration to the Czech Republic. Also, impact of urbanization and GDP on birth rate in the Czech Republic will be evaluated and compared with other regions in order to better understand immigration needs in the Czech Republic.

Methodology

Literature review is conducted using synthesis, extracting, deduction and induction. Practical part is deduced by qualitative and quantitative analysis, labour analysis, data of immigrants

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Keywords

Immigration phenomenon, immigration, immigrants in the Czech Republic, the Czech Republic, labour market, economy of the Czech Republic.

Recommended information sources

"Heaven's Door: Immigration Policy and the American Economy" by George J. Borjas, 2001

"The Economic Sociology of Immigration" by Alejandro Portes, 1995

"Friends Or Strangers: The Impact of Immigrants on the American Economy" by George J. Borjas 1990

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Affidavit

I hereby declare that this bachelor thesis "Economic Analysis of Immigration into the Czech Republic and its Implications for the Czech Labour Market" has been written only by the undersigned and without any assistance from third parties.

Furthermore, I confirm that no sources have been used in the preparation of this thesis other than those indicated in the thesis itself.



In Prague 13.03.2014

Čestné prohlášení

Prohlašuji, že svou bakalářskou práci "Ekonomická analýza imigrace do České republiky a její implikace pro český trh práce" jsem vypracovala samostatně pod vedením vedoucího bakalářské práce a s použitím odborné literatury a dalších informačních zdrojů, které jsou citovány v práci a uvedeny v seznamu literatury na konci práce. Jako autorka uvedené bakalářské práce dále prohlašuji, že jsem v souvislosti s jejím vytvořením neporušila autorská práva třetích osob.



V Praze dne 13.03.2014

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Economic Analysis of Immigration into the Czech Republic and its Implications for the Czech Labour Market

Summary

There are 436,000 foreigners with long term and permanent visas in the Czech Republic, which accounts for 4.15% of the total Czech population (Czech Statistical Office, 2012).

Foreigners launch new businesses giving opportunities to the domestic economy, labour and financial markets. They bring a vast amount of investments paying lots of tax, increasing country's population and directly and indirectly influencing the Czech GDP.

The incentives of immigration have been explained calculating the real wage, Purchase Power Parity, job vacancy and poverty rate in different countries. Fertility rate was analysed, in order to explain the need in growing net migration rate in the Czech Republic, as birth rate is very low in this country. All measurements and calculations are done using descriptive and inferential statistics.

This research is important for various departments of the Czech government where the civil service specialists can see the evidences of the benefits settlers bring to the labour market in this country. Undoubtedly, the volume of migration must be restrained and analysed quarterly in order to control immigrants' influence on the economy, so positive effects are not altered to negative.

This thesis proved that immigrants strongly and positively affect the Czech labour market. They fill in the labour shortage and raise the total population increase.

Keywords: Immigration phenomenon, immigration, immigrants in the Czech Republic, the Czech labour market, economy of the Czech Republic.

Ekonomická analýza imigrace do České republiky a její implikace pro český trh práce

Souhrn

V České republice žije 436 000 cizinců s dlouhodobým a trvalým pobytem, což představuje 4,15 % z celkové populace České republiky (Český statistický úřad, 2012).

Cizinci zakládají nové společnosti, které poskytují příležitosti pro místní hospodářství, pracovní a finanční trhy. Přinášejí obrovské množství investic, platí daně, zvyšují počet obyvatel v zemi, a nepřímo ovlivňují HDP České republiky.

Byly vysvětleny pobídky pro imigranty a to výpočtem reálné mzdy, paritou kupní síly, mírou volných pracovních míst a mírou chudoby v různých zemích. Dalším předmětem analýzy byla porodnost, na které bylo vysvětleno, proč je potřeba, aby měl v České republice index „přírůstek obyvatelstva přistěhováním“ vzrůstající trend. Všechna měření a výpočty se provádí pomocí deskriptivní a inferenční statistiky .

Tento výzkum je důležitý pro ministerstvo vnitra České republiky. Specialisté tak mohou vidět důkazy o výhodách, které imigranti přinášejí na trh práce v této zemi. Není pochyb, že počet imigrantů musí být zdrženlivý a analyzovaný čtvrtletně za účelem kontroly vlivu přistěhovalců na ekonomiku, tak pozitivní účinky nejsou změněny na negativní.

Tato práce ukázala, že přistěhovalci mají velký a zároveň pozitivní vliv na trh práce České republiky. Zejména tím, že zaplňují nedostatky pracovních sil a zvyšují celkový přírůstek obyvatelstva.

Klíčová slova: Jev imigrace, imigrace, imigranti v České republice, trh práce České republiky, hospodářství v České republice.

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1. Introduction

Growing global immigration has increasing influence on the world economy every year. Companies tend to hire immigrants more than they did in the past.

Foreign-born population penetrates every social and working layer. Nowadays, it is almost impossible to have homogeneous ethnical working environment. There are foreign teachers and professors at schools exchanging their knowledge and experience. It became normal for schools to send their students all over the world and traveling became a very normal thing, a hobby of 21st century.

The Czech Republic is an emerging county in the Central Europe and it becomes a home for thousands of immigrants every year. It is important to know what role they play in European Economy and how they can affect local citizens.

Unfortunately, there are huge gaps in migration studies world economist do not spend sufficient time on researching this topic. Unfortunately, the Czech Republic is not an exception. Even now a lot of people, politicians and economists argue whenever immigration is a positive or negative phenomenon. The problem is that this topic is not researched deeply enough, that makes a huge gap in understanding of economics and migration. Immigrants cannot be considered just as a labour factor. Settlers are also consumers of goods and services in a hosting country, tax payers, investors or self-employed, they fill in the shortage of labour and create business, demand and supply, new markets or work places.

Vast number of researches simply ignores that fact considering only sociological, psychological or demographical parts of immigration, which does not describe a true influence of migrants on the economy. Some people do not even consider immigration as an issue, others claim group of co-ethnic settlers influence and damage one`s culture (Bodvarsson & Van den Berg, 2009).

Immigration as a part of globalisation in 21st century cannot be ignored. People can see foreign companies everywhere, stating with furniture that people buy, food people consume and finishing with huge corporations which support the Czech economy, transportation, food chains, banks and clothes brands. That is why immigration does have a big impact on the Czech and global economy. This topic must be regularly researched analysed and controlled by government There is no sufficient document, paper or thesis which would explain the impact of immigrants and reasons for raising demand to settle in the Czech Republic. “Most of the economic analysis of immigration has been performed by labour economists, not international economists. Labour economists have tended to view immigrants mostly as workers, not the diverse human beings that they are. International economics has treated immigration as a relatively less important form of factor movement, and international economists have given it little more attention than it gives other special cases that require analysis that goes beyond the standard models of international trade and international investment. Hence, most of the economic analysis of immigration has failed to capture the full consequences and benefits of immigration (Bodvarsson & Van den Berg, 2009).”

As international economists claim that immigrants usually enrich a country but sometimes the uncontrollable growth of net migration can damage the economy, stretch limited resources and bring a country to scarcity of goods and services.

Foreigners must contribute to the country not just simply take from it. This is the main idea of healthy immigration.

Most of the scientific documents analyse sociological or demographical impact on the economy forgetting about a big under researched study – economic impact of migration. This thesis shows and analyses the main economic influence of immigrants using mathematical formulas which were found by world-known migration researchers and apply to the Czech economy. Conclusions and recommendation regarding new policies or migration volume control are drawn from the analysis and discussed.

2. Goals of Bachelor Thesis and Methodology

In this part goals of the research were discussed and explained in the methodology section.

2.1. Goals

The aim for this bachelor thesis is to evaluate why there is a need in migration in whole and particularly in the Czech Republic using the Czech fertility rate and explanation of the factors which influence it. Comparison method estimates information and data from the Czech Republic as emerging country with developed and developing countries in order to predict the possible changings in migration and fertility rate and check implemented policies, which are applied in other countries.

Relationship between birth rate, level of urbanisation, GDP per capita is analysed in the US, India and the Czech Republic as the factors of natural increase of the country, if it is too low the total increase must be stimulated using net migration. Important criteria, such as: the level of social life and nationality are also taken into consideration. Through these measurements it is possible to check the strength of relationship between urbanisation, GDP and birth rates in particular countries and dependency of economic strength and natality.

Urbanisation is a vital trend that affects number of people living in various countries around the world. It is associated with many costs, as well as, benefits for individuals and society. Shortage in the natural increase must be filled in with net migration increase to develop county and economy, increase GDP and enrich the Czech economy.

When the factors, which influence population growth, are explained they can be used to clarify the demographic changings.

Another important part of this thesis is descriptive statistics. Calculating real wage for different occupation in the Czech Republic and four other countries of origin of immigration with the biggest immigration volume to the Czech Republic explains what professions have the highest incentives to relocate to the Czech Republic and why exactly they volunteer to move to the Czech Republic. Combining real wage with Purchasing Power Parity in particular countries explains why the Czech Republic is becoming attractive for immigrants from these destinations.

2.2. Methodology

Descriptive statistics help to summarise whenever the impact of foreigners is positive or negative. Using official statistical data from the Czech Statistical Office this research describes and compares immigrants in the Czech Republic with the Czech citizens or with immigration situation in some other countries.

Population changes in the Czech Republic showed the full picture of demographic development of the country, natural increase is very low so the stream of immigrants substitutes the lack of new generation valid data is gathered from the Czech Statistical Office.

To explain why the biggest migration volume to the Czech Republic is from Slovakia, Vietnam Ukraine and Russia monthly real wages were compared using nominal income and Consumer Price Index (CPI). Salary, as the biggest push factor to migrate, encourage people to move to a new country only if it is higher than in their home place, so a real wage was counted and compared per profession and country. Occupations with the biggest differences in the real wage are more attractive for immigrants as a push factor to move to the Czech Republic:

$$Real\ Wage = NominalWage * \frac{CPI_{base}}{CPI_{current}}$$

“Real income refers to the amount of goods and services you can buy today compared to the price of the same goods and services you could have purchased in another time period (Investopedia US, A Division of IAC, 2014)”.

Comparison of real wages in the Czech Republic and other countries showed that this country is very attractive to immigrants from countries of origin with the biggest immigration volume because of the relatively competitive real wage in the Czech Republic than in the other countries from where people are most likely to emigrate to this case study country.

Data was collected from www.wageindicator.org webpage, the average nominal monthly wage of workers with 10 years’ work experience in the same career field was compared in Euros for 8 occupations: Police Officer, Cleaning service, IT programmer, Surgeon, Dentist, Teacher, CEO of a company with no more than 500 employees, and Farmer.

Nominal wage was recounted with regards to CPI as inflation factor. New information about real wage is interesting, though, does not show the full picture of immigration reasons to migrate to the Czech Republic without counting a **Purchasing Power Parity (PPP)**.

Purchasing Power Parity helped understand deeply why the researched country is attractive from the international migration point of view. Baskets of goods of the biggest migration nationalities currently living in the Czech Republic are compared to the hosting country, in this study case- the Czech Republic. Results in percentage are shown and analysed.

PPP is “an economic theory that estimates the amount of adjustment needed on the exchange rate between countries in order for the exchange to be equivalent to each currency's purchasing power (Investopedia US, A Division of IAC, 2014)”.

“The relative version of PPP is calculated as:

$$S = \frac{P_1}{P_2}$$

Where:

"S" represents the exchange rate of currency 1 to currency 2

"P₁" represents the cost of goods "x" in currency 1

"P₂" represents the cost of goods "x" in currency 2 (Investopedia US, A Division of IAC, 2014)”.

In this research, it is important to understand why the stream of the immigrants is vital for the Czech economy. A fertility rate is very low in this country, so a country growth from natural increase is substituted with immigration inflow growth, using correlation and regression analysis, a relationship between birth rate, GDP and urbanisation in the USA, India and the Czech Republic is studied, as a case study. Important criteria, such as: the level of social life and nationality are also taken into consideration. Through these measurements it is possible to check the strength of relationship between urbanisation and birth rate and dependency of economic strength and natality. in particular countries

This project was presented by **Yulia Sycheva** in Austria, Vienna on the “ELLS Annual Conference and Scientific Student Conference 2013” at the University of Natural Resources and Life Sciences, Vienna (BOKU), November 14 - 16, 2013.

Hypothesis that the birth rate in particular country is a function of GDP (PPP) per capita and Urbanisation: was proven:

$$\text{BirthRate} = f(\text{urbanisation}, \text{GDP}) = \alpha_0 + \alpha_1 * \text{Urb} + \alpha_2 * \text{GDP} + \text{error}$$

Correlation and regression analysis, relationship between birth rate, GDP (PPP) per capita and urbanisation is analysed using Gretl, MS Office and SAS programs.

Linear Regression: $Y = a + \beta x + u$

Multiple Regression: $Y = a + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \dots + \beta_t x_t + u$

Where:

unknown parameters, denoted as β , which may represent a scalar or a vector.

X - independent variables,.

Y - dependent variable,.

The approximation is usually formalized as $E(Y | X) = f(X, \beta)$.

The mathematical formula for computing R^2 is: $\bar{R}^2 = 1 - (1 - R^2) \frac{n-1}{n-p-1} = R^2 - (1 - R^2) \frac{p}{n-p-1}$

In this case the formula is:

$$\text{BirthRate} = f(\text{urbanisation}, \text{GDP}) = \alpha_0 + \alpha_1 * \text{Urb} + \alpha_2 * \text{GDP} + \text{error}$$

The value of R is such that $-1 \leq r \leq +1$. The “+” and “-” signs are used for positive correlations and negative linear correlations, respectively (Slud, 2008).

The data is taken from governmental official statistical offices of each country from the case study.

Urbanisation as a factor of decrease of fertility rate could be easily explained. As the cost of living increases in the industrialised zones, families have less money to raise the children. Cost of education and child healthcare is generally much higher than in rural areas, also parents in

cities expect from their children to obtain higher education, travel or consume some upper-class goods and services, such as: traveling, expensive notebooks or smartphones.

The cost of the mortgages raises the expenses of the family and it becomes unaffordable for citizens to take care of second or third offspring.

Also, nowadays the time problem is more and more serious. As women became equal to men in aspects of jobs, careers or social status, women generally do not have the same amount of spare time for her children as it used to be ,for example, 50 years ago or as it now in some parts of rural areas as women` job is take care of the house and to raise offspring, who will be the source of labour and survival after 10-15 years, so in rural parts of the country children is an investment to future well-being as they will help parents in growing crops and taking care of livestock and the house.

All these factors lead to decrease in the birth rate in urban parts of the country as industrialisation, economic and time pressure surges (uOttawa, 2012).

Quite the same reasons of negative correlation between GDP (PPP) per capita and birth rate can be seen in everyday life. Higher salaries lead to higher social status; people understand that they want to spend more money on themselves, as a type of enjoyment.

Families want to give the best to their children, education, clothes, goods etc. Families understand that they would want to give high-quality education to their descendants, within their limited financial resources, so they relinquish to raise the same number of offspring that their ancestors used to in the past.

3. Literature Review

Theoretical part includes literature review and important knowledge of immigration science. This knowledge helps in full understanding of analysis part of this research.

3.1. Immigration Background Studies

The book of (Portes, 1995) explains the sociological reasons of immigration, staying in a different country and working abroad from economic point of view. Detailed information about duration economic reasons and physiological explanation help predict and learn what to expect from foreigners in future. Furthermore, it helps to forecast the logic, push factors and duration of migration.

“Sociologists of immigration have noted a number of empirical anomalies that systematically contradict these predictions. International labour migration largely originates in countries at an intermediate level of development rather than in countries where wages are lowest. Furthermore, in these intermediate countries, the very poor and the unemployed are not the first to migrate and are generally underrepresented in the outbound flow. Instead, it is people with some resources—small rural proprietors, urban artisans, and skilled workers—who most commonly initiate and sustain the movement. But of course, not all of them leave. Migration is a highly selective process in which certain urban areas and rural communities become prime sources of the movement, while other areas of comparable socioeconomic makeup are not touched by it (Portes, 1995).”

While (Borjas, 1990) tries to look at immigrants as factors that influence US economy. He writes about immigrants and their influence on American economy describing and giving types of different foreigners.

“The USA became an International Labour Market giving opportunities to immigrants and offering workplaces. The US attracts relatively unskilled workers comparing to Australia and Canada, so immigrants neither compare with natives when it comes to the labour market, nor pose a threat to them (Borjas, 1990)”.

Alejandro Portes also mentions the division of immigrants in the group they belong to:

There are 3 types of Social Expected Duration of immigration (SED): “socially prescribed, collectively expected and patterned temporal expectations (Portes, 1995).”

Socially prescribed - term of staying in a foreign country is regulated by certain law so a foreigner cannot exceed the dates of visa.

Collectively expected - in case of war, riots or revolutions some people prefer to move to another safer country but in most cases only for the period of unstable situation in a home

country. “What distinguishes these durations from socially prescribed duration is that they tend to be imprecise, are rarely formalised and we can infer, depend on frequent, no routine, group interaction. Immigrants can create enclaves in which they speak their native language, who in stores owned by co-ethnics, and even be employed by co-ethnics (Portes, 1995).”

Patterned temporal- is a group which settles a family in a new country, finds a good job and plans to raise children in a new hosting country. “Seeing immigration as temporary is likely to increase these ambivalences. For example, temporary immigration is often associated with the separation of family members, as when the husband migrates and leaves the wife and children behind. Even when husband and wife move together, there are still likely to be ambivalences about responsibilities toward parents left behind and the extent to which the immigrant should, or needs to, keep in touch (Portes, 1995).”

From another hand (Bodvarsson & Van den Berg, 2009) have their own point of view on the types of immigrants which exist:

Settlers – a group of people who immigrates to another country with a purpose to stay there permanently. For example, a big group of Slovaks settle in the Czech Republic raising their children there.

Contract workers – Usually seasonal workers, who come to a host-country for a temporal period of time, agriculture labour, domestics sector or tourism. Greece is dependent on seasonal workers, tourism maintain country earnings and emerges a need in seasonal labour.

Professionals – High educated managers CEOs or directors, often work for corporations or international companies. A good example can be military workers from the USA in Germany. Germany hires educated, high skilled American soldiers to maintain its military strength.

Asylum seekers – “These are people who left their home countries to escape political, religious, or social persecution, or other threats to their safety and well-being.” After June 30, 2013, when the president of Russian Federation banned "Propaganda of non-traditional sexual relations to minors" (Grekov, 2013) and signed an anti-homosexual law, stream of Russian homosexual asylum seekers appeared in the USA and Europe.

Involuntary immigrants – group of people who were forced to immigrate. Africans until 19 century were involuntary immigrants; they had been taken as slaves to the New World.

Students - it is a very different type of immigrants: people who travel to another country in order to obtain higher or additional education.

Illegal immigrants – people who were not permitted to enter one country but they crossed the border breaking the law (Bodvarsson & Van den Berg, 2009)

The economist (Portes, 1995) is sure that usually people move as a community, not by individuals. Families or close relatives move for a long term time abroad to find a better job, better social level of life or satisfying amenities. Once someone moves, the destination becomes attractive for their relatives and close people too; reunification of the family bonds is one of the top factors of emigration. These family chains is what makes other people follow one and fills in a destination with co-ethnics from the same country of origin, bursting into a big number of immigrants and making trends of migrations. Sometimes, the same chains and feeling of the responsibility for the family at home make immigrants return to their home countries.

“The fact of individual immigration arises a new generation of co-ethnic immigration and can give a start for new community migration: “Family reunification provisions brought in over 80% of the 643000 immigrants admitted in fiscal year 1988 (Portes, 1995).”

Individuals usually emigrate due to weak relationship with family members. Usually, it is a young or not married person who wants to try new experience and his or her own skills in a new environment in order to receive some higher standards of living. Often, they do not have anything to lose at home country that is why they are willing to take a risk in a new hosting place.

Later, (Bodvarsson & Van den Berg, 2009) also researched the reasons to migrate.

They analysed immigration from different angles, not only considering immigrants as a labour factor but as consumers and tax payers.

Looking for the factors which influence people to move they found out that there are very different facts which affect people in their decision. It could be a better salary or a better satisfying job, climate conditions, social securities, level of social life or public goods, school, political and economic stability.

These economists describe Borjas` findings of labour demand and its influence on the labour market. In case of labour shortage a person who does not have a chance to find a well-paid job in a home country has a chance to earn more abroad or vice versa. For example, the Czech chef who specialises in the Czech cuisine and very known between his co-ethnics, might not find the same popularity in another country, simply because the Czech food is not that famous abroad (Bodvarsson & Van den Berg, 2009).

“Canadian doctors who obtained their schooling in Canada should easily be able to transfer their skills to the U.S. and continue to earn relatively high incomes after migration. In contrast, a ρ that is positive but very small implies that skills do not transfer well across borders. It is also possible that $\rho < 0$, which is the case if a person’s skills

generate relatively low (high) earnings at home, but relatively high (low) earnings in the destination country (Bodvarsson & Van den Berg, 2009).“

Also, they introduce the summary of push and pull factors for immigration and against it. Factors which make people move abroad or keep people on the place they are already. Picture 1 is based on (Bodvarsson & Van den Berg, 2009) and (Gamesby, 2013) researches. “Push” factors are the factors which motivate to migrate. “Pull” factors make one country be more attractive to immigrate. “Stay” factors are the reasons which keep one person in a home country and “Stay away” factors make a hosting country less attractive for migration.

Picture 1: Push & Pull factors of migration.

Home-County	Destination Country
Push factors	Pull Factors
Poverty Wars Low wages High taxes Unemployment Discrimination High level of crime Forced military service Religious persecutions Low public goods and services Lack of amenities Low social securities Social immobility Undesirable weather	High wages Higher social status Social mobility Low taxes Employment Personal & economic freedom Religious freedom Peace Family reunion Low level of crime Better public goods & services Demanded amenities Educational opportunity Better climate
“Stay” factors	“Stay away” factors
Family Friendship Social status Employment Property Cultural familiarity Certainty Political or religious privileges	Language barrier Cultural barrier Discrimination Low social satus Unemployment Lack of political or social rights Uncertainty Crime

Source of picture: (Bodvarsson & Van den Berg, 2009) & (Gamesby, 2013)

There are some mathematical explanations of immigration stated by Polachek and Horvath (1977), Sjaastad (1962) but the best and complex explanation belongs to Borjas (1987):

“Borjas assumes that a migrant’s earnings in the destination country will be

$$\ln(w_1) = \mu_1 + \varepsilon_1 \quad (2.6)$$

Where:

μ_1 – mean income home county residents if they **all** migrated to the destination country

ε_1 – a random variable (showing a chance or good luck to obtain the desirable or high paid position.

In Borjas’ model, if the costs of migrating are C , then a person migrates if

$$w_1 > w_0 + C, \text{ or } \frac{w_1}{w_0 + C} > 1.$$

Taking logs, she migrates if $I > 0$, where

$$y = \ln w_1 - \ln(w_0 + C) > 0 \quad (2.7)$$

Note that $\ln(w_0 + C)$ is approximately equal to: $\ln(w_0) + \left(\frac{C}{w_0}\right)^7$.

Borjas defines $\frac{C}{w_0}$ as π , and calls this a “time equivalent” measure of the costs of migration. He assumes it to be constant across all individuals in the home country. It then follows from (2.6) that the person will migrate if

$$I = (\mu_1 - \mu_0 - \pi) + (\varepsilon_1 - \varepsilon_0) > 0 \rightarrow (\varepsilon_1 - \varepsilon_0) > -(\mu_1 - \mu_0 - \pi) \quad (2.8)$$

According to expression (2.8), migration will occur if the destination country rewards the migrant more for her or his particular skills and if net mean earnings in the destination country are higher.

Recall that the model introduced a random element to earnings. Hence, it is the probability that $I > 0$, which we will call P , that serves as a measure of the migration rate. From (2.8), the emigration rate will be positive if $Pr[(\varepsilon_1 - \varepsilon_0) > -(\mu_1 - \mu_0 - \pi)] > 0$. For analytical convenience, Borjas standardizes the emigration rate to a Z value by noting that P is equivalent to

$$Pr\left(Z > \frac{-(\mu_1 - \mu_0 - \pi)}{\sigma_v}\right) = 1 - \Phi(Z) \quad (2.9)$$

where σ_v is the standard deviation of $(\varepsilon_1 - \varepsilon_0)$, $\Phi(Z)$ is the cumulative distribution function for Z , and $\sigma_v = \sigma_0^2 + \sigma_1^2 - 2\rho\sigma_0\sigma_1$ under specific assumptions about the distributions. The emigration rate thus depends upon mean earnings in each country, each country’s earnings variance, relative migration costs, the degree of skills transferability across borders, and the interaction of the source and destination country earnings variances (the $\sigma_0\sigma_1$, term in σ_v) (Bodvarsson & Van den Berg, 2009).”

Minus of this theory is that it is based on equation (2.6) which assumes **all** citizens of one country will migrate to another one, which makes no sense, because practically there is almost no chance that all county will move to another one.

Professor George Borjas is a famous American writer and economist who changed the direction of immigration law development. His books and papers are a fundamental works, which helped analyse the influence of immigrants on economy and possible negative side effects. The government and Ministry of Interior of the USA realised the need in new alternative immigration policies which were discussed and taken on 101 Congress in 1990 (Helton, 1990).

“Immigrants do not greatly affect the earnings and employment opportunities of natives, they may have an even greater long-run economic impact because of their relatively high poverty rates and propensities for participation in the welfare system and because national income and tax revenues are substantially lower than they would have been if the United States had attracted a more skilled immigrant flow (Borjas, 1990).”

There is more influence from such settlers in a long-run immigration. Such group of people does not support country with efficient amount of money supply and emerges a risk of need of social security for immigrants below the poverty rate line.

Based on Borjas works (Bodvarsson & Van den Berg, 2009) mention long-run immigration influence believing that there are some huge gaps in literature and knowledge of immigration impact on economy:

“We argue that a complex phenomenon like immigration can only be understood when it is viewed from a long-run, dynamic, and interdisciplinary perspective. Most of the economic analysis of immigration has been performed by labour economists, not international economists. Labour economists have tended to view immigrants mostly as treated workers, not the diverse human beings that they are. International economics has immigration as a relatively less important form of factor movement, and international economists have given it little more attention than it gives other special cases that require analysis that goes beyond the standard models of international trade and international investment (Bodvarsson & Van den Berg, 2009).”

George Borjas found a strong correlation between nationality of immigrant and level of skills and knowledge one has. He suggests United States needs more skilled workers with higher education to receive more benefits from them than nowadays and offers to implement the **Selective Immigration**. It is an offer of a new policy which gives more opportunity to receive visa for people with demanded parameters and skills, which country requires such as: higher education, better English language level and age and occupation with regards to family:

“An immigration policy should be to increase the skill level of the immigrant flow, these policy changes need not completely ignore humanitarian considerations. To a great extent, emigration and immigration statutes reflect what a society believes about liberty, human rights, and family values. These concerns can be easily incorporated into the policy reforms. For example, extra points could be awarded to visa applicants who have close relatives residing in the United States, or visas could be sold at a discount to buyers who have these family ties. Similarly, these policies can be easily adjusted to account for

sudden political changes in the source countries and to permit the entry of persons seeking refuge from political and religious oppression (Borjas, 1990).”

Borjas` research significantly influenced the development of immigration policies and view on them in United States of America. People believed that there is a strong negative impact of foreigners on natives competing for the workplace on the labour market, as George Borjas proved, there is some negative influence but very small comparing to *benefits* new settlers provide to the country such as investments or money from taxes.

Introducing the Selective immigration strategy helped reduce the inflow of unskilled workers and released the potential educated stream of immigrants

3.2. What is Migration?

For deep understanding of the research topic it is vital to know what the term “migration” really means. Here are the main definitions of terms of migration.

Migration is a result of “movement of a person or a group of persons, either across an international border, or within a State. It is a population movement, encompassing any kind of movement of people, whatever its length, composition and causes; it includes migration of refugees, displaced persons, economic migrants, and persons moving for other purposes, including family reunification.

Economic migrant - A person leaving his or her habitual place of residence settles outside his or her country of origin in order to improve his or her quality of life. This term is often loosely used to distinguish from refugees fleeing persecution, and is also similarly used to refer to persons attempting to enter a country without legal permission and/or by using asylum procedures without bona fide cause. It may equally be applied to persons leaving their country of origin for the purpose of employment” (IOM, 2011).

Naturalisation -The process under federal law whereby a foreign-born person may be granted citizenship. In order to qualify for naturalization, an applicant must meet a number of statutory requirements, including those related to residency, literacy, and education, as well as an exhibition of "good moral character" and a demonstration of an attachment to constitutional principles upon which the United States is based (Farlex, Inc., 2013).

3.2.1. History of Migration

Human migration history started earlier than it could be expected. First tribes with total population no more than 10,000 people started fighting for their lives trying to survive in the wild world full of danger and treats, as Gugliotta G. (2008) says:

“Today's scientists believe that from their [human`s] beginnings in Africa, the modern humans went first to Asia between 80,000 and 60,000 years ago. By 45,000 years ago, or possibly earlier, they had settled Indonesia, Papua New Guinea and Australia. The moderns entered Europe around 40,000 years ago, probably via two routes: from Turkey along the Danube corridor into Eastern Europe, and along the Mediterranean coast. By 35,000 years ago, they were firmly established in most of the Old World. The Neanderthals forced into mountain strongholds in Croatia, the Iberian Peninsula, the Crimea and elsewhere, would become extinct 25,000 years ago. Finally, around 15,000 years ago, humans crossed from Asia to North America and from there to South America (Gugliotta, 2008).”

After a latest 20s century immigration “boom” around 3% of nowadays world population lives outside of the country of its origin. It is a natural effect of globalisation (Bodvarsson & Van den Berg, 2009).

3.2.2. Types of Immigrants: Who Migrates?

There are a lot of different categories of immigrants where they could belong to. Some immigrants do not belong only to one but many groups. Everyone should consider it before allocating migrants to any of these groups which are listed below. These types were offered by Bodvarsson Ö.B. and Van den Berg H. (2009)

Settlers – a group of people who immigrates to another country with a purpose to stay there permanently. For example, a big group of Slovaks settle in the Czech Republic raising their children there.

Contract workers – Usually seasonal workers, who come to a host-country for a temporal period of time, agriculture labour, domestics sector or tourism. Greece is dependent on seasonal workers, tourism maintains country. Tourism emerges a need in a seasonal labour.

Professionals – High educated managers CEOs or directors, often work for corporations or international companies. A good example can be military workers from the USA in Germany. Germany hires educated, high skilled American soldiers to maintain its military strength and learn from each other on the base of exchange programme.

Asylum seekers – “These are people who left their home countries to escape political, religious, or social persecution, or other threats to their safety and well-being.” After June 30, 2013, when the president of Russian Federation banned "Propaganda of non-traditional sexual relations to minors" (Grekov, 2013) and signed an anti-homosexual law, stream of Russian homosexual asylum seekers appeared in the USA and Europe.

Involuntary immigrants – a group of people who were forced to move abroad. Africans until 19 century were involuntary immigrants; they had been taken as slaves to a New World.

Students - it is a very different type of immigrants, people who travel to another country in order to obtain higher or different education.

Illegal immigrants – people who were not permitted to enter one country but they crossed the border breaking the law (Bodvarsson & Van den Berg, 2009).

It is important to know and take into account that immigrants are divided into categories of purpose of immigration. Immigrants is not only the labour force and it is not right to look at them only from that point of view they also can be: (1) a supplier of her factor services or, effectively, a maximizing investor in her human capital, (2) a consumer of amenities and public goods, or (3) a producer of her own household goods and services (Bodvarsson & Van den Berg, 2009).

3.2.3. Push-Pull Factors: Why Migration?

“Until 1973, there was no single, unified theory of why people migrate. Today, there is still no such convergence to a single model of immigration. Sociologists and economists have very different views about why people migrate, and politicians and policymakers seem to have yet another set of views (Bodvarsson & Van den Berg, 2009)“.

(Smith, 1776) in his book “An Inquiry into the Nature and Causes of the Wealth of Nations“ first time suggested that immigration emerges as the result of disequilibrium on the labour markets. Difference in wages is one of the main factors why people migrate.

People migrate only if they expect to be paid more in a hosting country for the same work they do now in their home country or to find a better job where there is a lack of labour. Reasons to move can be better weather and health conditions, better social level of life or better culture, as well as country political and economic stability or some of the public goods such as: schools, roads, buildings, parks or police protection.

Decisions to migrate do not occur in a vacuum; the "costs" and "benefits" that enter into such individual calculations are themselves conditioned by an institutional structure reflecting external

hegemony. Resulting transformations in the economy, society, and culture of peripheral regions provide the contexts in which migration abroad becomes a plausible, even a necessary option for their populations. At the microstructural level, the sociology of immigration has not developed a similar set of concepts to account for international differences in propensities for migration between individuals and communities. Instead it has made full use of the concept of social networks. Migration is defined as a network-creating process because it develops an increasingly dense web of contacts between places of origin and destination. Once established, such networks allow the migration process to become self-sustaining and impervious to short-term changes in economic incentives. Costs and risks of moving abroad are reduced by the operation of these social bridges across national frontiers, allowing women and children to join male family heads abroad. People begin to move for reasons other than the original economic incentives—to join family members, for example, or to fulfil normative expectations as to "proper" behaviour for young workers (Portes, 1995)."

After (Smith, 1776)research two other scientists made a summary of his work adding some empirical research to it. (Shields & Shields, 1989) "The Emergence of Migration Theory and a Suggested New Direction" found out a formula of volume of migration depending on the wage difference:

$$M_{ij} = \beta_{ij}(W_j - W_i)$$

Where:

i and *j* two different regions

W - Wage

M - Number of migrants

B - Reflect barriers to migration, such as distance, imperfect information, and intentional government

People argue if immigrants bring more positive or negative effect on labour market. Immigrant cannot be just a factor of production; he or she is also a consumer and a tax payer. It is a known fact that settlers bring new ideas to the market, renovating systems working in businesses and pushing the financial market but there is a possibility of cultural problems, miscommunications and misunderstandings on the workplace can cause some serious problems during the working process. Also, immigrants increase the social cost using social securities which are, theoretically, given to protect citizens.

Government should take maximum benefits from letting people to immigrate to their country, for example, settlers can be used to fill in the shortage of workforce on the labour market.

3.2.4. Psychological and Sociological Explanation of Immigration

Tendency to migrate from the poorest counties to industrial is surprisingly low, which means that not only the dissent income is a reason to move abroad.

High travel and living cost of high-income countries make moving being unaffordable for very poor people. Also, one of the factors can be that citizens of one of the lowest GDP countries have worse or no education, sometimes cannot read or count which makes it difficult to find any job in a new developed country. For example, in the Republic of South Sudan, middle Africa, only 27% of population over 15 years old can write and read (Central Intelligence Agency, 2014).

Migration to western or European countries might be unreachable for people from underdeveloped countries.

3.2.5. Laws of Ravenstein

This part introduces non-governmental laws which were introduced by **Ravenstein, Ernst Georg** (1834–1913), geographer and cartographer (Baigent, 2004). Ravenstein stated some laws which are not written by any government or any policymakers but some life laws, principles and features which are common for all immigrants:

- 1) Most migrants only proceed a short distance, and toward centres of absorption.
- 2) As migrants move toward absorption centres, they leave "gaps" that are filled up by migrants from more remote districts, creating migration flows that reach to "the most remote corner of the kingdom."
- 3) The process of dispersion is inverse to that of absorption.
- 4) Each main current of migration produces a compensating counter-current.
- 5) Migrants proceeding long distances generally go by preference to one of the great centres of commerce or industry.
- 6) The natives of towns are less migratory than those of the rural parts of the country.
- 7) Females are more migratory than males.

(Ravenstein, 1885)

4. Analysis and discussion

In this section immigration to the Czech Republic is analysed. Fertility rate, as a factor of demographics and total population increase, is checked and conclusions were drawn from it. Real wage and Purchase Power Parity were checked within case study countries in order to explain migration volumes to the Czech Republic. Illegal migration and poverty rate within immigrants is analysed in order to check the harmful influence of immigrants. Job vacancy rate and immigration occupations were compared to prove the effectiveness of immigrants to fill in the labour shortage.

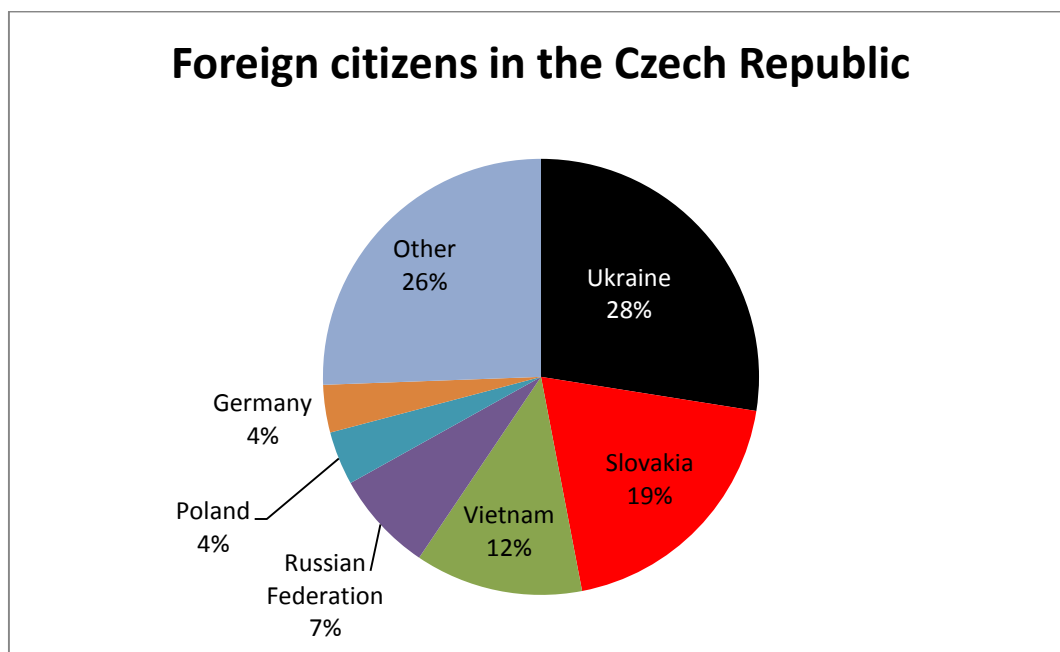
4.1. Analysis of main sources of immigration

There are 436,000 foreigners with long term and permanent visa in the Czech Republic, which accounts for 4.15% of the total Czech population. Due to very low or negative natural population increase it is very vital for this European country to monitor the demographic statistics and regulate its population stimulation foreigners to settle in there.

Analysing immigration economics, it is important to know the major co-ethnic groups in the Czech Republic. By the law # 40/1993 “foreigner is a person, who does not have a Czech citizenship (Krausová, 2013)”.

Graph 1 shows the percentage of most common ethnics in the Czech Republic. The biggest immigration groups come from: Ukraine, Slovakia, Vietnam and Russia.

Graph 1: Foreign citizens in the Czech Republic.



Source of data: (Krausová, 2013).

In the reasons of moving there is always a strong motivation reason, such as: higher income, family union, higher social level of life or public goods, better amenities in the host country or common history (religion, wars, governmental regime).

“At the first level, the sociological approach notes the close affinity that exists between a history of contact, colonization, and intervention by powerful "core" nations over weaker ones and the onset of migration flows from the latter. International migration patterns tend to reflect with notable precision the character of past hegemonic actions by global powers. An example is the series of immigration flows that consolidated the present Latin-origin communities in the United States. These flows reflect, mirror like, the history of North American expansion into its immediate periphery. The countries that supplied the major contingents giving rise to today's ethnic communities—Mexico, Puerto Rico, Cuba, and the Dominican Republic—were each, in turn, targets of this expansionist pattern. The economic, political, and cultural penetration that followed altered the makeup of these peripheral societies to the point where many would-be migrants were acculturated into North American ways even before setting foot abroad (Portes, 1995).”

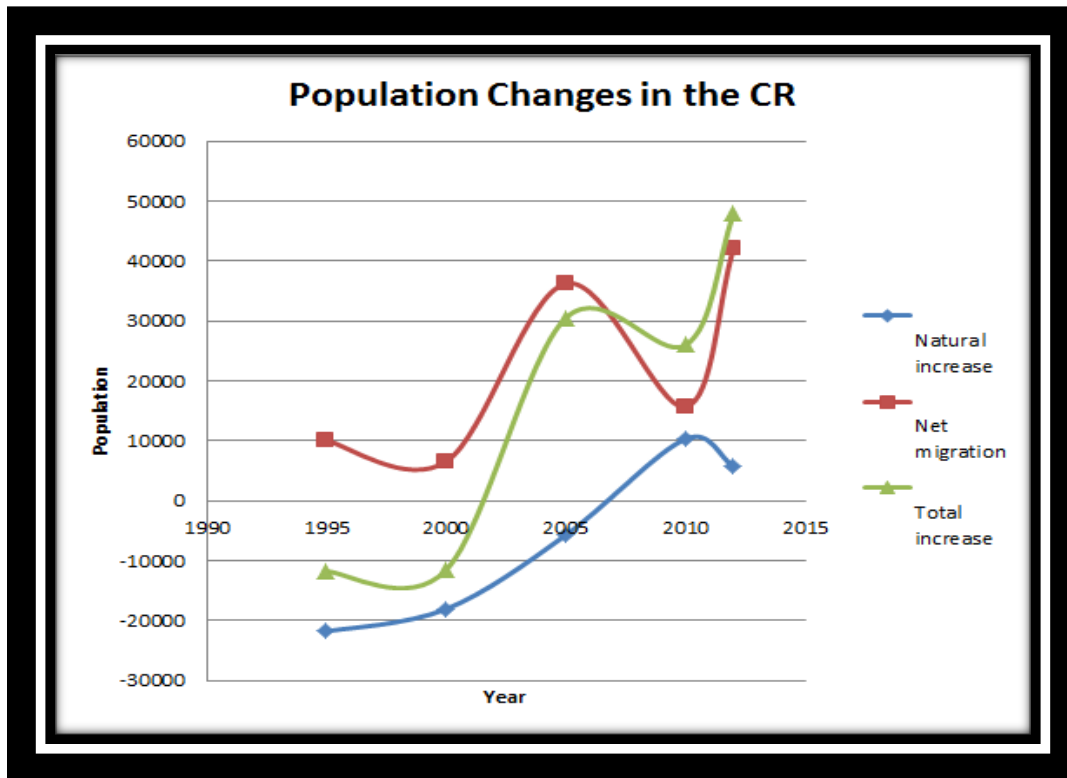
Big volume of Ukrainians in the Czech Republic explains with the fact of the Czech obviously higher wages and better economic stability, Ukraine (part of USSR until 1991) borders with Slovakia (which used to be a part of Czechoslovakia until 1992). People usually tend to migrate on short distances as shorter immigration results in lower immigration costs higher guarantee that in the case of bad luck in the host country, person can travel home anytime with less cost to return home protecting him or her interests.

Slovaks immigrate to the Czech Republic as it used to be united country until 1992 – Czechoslovakia, common history path and common culture make the Czech Republic be attractive for immigrants from Slovakia.

Vietnam shared communism past. A students` exchange programme agreement with Czechoslovakia became a big push factor to the nowadays situation, where the Czech Republic is one of the major emigration destinations for Vietnamese.

The Graph 2 below shows the time-series data, it is obvious that the main part of total population increase in the Czech Republic is made by Net migration (88% in 2012); another 12% is made by natural increase (Štyglerová, 2010). Immigrants are necessary for healthy economy and development of this country.

Graph 2: Population Changes in the Czech Republic: 1992–2013, absolute monthly figures



Source of data: (Štyglerová, 2010)

Also, immigrants tend to establish business more often than local citizens, making new working places and increasing financial market of the country.

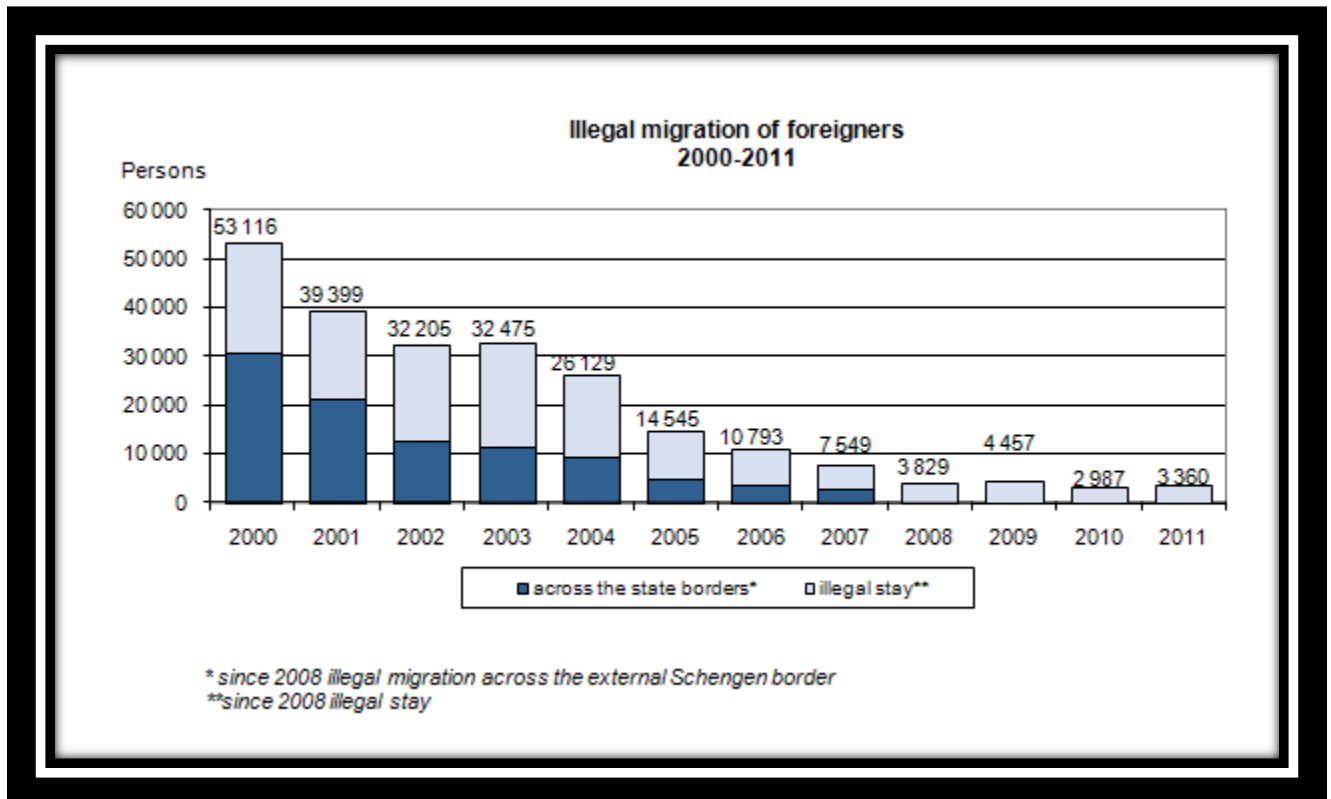
For the year 2011 as statistical data says 310,992 foreigners who live in the Czech Republic had a regular job or are registered as trade license holders, which accounts for **71.312%** (Czech Statistical Office, 2012) out of total legal immigrants in the country, comparing with Czechs who have **65.431%** employment rate (Nývlt, 2013).

21.198% of working settlers are self-employed (Czech Statistical Office, 2012), comparing to Czech citizens **8.459%** self-employment (Mejstřík & Petrářová, 213).

A higher self-employment rate between immigrants can be explained by many factors. First of all, immigrants are a group of risk-takers, they did not afraid to move to another country without a 100% confidence of better standards of life. It is a phenomenon of self-selection; risk-takers move abroad and tend to be more ambitious and open-minded (Bodvarsson & Van den Berg, 2009). There is another factor which may explain a high self-employment within immigrants-discrimination. Subliminally, Czechs choose co-ethnics to the companies and organisations, so a Czech is more likely to get an offered well-paid position in the business rather than a foreigner.

Illegal immigration is reduced to its minimum, so there are only 3,360 illegal immigrants in the Czech Republic Figure 1, which is a really low number to affect the Czech economy. As (Bodvarsson & Van den Berg, 2009) states: illegal immigrants do not harm economy in almost any sense of the meaning of this word. They will not ask for social securities, being afraid of deportation, though they still do pay taxes though VAT payments, their salary is not very high, and so government does not have a big loss.

Figure 1: Illegal migration of foreigners to the Czech Republic



Source of the graph: (Czech Statistical Office , 2013)

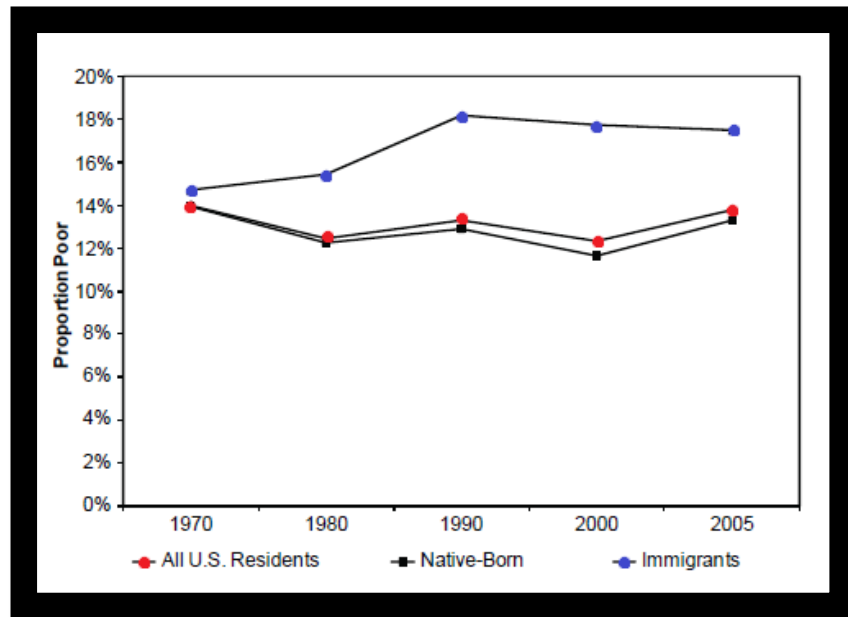
Some economists suggest that illegal immigrants and the biggest part of legal foreigners are below the poverty line and drag the back, slowing down the economic development.

4.2. Poverty Rate Between Immigrants in the USA

On the Figure 2 below you can see a comparison of proportion between the U.S. residents, recent immigrants and the U.S. citizens. As it is seen from this Figure, poverty rate is generally higher between immigrants rather than between native-born population. It can be explained by the lack of English language knowledge, lack of skills and low education between newcomers. Higher standards are expected to have from an average American within the U.S.A., so immigrant has a lower chance to obtain a high position job competing with a person with higher

skills. Discrimination can be one of the reasons of poverty. Generally people tend to higher co-ethics for higher position if they have a choice.

Figure 2: Proportion in poverty, all U.S. residents, native-born residents, and immigrants 1970 to 2005

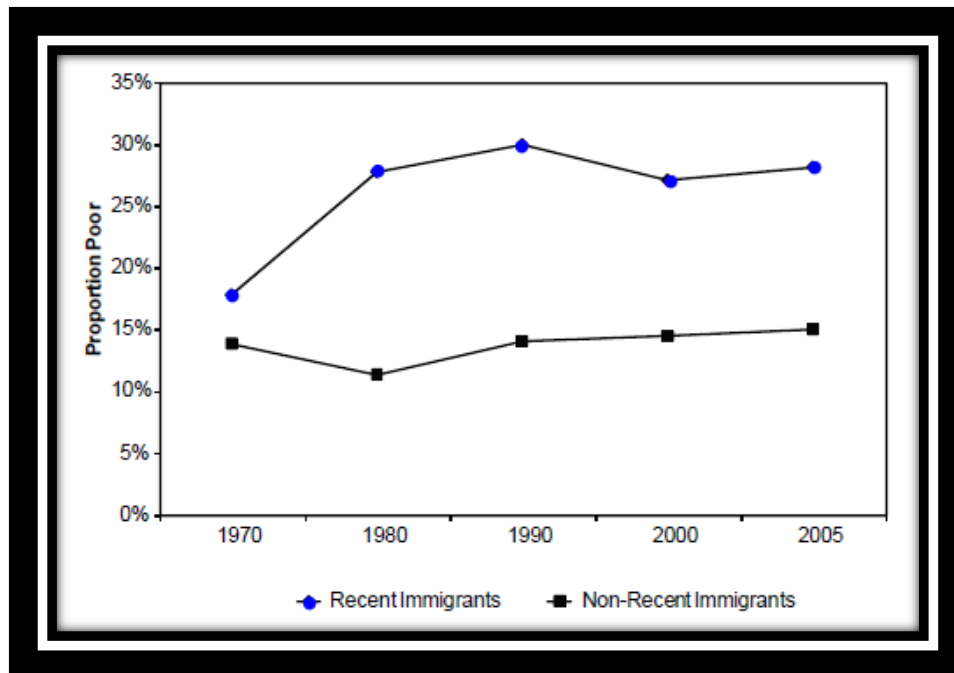


Source of figure: (Raphael & Smolensky, Immigration and poverty in the United States, 2006)

Figure 3 shows that a poverty rate between new incomers to the U.S. is generally higher comparing to long-term immigrants, who live in the U.S.A. longer than 5 years.

The reason of this phenomenon is simple: new immigrants did not have enough time to settle, find good suitable job or just launch a business. Generally, immigrants who stay below the poverty line for too long period of time tend to go back to their home country, as they did not success in a hosting country they prefer to move back to their lives which they used to have before immigration (Raphael & Smolensky, Immigration and poverty in the United States, 2006).

Figure 3: Poverty rates among recent immigrants (arrived within past 5 years) and non-recent immigrants (arrived more than 5 years ago).



Source of figure: (Raphael & Smolensky, Immigration and poverty in the United States, 2006)

All in all, poverty rate is not significant within foreigners. They either cross the poverty line and reestablish their income or are not satisfied and come back to their home countries. US government has no reasons to be afraid that foreigners can use social securities against poverty which are meant to be for American citizens. The difference between poverty rate among Americans and among foreigners is not consequential

The Czech Republic belongs to the country with one of the lowest poverty rate among other European countries. There are 9.6% of Czechs living below the poverty line which is 4,190 Euros or 114,953 CZK per year for 2012 (Czech Statistical Office , 2013).

In the article (Raphael & Smolensky, Immigration and poverty in the United States, 2006)it is obvious that poverty rate is more likely to occur between immigrants. Though, poverty among new settlers in the USA does not exceed 30%, which is minority in immigrant group.

“Moreover, while the level of poverty among recent arrivals has increased in recent decades, the declines in poverty observed in subsequent censuses suggests that even the poorer immigrants of the most recent wave either exit poverty at a fairly rapid rate, or emigrate out of the country. Interestingly, the immigrant-native disparity in the incidence of poverty declines with time in the U.S. when immigrants are compared to native birth cohorts of similar age at similar points in time. This pattern is consistent with either real income growth among immigrant households that propel immigrants out of poverty or the

selective return migration of those immigrants most likely to be poor (Raphael & Smolensky, Institute for Research on Poverty, 2008).”

“Declines were notable for the native-born, whereas poverty among immigrants increased. Although the poverty rate of immigrants from many regions has declined, the distribution of the U.S. immigrant population by origin has shifted decisively towards source countries that generate immigrants who are more likely to be poor..” (Raphael & Smolensky, Immigration and poverty in the United States, 2006)

All these evidences show that in the Czech Republic (with poverty rate 9.6% and illegal migration 3,360 (Czech Statistical Office, 2012)) illegal migration does not affect the poverty rate or has a very low influence.

4.3. Fertility Rate

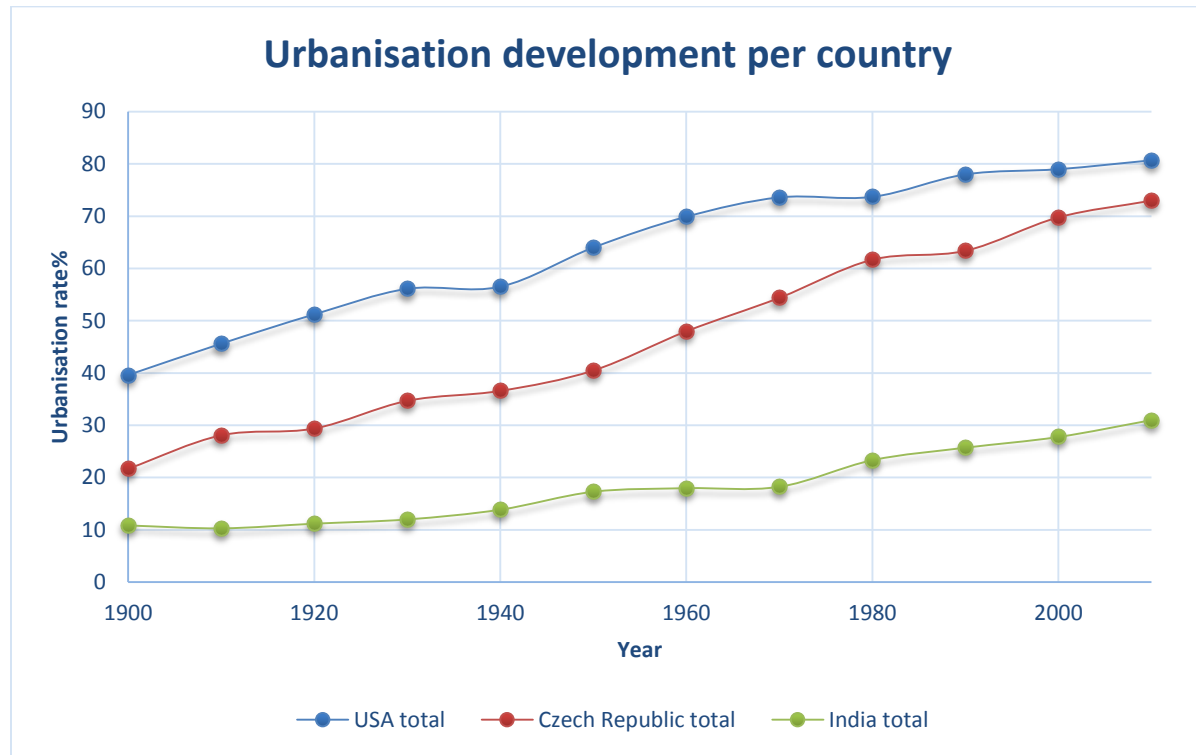
There is a natural decrease of fertility rate in the Czech Republic which is seen though last 50 years development (Czech Statistical Office , 2013). Lack of natural increase of population is artificially compensated with immigrants who obtain the Czech citizenship (migrants account for 88% of total increase in 2012) (Czech Statistical Office , 2013).

To understand why immigrants are important for the Czech Republic it is necessary to understand the reasons of birth decrease. As a theory claims urbanisation and GDP have strong negative relationship with birth rate.

Three countries were compared: the USA, the Czech Republic and India which are developed emerging and developing countries respectively.

On the Graph 3 India, the USA and the Czech Republic urbanisation development is presented since 1900 until 2010 in percentage of population living urban areas. The US has the steepest progress (infoplease, 2013), the Czech Republic lower urbanisation rate in 1900 and by year 2010 advanced towards the USA almost reaching the same percentage of development (Czech Statistical Office , 2013). India`s level of urbanisation is lower than others` in 2010 it merely reached 30% of urban population (The Indian Census, 2011).

Graph 3: Urbanisation development in India USA and Czech Republic

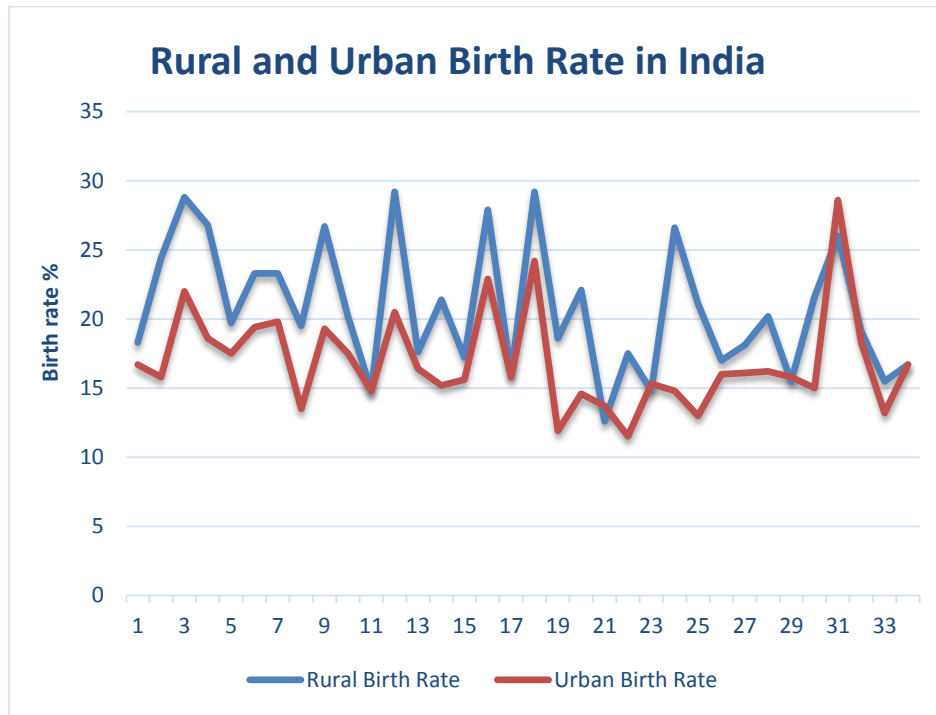


Source of data: (Czech Statistical Office, 2012) (The Indian Census, 2011) (infoplease, 2013)

As a prove of negative influence of urbanisation on fertility rate there is a Graph 4 where rural and urban birth rates are compared by region in India. Vertical line is a birth rate % per 1000 population and horizontal x line numbers represent regions as:

1. Andhra Pradesh, 2. Assam, 3. Arunachal Pradesh, 4. Chhattisgarh, 5. Delhi, 6. Gujarat,
7. Haryana, 8. Haryana, 9. Jammu and Kashmir, 10. Jharkhand, 11. Karnataka, 12. Kerala,
13. Madhya Pradesh, 14. Maharashtra, 15. Odisha, 16. Punjab, 17. Rajasthan, 18. Tamil Nadu,
19. Uttar Pradesh, 20. West Bengal, 21. Bihar, 22. Goa, 23. Himachal Pradesh, 24. Manipur,
25. Meghalaya, 26. Mizoram, 27. Nagaland, 28. Sikkim, 29. Tripura, 30. Uttarakhand,
31. Andaman and Nicobar Islands, 32. Chandigarh, 33. Dadra and Nagar Haveli, 34. Daman and Diu,
35. Lakshadweep, 36. Puducherry (The Indian Census, 2011).

Graph 4: Urban and Rural birth rate in India



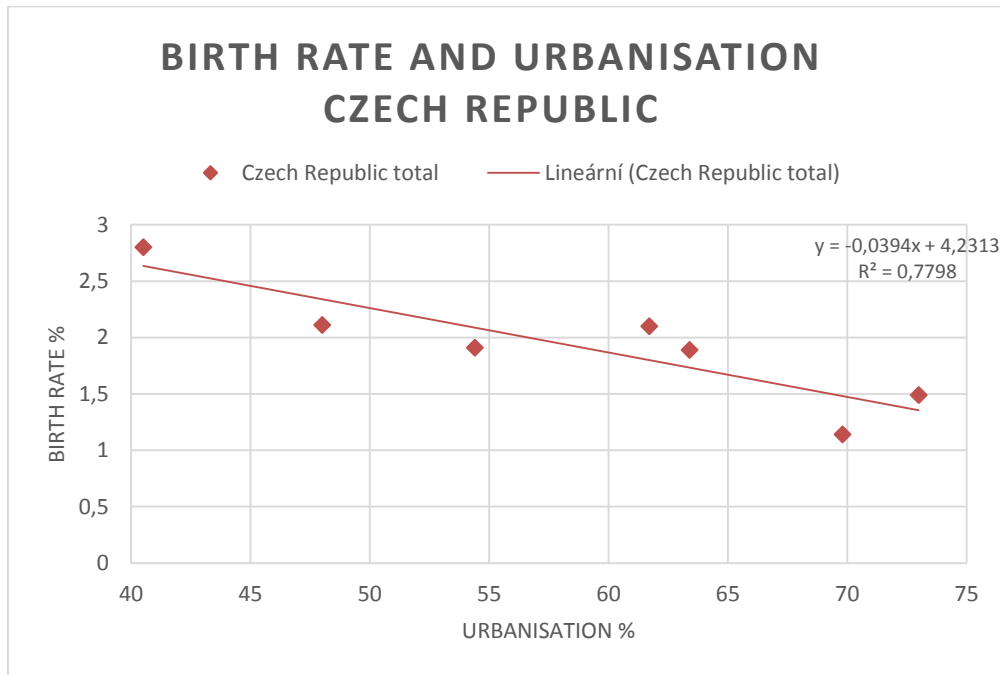
Source of data: (The Indian Census, 2011)

To prove the theory within the Czech Republic a linear regression analysis was performed in order to check R^2 as a determinant of the strength of the correlation between birth rate by 1000 of population and urbanisation rate. Formula of linear regression is

$$Y = a + \beta x + u$$

As it is seen from the Graph 5, R^2 is 77.98% which points on a strong relationship between two variables: urbanisation and birth rate, which means that in case of the Czech Republic urbanisation and industrialisation negatively affects birth rate as it was expected.

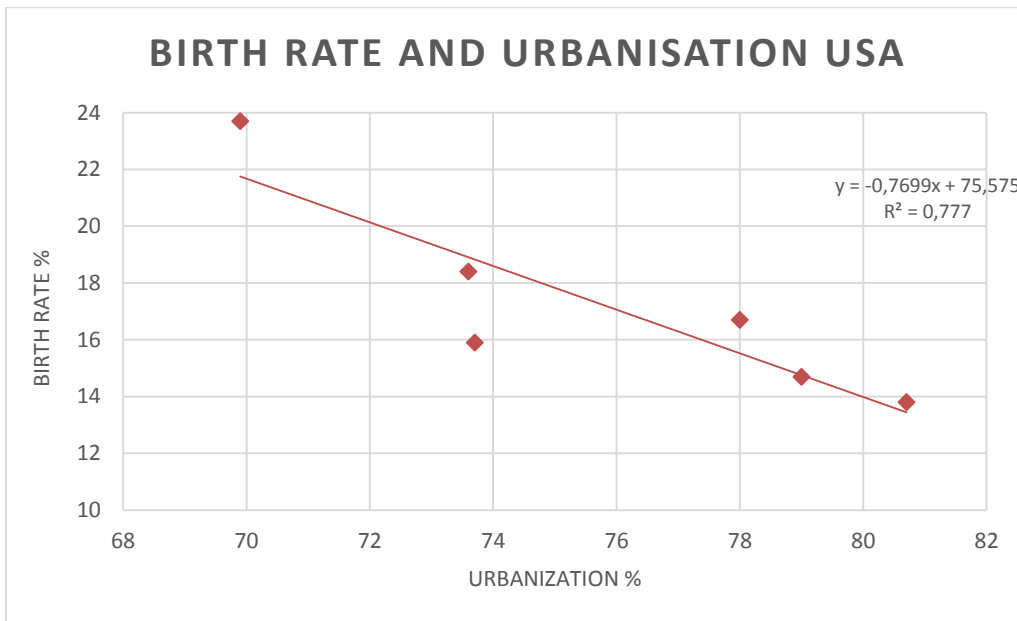
Graph 5: Regression - Urbanisation and Birth Rate, Czech Republic



Source of data: (Czech Statistical Office, 2012)

Graph 6 – linear regression between birth rate and urbanisation in the USA. There is a strong negative correlation between parameters. Coefficient of the determination is 77.7%.

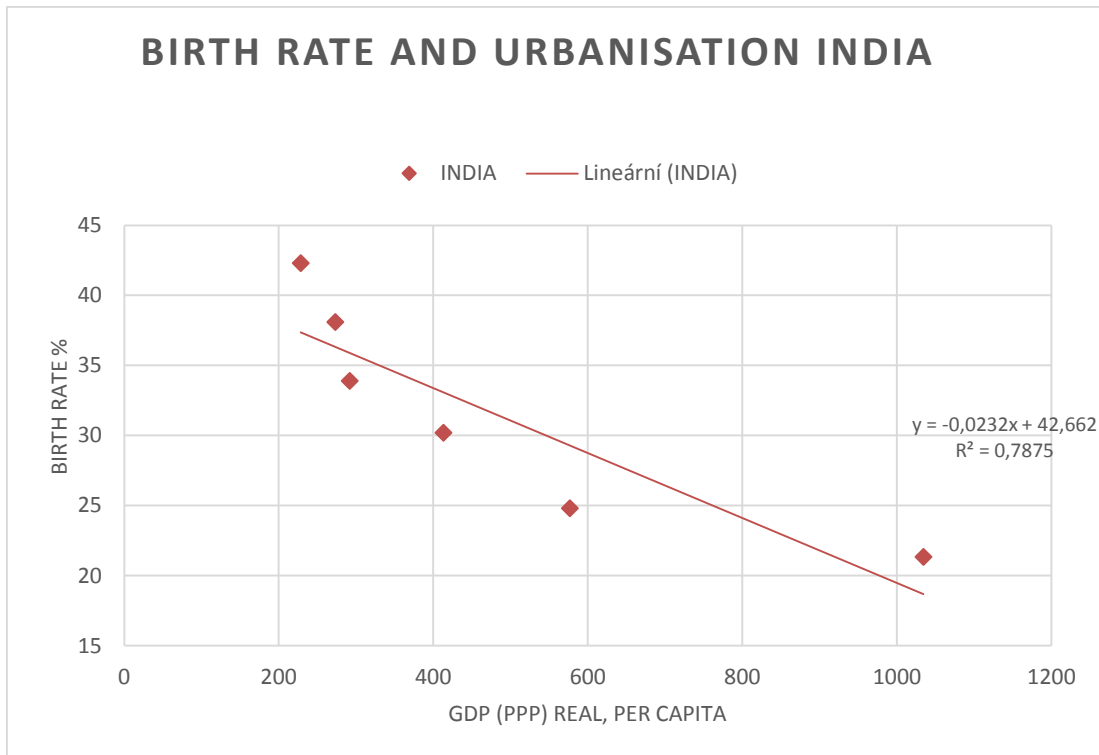
Graph 6: Regression - Urbanisation and Birth Rate, USA



Source of Data: (Central Intelligence Agency, 2014)

Similar data was found on the Graph 7 – linear regression between birth rate per 1000 of population and urbanisation in India. Strong negative correlation between these parameters says that urbanisation rate growth does affect the fertility rate. Coefficient of the determination is 78.8%.

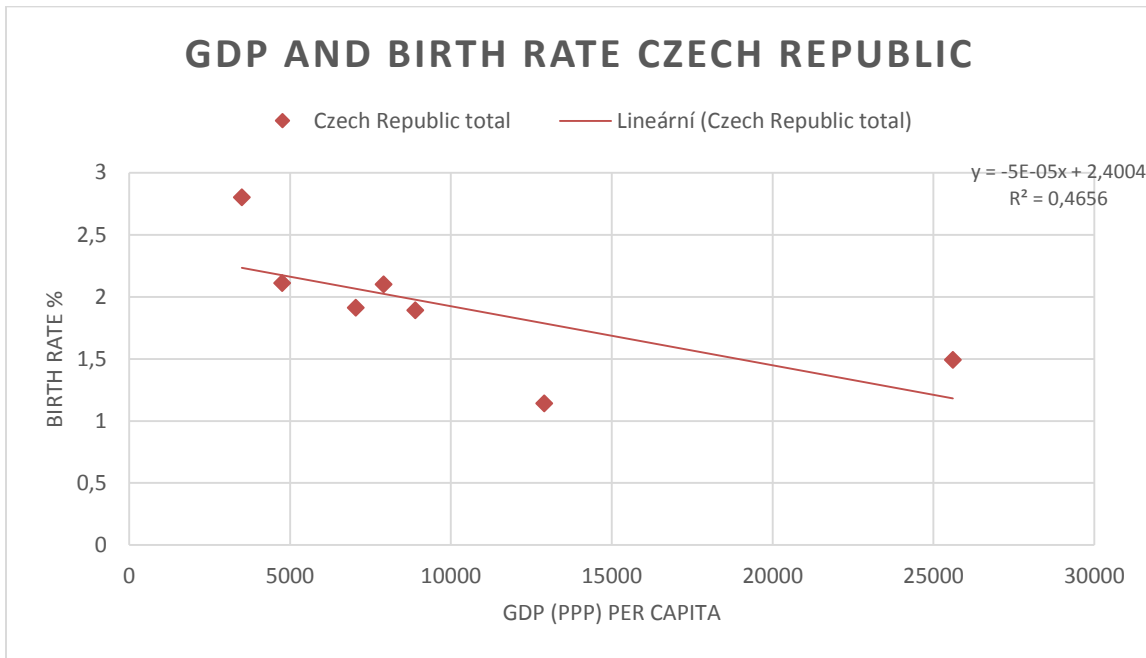
Graph 7: Regression, Urbanisation and Birth Rate, India



Source of data: (The Indian Census, 2011)

Linear regression on the Graph 8 below presents interesting data: GDP (PPP) per capita affects birth rate with 46.56% in the Czech Republic. It means there are some factors which compensate influence from GDP, so it does not strongly affect the birth rate. It could be implemented social security called “Parental Contribution” launched in the Czech Republic from the year 1995. The law #117/1995 introduces the policy “Parental Contribution” (Czech: “Rodičovský příspěvek”) which supports families with newborn child with 220,000 CZK (8,046 Euro) which is divided into smaller amounts and paid monthly on the parents` account (Zákony České Republiky, 1995).

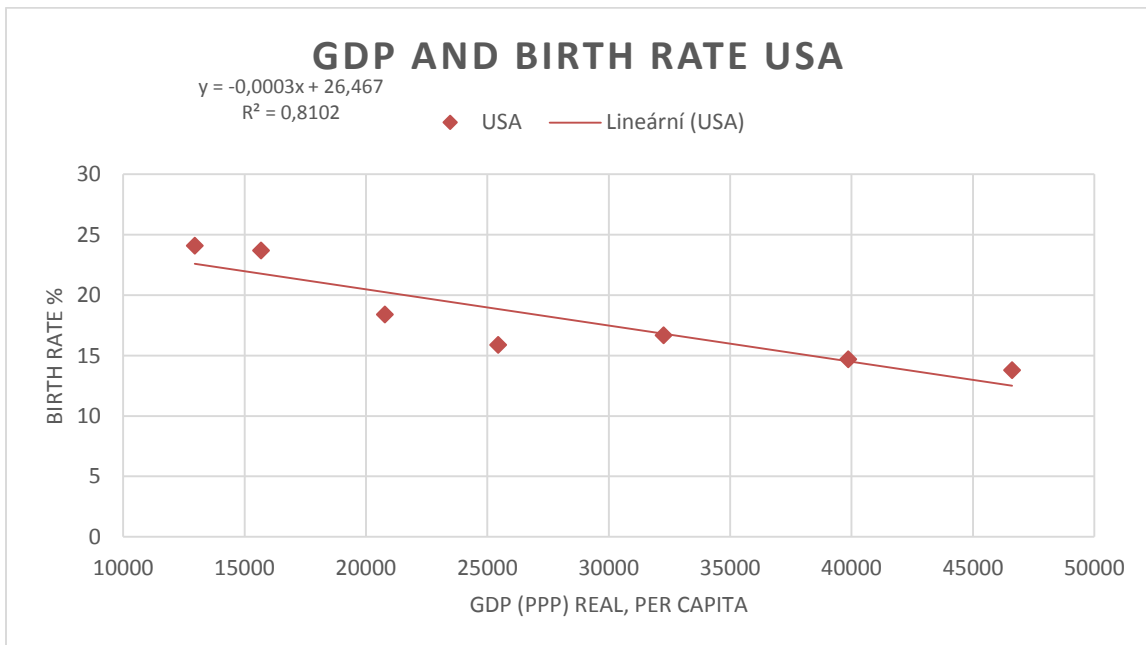
Graph 8: Regression: Birth rate and GDP, Czech Republic



Source of data: (Czech Statistical Office , 2013)

Linear regression GDP and birth rate in the USA represents a strong negative relationship 81.02% between the parameters on the Graph 9: as GDP goes up, birth rate falls.

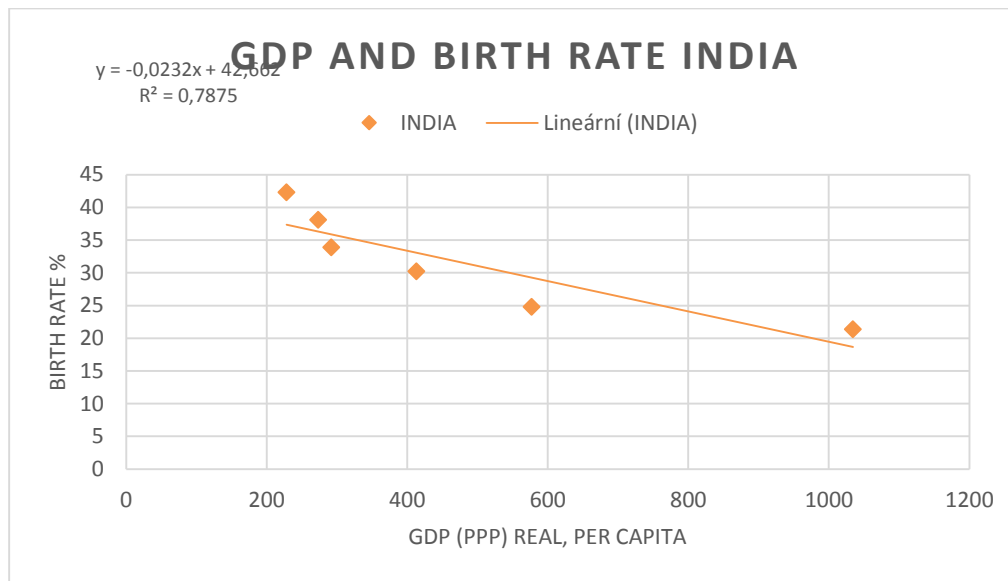
Graph 9: Regression: Birth rate and GDP, USA



Source of data: (Central Intelligence Agency, 2014)

The Graph 10 explains the same effect of GDP on fertility rate in India. As the research showed there is 78.75% of determinacy that GDP affects birth rate in India, strong negative correlation.

Graph 10: Regression: Birth rate and GDP, India



Source of data: (The Indian Census, 2011)

Taking everything into consideration, all three cases showed a strong negative dependency of urbanisation and GDP on the birth rate. As a natural process of industrialisation occurs and people move from rural areas to the cities in order to obtain higher wages, social status and level of life, fertility rate tends to fall.

Urban population has higher costs of living, higher GDP leads to the change of life interests of population.

As GDP rises, people realise they have some other aims in the life they want to achieve, such as: schooling as a determinant of high education, traveling, they prefer to have less children and give them higher level of life. In order to meet these aims and desires of urban citizens, they have to take into account the higher costs which are associated with raising descendants, giving them desirable amenities.

In rural areas this effect is reversed, because children are a factor of additional labour. More labour means more power to grow crops and take care of livestock which theoretically results in higher yields.

The Czech Republic with 73% of urbanisation rate (Czech Statistical Office, 2012) has issues with natural increase, so the balance of country growth is maintained with immigrants who obtain citizenship filling the lack of labour and supporting government with taxes and business emerging.

The fertility rate is not going to increase significantly due to increase in GDP (PPP) per capita and urbanisation rate in the Czech Republic, which accounts for almost 90%. The development and increase of population must be stimulated in the Czech Republic with other method – acquiring of immigrants, who are potential tax payers for the government.

4.4. Effect of Real Wage, Purchase Power Parity and Job Vacancy Rate on the Net Migration to the Czech Republic

This chapter discusses the influence of wage, PPP, as the main factor of immigration, in the case study country – the Czech Republic and other countries, which provide the biggest volumes of immigrants to the case study country. Job vacancy rate is compared with the main streams of immigrants` occupations and presented below

4.4.1. Real Wage

Talking about the reasons, why people would like to immigrate to the Czech Republic, higher income or more satisfying career is one of the most important decision-making factors. Data about nominal wage per country and profession was collected and real wage was found using the formula

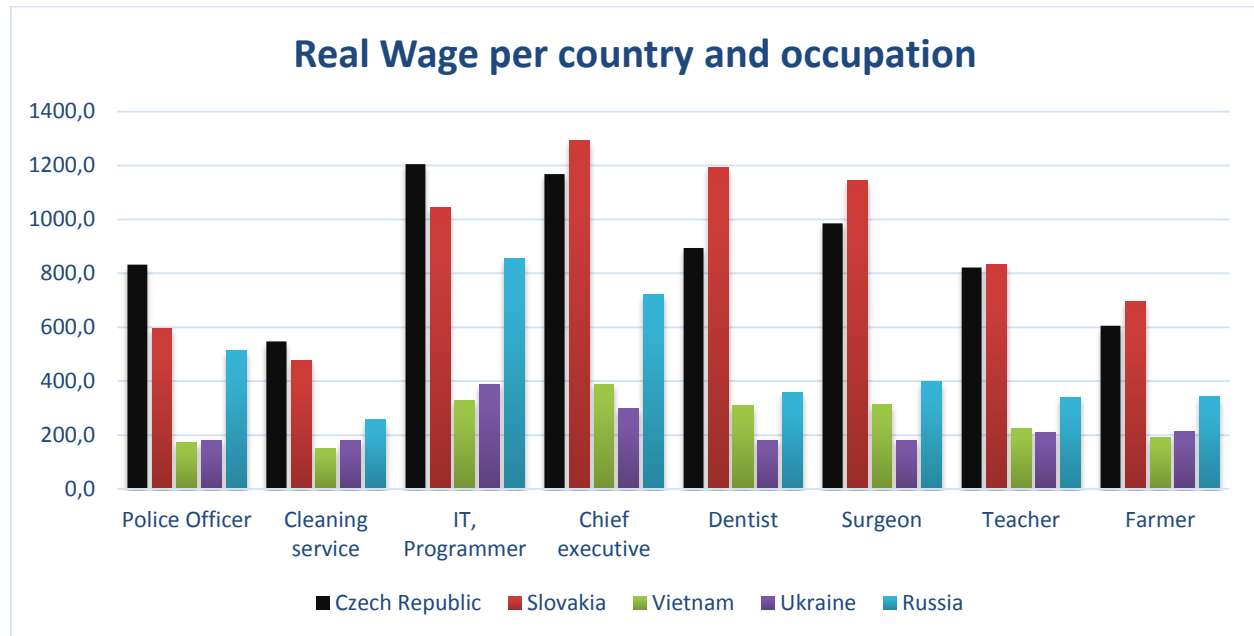
$$Real\ Wage = NominalWage * \frac{CPIbase}{CPIcurrent}$$

On the Graph 11 the main professions were analysed, average nominal monthly wages of 10 years` experience of particular job per occupation and country were gathered and compared within selected countries: the Czech Republic, Slovakia, Vietnam, Ukraine and Russia (Wageindicator, 2013).

After, nominal wages were transferred to real wages, taking into account CPI.

These countries were chosen as representatives of the biggest migration groups to the Czech Republic. A high interest in this Central European country can be explained from wage point of view and the most attractive positions for immigrants can be checked to find out which business sphere can be captivating to the immigrants on the Czech labour market.

Graph 11: Real Wage per Country and Occupation

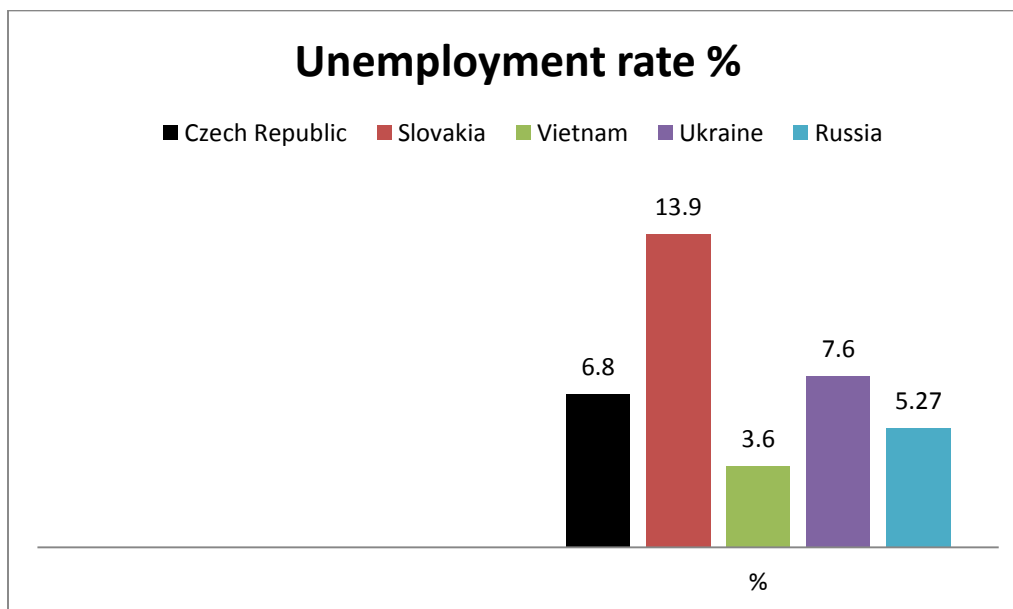


Source of data: (Wageindicator, 2013)

Graph 11 above shows that real wages in 3 countries (Ukraine, Vietnam and Russia) compared to the Czech Republic are significantly lower in all 8 professions but in the Slovak Republic *programmers, CEOs, dentists, surgeons, teachers and farmers* generally are paid more than in the Czech Republic. Only police officers and cleaning service are appreciated more in the case study country (Wageindicator, 2013).

High volume of immigrants from Slovakia to the Czech Republic, though real wages there are higher, is understandable if unemployment rate is taken into consideration. Graph 12 shows a relatively high unemployment rate in the Slovak Republic 13.9% (Wageindicator, 2013) comparing to the Czech 6.8%.

Graph 12: Unemployment Rate in The Czech Republic, Slovakia, Vietnam, Ukraine, Russia



Source of data: (Wageindicator, 2013) and (Czech Statistical Office, 2012)

Lack of work places stimulates Slovaks to move to the Czech Republic and they fill the job position demand in there, though real wage in Slovakia are generally higher.

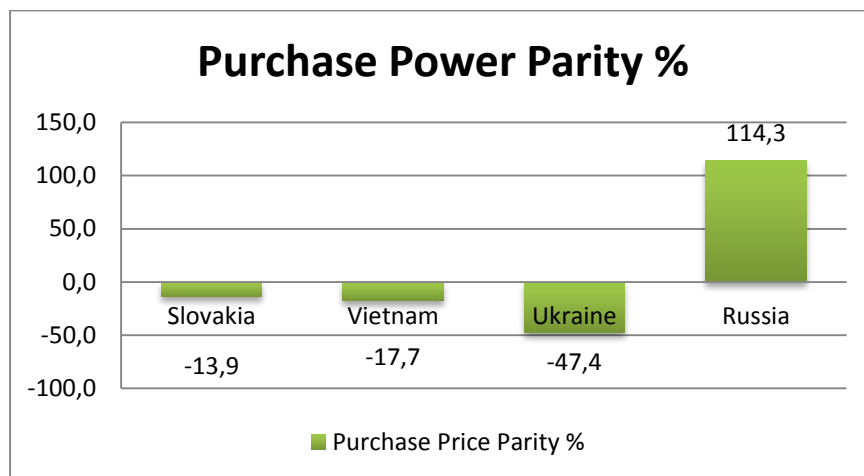
4.4.2. Purchase Power Parity

It is not enough to find out the real wage within the countries. One of the most important factors which must be taken into consideration is Purchase Power Parity (PPP). PPP is calculated in percentage compared to the Czech Republic, which is taken as 100% of PPP of other countries, so it is easy to see what countries have lower costs of living and by how many percentage this difference is within the chosen countries related to the Czech Republic.

Figure 14 shows that it is 13.9% cheaper to live in Slovakia comparing to the Czech Republic and in addition 6 professions out of 8 in Slovakia are paid more than in the Czech Republic. Different information was found in Vietnam, though, salaries there are from **3 up to 5** times smaller (Wageindicator, 2013) than in the Czech Republic, the basket of goods is only 17.7% less expensive which means that it is not beneficial to live there comparing to the Czech Republic.

Interesting information is seen in situation of the Russian Federation cost of living there is 114.3% more expensive than in the Czech Republic but monthly wages are 1.5 - 2.5 smaller. This misbalance results in self dissatisfaction and demand to immigrate to a country with higher wage and lower living costs, in this case, to the Czech Republic.

Graph 13: Purchase Power Parity %,



Source of data: (Wageindicator, 2013)

Real wage and PPP proved that Slovaks Vietnamese Ukrainians and Russians move to the Czech Republic due to the big income difference, though living cost is not significantly higher. The Czech Republic is popular destination, as it satisfies the requirements as a stable country with relatively high average income.

4.4.3. Job Vacancy and Occupations of Immigrants

It is imperative to verify that the foreigners in the host country bring benefits for this country: such as filling the labour shortage in the necessary labour spheres. The job vacancy rate in the Czech Republic is presented on the Picture 2.

In the case of the Czech Republic the biggest labour shortage is in the **real estate activities** 7.2% of lack of labour by second quarter of 2013, **administrative and support service** 4.8%, **professional, scientific and technical activities** 2.2% of shortage and **construction** 1.3% (Czech Statistical Office, 2012).

Picture 2: Job Vacancy Rate: by Economic Activity, Czech Republic

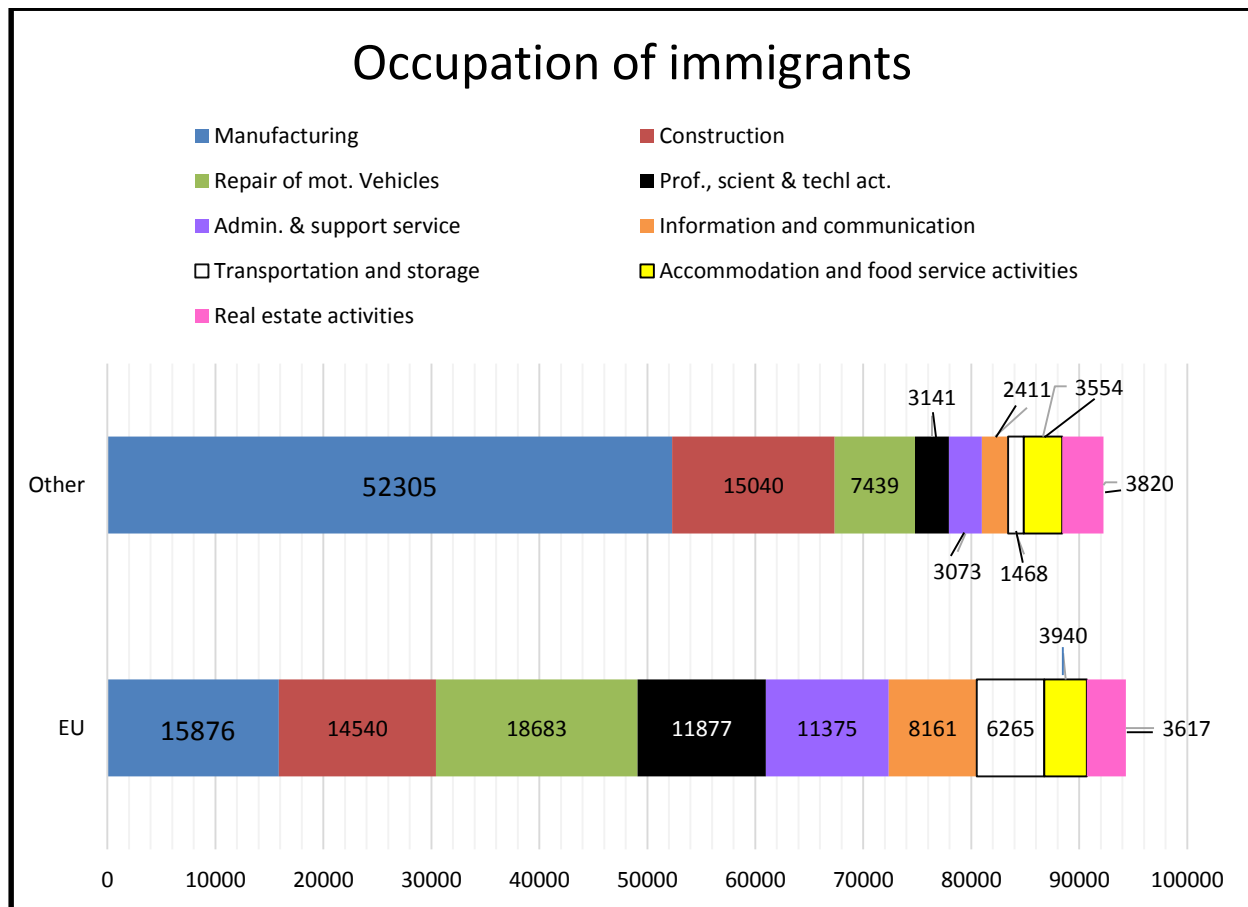
							in %
2012					2013		NACE Section ¹⁾
Q1	Q2	Q3	Q4	Q1-Q4	Q1	Q2	
0,9	1,1	1,1	1,0	1,0	0,9	0,9	Total
1,4	1,6	1,4	1,1	1,4	1,3	1,2	<i>Agriculture, forestry and fishing</i>
0,7	0,7	0,7	0,6	0,7	0,5	0,5	Industry, total
0,3	0,3	0,3	0,3	0,3	0,1	0,1	<i>Mining and quarrying</i>
0,8	0,8	0,8	0,6	0,7	0,6	0,6	<i>Manufacturing</i>
0,1	0,1	0,1	0,1	0,1	0,1	0,1	<i>Electricity, gas, steam and air conditioning supply</i>
0,5	0,8	0,7	0,7	0,7	0,6	0,5	<i>Water supply; sewerage, waste management and remediation activities</i>
1,4	1,8	2,0	1,6	1,7	1,5	1,3	Construction
1,1	1,2	1,2	1,3	1,2	1,0	1,1	<i>Wholesale and retail trade; repair of motor vehicles and motorcycles</i>
0,7	0,7	0,9	0,7	0,8	0,6	0,6	<i>Transportation and storage</i>
1,2	1,6	1,7	1,5	1,5	1,2	1,5	<i>Accommodation and food service activities</i>
0,9	1,1	1,0	1,0	1,0	0,8	0,6	<i>Information and communication</i>
1,4	1,6	1,7	1,6	1,6	1,6	1,7	<i>Financial and insurance activities</i>
6,1	8,7	7,7	6,8	7,3	7,8	7,2	Real estate activities
2,1	2,4	2,3	2,1	2,2	2,0	2,2	Professional, scientific and technical activities
3,3	3,9	4,8	5,2	4,3	4,9	4,8	Administrative and support service activities
0,4	0,5	0,3	0,3	0,4	0,1	0,2	<i>Public administration and defence; compulsory social security</i>
0,2	0,3	0,3	0,2	0,2	0,2	0,2	<i>Education</i>
0,5	0,5	0,4	0,4	0,4	0,3	0,3	<i>Human health and social work activities</i>
0,4	0,6	0,5	0,5	0,5	0,4	0,5	<i>Arts, entertainment and recreation</i>
1,9	2,2	1,8	1,7	1,9	1,5	1,7	<i>Other services activities</i>

Source of picture: (Czech Statistical Office , 2013)

To prove that foreigners efficiently fill the shortage on the labour market, statistics were checked using data from CZ-NACE, MLSA CR. At it is seen from the Graph 14, the biggest spheres, immigrants work in, are *manufacturing, construction, repair of motor vehicles and professional scientific and technical activities* (Czech Statistical Office , 2013).

There are more EU immigrants working on high well-paid positions and people from third world tend to complete lower job class.

Graph 14: Occupation of Immigrants by the Type of Job in the Czech Republic



Source of data:

“The number of foreigners on the labour market in the Czech Republic is rapidly increasing. Gradually changes the qualification structure of employed immigrants. Over the years, there is an increasing number of settlers who perform the labour market for skilled labour. EU citizens are usually employed on the skilled positions. Their number continuously increases, but at the same time, from another hand, the number of foreigners from third countries increases even faster, who are mainly employed in low-skilled positions (Horáková, 2009).”

Undoubtedly, the research proves that immigrants compensate the workforce demand on the Graph 14 in exact job vacancies spheres where higher labour shortage occurs, Picture 2. The Czech Republic uses newcomers the system which does not increase an unemployment rate “despite the popular belief that a new wave of immigrants will increase unemployment, the National Institute of Economics and Social Research says there is no aggregate impact of migration on unemployment (L.C., 2013).”

Immigrants only fill in the job vacancies which are not in high demand between the Czech citizens.

5. Conclusion

Considering everything, immigrants have a positive influence on the Czech Republic labour market. Settlers fill in the shortages in the workforce and artificially raise the national demographics becoming citizens of the Czech Republic supporting the local economy, paying taxes and increasing the country's population and indirectly influencing the Czech GDP.

Globalisation does increase the level of migration around the world. The destinations of migration are generally chosen by the differences in the wage that could be earned and the cost of living, so emigrants move from a country with a lower average real income per person, to a destination he or she assumes as a place with a higher wage, whether this comes from income or social security payments as well social amenities. These are the factors which pull as towards immigrating to a country. Travel and living costs act as factors which stop people from immigrating to countries even though they may have better social conditions.

Reunification of the family increases the inflow of co-ethnics to the same destination in long-run migration.

All these factors are present and identify the typical immigration groups that have the highest incentives to relocate to the Czech Republic, such as Ukrainians, Vietnamese and Russians.

Slovaks are also migrants to the Czech Republic but for different reasons. They share a common culture, language and history, family links are close as well.

This research is important for the ministry of the interior of the Czech Republic, where the specialists can see the evidence of the benefits that settlers bring to the labour market. Undoubtedly, the volume of migration must be restrained and analysed quarterly in order to control immigrants' influence on the economy, so positive effects are not misrepresented as negative.

The topic of the influence of immigrants to the Czech Republic has been examined from different angles, so the reader can see the real impact of settlers on the Czech economy. This research assists in breaking the delusions about the harmful impact of immigrants on any economy, in this case however it is focused on the Czech Republic. Checking the sources and books about the economic influence of immigrants in the Czech Republic, a lack of study and research has been discovered: "It is fair to say that the field of economics has not paid nearly enough attention to the phenomenon of immigration. This is somewhat puzzling given that the subject of "globalisation" permeates many fields, including economics, business, sociology, political science, and anthropology. In the research, writing, and teaching of international economics, only two of the three categories of international economic activity are prominently covered: international trade and investment (Bodvarsson & Van den Berg, 2009)".

This research could be the one of the first steps to encourage economists to continue the research the problems of migration.

Detailed research must be done on the topic of international migration, as it is a huge factor which influence global and the domestic economy, the level of prices and the labour market. The inflow of foreigners should be stimulated as they can reduce labour shortages.

The biggest need in the labour market is in the real estate activities on the Czech labour market (Czech Statistical Office, 2013). The real estate activities include purchasing and reselling owned real estate, letting and management of owned or leased real estate or activities for a third party that include the activities of real estate agencies and the activity of administering real estate (Farlex, Inc., 2013). The need can be reduced using a foreign work force.

“Immigration has very little effect on destination country labour markets. Immigration tends to be complementary to most categories of labour, and even in the cases where immigrants are substitutes for domestic labour the wage effect is negative but small. The owners of business and capital are also complementary to immigrant labour and are, therefore, positioned to gain from immigration (Bodvarsson & Van den Berg, 2009).”

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