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Abstract:

Migration of population has been a significant feature of the international economy for a long time. It is an important source of income, foreign exchange and workforce for a large number of economies. The most studies dealing with the international migration consider it as efficient instrument for developing countries, because inflow of money (through remittances) has a positive impact on their economy. However, on the other hand, economically developed countries are threatened by outflow of money abroad. From this perspective, remittances may have negative consequences on the economy. This issue connected with remittances is very often neglected. The Czech Republic and most developed European countries are the immigration countries. It means that many foreigners come here because of work or study, especially from non-EU countries. The paper focuses on rarely discussed issues of migration standing on the border between demographics and economic statistics. It deals with positive and negative aspects of labour immigration with the specific focus on foreigners' behaviour – incomes, expenditures, savings and remittances. It is aimed to determine specific impact of migration and remittances on the economy of the Czech Republic.

Keywords: foreigners, labour market, migration, remittances

JEL Classification: F22, F24, J61

1. Introduction

There can be found a lot of analyses of labour and workforce in the Czech Republic but usually seen as a factor of production¹. Workforce or labour inputs can be analysed from different perspectives ranging from discussion about quantity, quality, sex, citizenship, *etc.* We deliberately focus on labour of foreigners (immigrants with foreign citizenship) as a source of labour for Czech economy with respect to several categories.

Several years ago the Czech Republic became one of the countries to which a considerable number of migrants come every year in search of work. The issue of immigration including the ethnic composition and behaviour of foreigners living and working in the Czech Republic became very important. Immigrants' economic behaviour covering income, expenditures and savings represents usually key determinants of purpose of their stay in the Czech Republic. Besides, immigrants' ties to their home country influence their economic

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1 Details can be found in Sixta *et al.* (2011).

behaviour, as well. A significant part of labour migration is connected with sending earned money to their families in the form known as remittances. Therefore, it is important to focus on the remittances; estimates of money outflow from the Czech Republic. In general, it is clear that higher level of immigration means higher money outflow from Czech economy.

As it has already been noted, the most of studies deal with the impact of migration and remittances on developing economies. This paper introduces the other side of this issue. It deals with the model of migration and remittances. We focus on the issue of positive or negative impact of remittances in terms of developed country. Evaluation of the impact on labour migration and remittances on economic situation² of the Czech Republic is presented with specific focus on the influence of particular groups of immigrants (by length of stay, economic activity or citizenship). For such evaluation we use the data from the Czech Statistical Office (CZSO)³. We present the unique model of migration that we helped to develop for the use of the CZSO.⁴

2. The Importance of Migration and Remittances

Generally, there are many reasons for migration – *e.g.* environmental change or climate variability, policy, war conflict, loss of housing options (construction of dams, urbanization), education or work (Stojanov *et al.*, 2011). Labour migration is one of the most common reasons for leaving the country of birth. It is caused by the differences between income levels in particular countries. Lucas (2005) finds the links between the international migration and economic development in the lower income countries. People from these countries migrate for work to developed countries and many of them send earned money back to their country of origin to their families and relatives. Such migrants' transfers of money are known as remittances. Labour migration may have both positive and negative impacts on the economy of the host economy. The majority of studies indicate that immigration may contribute significantly to economic growth in the host country (*e.g.* Lucas, 2005 or Park, 2007).

The international migration can be considered as a solution to the problem of population declines and demographic aging (Burcin *et al.*, 2008). The not very high level of fertility as well as the slight linear growth in the average length of life causes the aging of population in most European developed countries including the Czech Republic (Fiala, Langhamrová, 2013). The aging of the population and the rising proportion of senior citizens will understandably cause growth of the economic burden on the pension insurance system. The productive population will have to ensure sufficient resources for persons of pension age and the changes in age structure will cause imbalance between what the productive population earns and what the post-productive population receives (Šimková, Sixta, 2013). The fiscal consequences of immigration are positive in particular in connection with the

2 We deal with the outflow of money abroad in this paper; therefore we only mention remittances going from the Czech Republic to foreign countries. There are a lot of other impacts like dividends, interest, *etc.*, that form the difference between gross domestic product and gross national (disposable) income (Fischer, Sixta, 2006 or Hronová *et al.*, 2009).

3 This source is unique in its own way, because it combines all data about foreigners from various administrative sources and moreover it estimates some groups of foreigners, which are not determined from administrative sources.

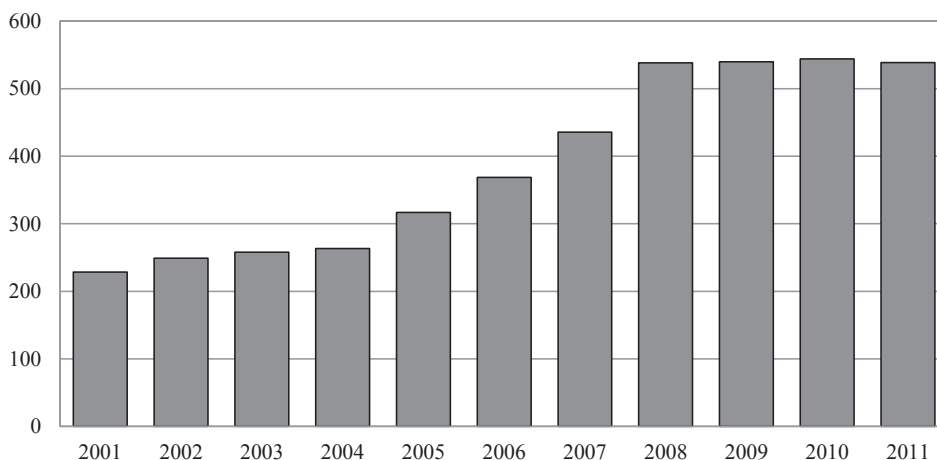
4 We have to thank the Czech Statistical Office for the availability of data.

role of the social security system within the framework of the aging of the population, as the immigrants pay social insurance here, the rates of which would otherwise have to be increased considerably due to the growing number of persons of pension age and the declining number of persons of productive age (Arltová *et al.*, 2013). On the contrary, some studies (*e.g.* Park, 2007) draw attention to the fact that immigrants may be taking jobs away from native workers, especially those who are young and have low skills. Among the general public there are often also widespread fears that the birth rates of immigrants are too high.

In the Czech Republic, in fertility and migration there have been marked changes in trend in the last twenty years. In the second half of the nineties of the last century there was a sharp drop in fertility, which, although it rose again slightly later, at present indicates the stagnation of the development of fertility at a level not guaranteeing the simple reproduction of the population (Arltová, Langhamrová, 2010). Even greater changes are taking place in the development of migration. During the nineties the migration increment was around 10,000 persons a year, in the years 2007–2008 it rose to as much as 70–80,000 persons *per annum*, but then it dropped again to less than 30,000 and in 2012 was only just over 10,000 persons in the year. It is difficult to forecast the development of migration in the future – according to the latest projection of the CZSO it is expected that there will continue to be a positive migration balance in the next few years. It means that the Czech Republic will continue to attract migrants, at a level between 9,000 and 12,000 persons a year (CZSO, 2013b).

Figure 1 shows the number of immigrants with foreign citizenship from 2001 to 2011. Nowadays the Czech Republic has according to the CZSO estimation 538,391 immigrants with foreign citizenship, which is twice more than ten years ago.

Figure 1 | Number of Immigrants with Foreign Citizenship in 2001–2011 (1,000 persons)



Source: data from the CZSO

The numbers of migrants needed to compensate the decline in the productive population are high. If a larger number of immigrants is within the possibilities of the state, it depends to a considerable extent on the social, economic and political circumstances of the given country or region (United Nation, 2000). According to the study by Equeter (2002) it would be necessary to attract almost 80 million workers to European countries by 2050 in order to maintain the size of the potential workforce and around 700 million migrating workers to maintain the balance between the productive and non-productive populations. According to Muysken (2008) immigration alone cannot maintain the stability of the productive population; it is also necessary to raise the level of participation in the labour market, especially at a greater age.

The study of Djacic (2004) indicates remittances as source of improvement of the standard of living reducing the risk of poverty. Remittances can be tracked from both the micro-economic and the macro-economic viewpoint. From the point of view of the micro-economic remittances have a positive impact on the utility function as the migrant takes care of the consumption of his household in his home country (Schiopu, Siegfried, 2006). Macro-economic studies, on the other hand, emphasise factors such as the level of economic activity of the host country and the country of origin, wage rates, inflation or the efficiency of the banking system (El-Sakka and McNabb, 1999). Buch and Kuckulenz (2004) found that economic growth and the level of economic development do not have a clear impact on the size of remittances of the country. The flow of remittances is positively influenced by the real wages of the workers and the overall number of migrants in the host country but remittances may, on the contrary, be lowered by such things as demographic factors like the proportion of women employed or a high age index in the host country.

3. Data Sources

Our model of migration and remittances is based on the CZSO model that is used to quantify the financial transactions between the Czech Republic and the rest of the world, which are recorded in the national accounts and balance of payments. The CZSO partly uses this model for some time, we currently further develop and improve some calculations.

The primary step in calculations was to find correct number and structure of foreigners in the Czech Republic. From the behaviour and activity of foreigners it is possible to derive estimates of the level of incomes, expenditures, savings and remittances. The level of the incomes of foreigners depends on their type of activity. The migrants also must be distinguished by the length of stay for correct capturing and quantifying all of accompanying flows. Expenditure on final consumption depends on the income level and on the length and purpose of their stay.

We distinguish (according to current national account standard ESA 1995) the residents (economic subjects, living and working in the Czech Republic for at least one year or longer) and non-residents (economic subjects, living and working in the Czech Republic less than one year). The category of non-residents also includes the cross-border workers, seasonal workers, foreign students studying in the Czech Republic, foreigners working in the Czech embassies abroad. In the second phase the economic activity of foreigners is tracked as economically active (employees – legal, illegal and entrepreneurs) and economically inactive (students and others). Thirdly, foreigners are tracked according to their country of origin.

The data about immigrants with foreign citizenship come from few independent administrative sources. The number and structure of foreigners is unfortunately not recorded in a uniform manner and so no database exists that would collect all the information about foreigners. The solution to record the number of foreigners in the Czech Republic is thus to use four basic administrative sources:

1. The Ministry of the Interior (MOI) – records of the Alien Policy of the total number of foreigners according to length of stay;
2. The Ministry of Labour and Social Affairs (MLSA) – records of the work permits issued by the Labour Offices;
3. The Ministry of Industry and Trade (MIT) – records of trade licences;
4. The Ministry of Education, Youth and Sports (MEYS) – records the numbers of students with foreign citizenship.

Our model of migration is based on the balance equations with respect to economic activity. The knowledge of the total number of foreigners broken down by the length of stay from MOI makes possible the division of the group into foreign residents and non-residents. Then we can estimate the number of economically inactive residents by difference between the total number of foreign residents, the number of legal employed residents (from MLSA) and entrepreneurs (from MIT). The calculation of economically inactive non-residents is based on similar procedure. At first, it has to be estimated the number of illegal employees⁵. The economically inactive non-residents include the foreign students and others inactive persons (*e.g.* housewives). The number of other economically inactive non-residents is calculated as a difference between the numbers of the total foreign non-residents and economically active non-residents and foreign students (from MEYS).

4. Description of the Model

The outflow of money influencing the economy of host country (known as remittances) differs according to the economic activity and length of stay of the foreigner. In this paper we use the definition of the International Monetary Fund (IMF, 2009). The IMF's manual determines remittances as the sum of two items of the balance of payments:

- Revenues earned by workers in economies without permanent residency (eventually from employers residing abroad).
- Transfers from residents of one economy to residents of other economies.

According to this definition, the remittances of foreign non-residents equal the total revenues, *i.e.* earned incomes after deduction of consumption expenditures. We can call this item the savings of foreigners. Our estimation of remittances of foreign residents in the Czech Republic is based on the Research Project of the Institute of Sociology of the Academy of Sciences of the Czech Republic (ISAS)⁶. This project was conducted in 2010 with financial assistance of the CZSO. It was focused on labour migration, incomes,

5 Estimates of illegally employed foreigners are based on the results of inspection performed by controls at employers employing foreigners in the co-operation among Employment Bureau, Alien Policy Inspectorate and Customs Offices (MLSA, 2011).

6 For more see Leontiyeva, Tollarová (2011)

consumption expenditures and remittances of several nationalities in the Czech Republic⁷. On this basis, we created the groups of countries representing clusters with similar behaviour in terms of incomes, consumption and remittances. The amount of remittances is estimated as a percentage of net income. Thus, the basis for the calculation of economic behaviour and remittances of residents and non-residents in our model is the net wage. The amount of foreigners' income depends on type of their activity, whether they are employees or entrepreneurs, whether they work legally or illegally. The gross wage of employees is estimated with the aid of statistical investigations carried out for the CZSO by the private company Trexima. This company provides data on the average wages of the most common state nationalities in the Czech Republic. This investigation does not, however, differentiate the type and length of stay. The net wage is calculated from the gross wage by deducting taxes and social contributions:

$$NW_i = WS_i - (TI_i + ESC_i) \quad (1)$$

where

- NW_i the net wage of employees (residents and legally employed non-residents),
- WS_i wages and salaries,
- TI_i taxes on income,
- ESC_i employees' actual social contributions and
- i index for country.

The net wage of an illegal employee is equal to the gross wage because no taxes and contributions are deducted. It may be assumed, however, that an illegal employee receives from the employer a wage reduced by the amount of the taxes and contributions. We assume that a person working illegally receives a wage that is on average 25% lower than that of a legal worker.

The net wage of foreign entrepreneurs is estimated by net lending and borrowings of the entrepreneurs' sub-sector. This is net income, which entrepreneurs have at their disposal for their personal expenses and for possible transfer of money to their country of origin (Ondruš, 2009). It is based on following:

$$NLB_i = ANLB \cdot E_i \cdot c \quad (2)$$

where

- NLB_i net lending (+) / borrowing (–) of entrepreneurs,
- $ANLB$ the average net lending (+) / borrowing (–) of entrepreneurs,
- E_i the number of entrepreneurs,
- i index for country and
- c the coefficient of ratio of the earnings of Czech entrepreneurs to earnings of foreign entrepreneurs.

This coefficient c is expertly estimated and the level differs according to the type of country. It usually applies that net lending/borrowings of foreign entrepreneurs are slightly higher than those of Czech entrepreneurs.

⁷ Ukraine, Russia, Vietnam, Moldova and the countries of the former Yugoslavia

The estimation of consumption expenditures of foreigners we based on the Czech households' expenditure consumption broken down by CZ-COICOP classification groups and subsequently the figures are adjusted individually for each group of countries:

$$CE_i = \sum CE_c \cdot r \quad (3)$$

where

CE_c consumption expenditures broken down by CZ-COICOP

r the coefficient of ratio of the expenditures of Czech consumers to expenditures of foreign consumers.

We adjusted coefficients for the calculation of final consumption of foreign non-residents on the base of the survey of ISAS (mentioned above)⁸.

The amount of the remittances of foreign non-residents is equal to their total savings; all the remaining means earned, left to foreign non-residents after deducting their consumption expenditures, go back to their country of origin. Remittances are therefore equal to the net wages reduced by their consumption within the Czech Republic:

$$R_i^{(non-res)} = S_i = NW_i - CE_i \quad (4)$$

where

$R_i^{(non-res)}$ remittances of non-resident employees sent to country i ,

S_i savings,

NW_i net wage,

CE_i consumption expenditures and

i index for country.

As mentioned above, we estimate the amount of remittances of residents directly with the use of a Research Project of ISAS. According to the project, the percentage of remittances and the percentage of material gifts from income, which foreigners send to their country of origin (to their families and relations), was estimated. The level of remittances of employed foreign residents and entrepreneurs then equals:

$$R_i^{(emp)} = NW_i \cdot (r + g) \quad (5)$$

$$R_i^{(ent)} = NLB_i \cdot (r + g) \quad (6)$$

where

$R_i^{(emp)}$ remittances of resident employees sent to country i ,

$R_i^{(ent)}$ remittances of entrepreneurs sent to country i ,

NW_i net wage,

NLB_i net lending(+)/borrowing(-) of entrepreneurs,

r the percentage of cash remittances from income,

g the percentage of gifts sent from income and

i index for country.

8 Because it is difficult to survey the consumption survey the consumption and the size of sample is relatively small, it does not enable to use the data in absolute values. Therefore we used data from survey in relative expression and we use the structure of consumption by countries for modification of final consumption of Czechs from survey.

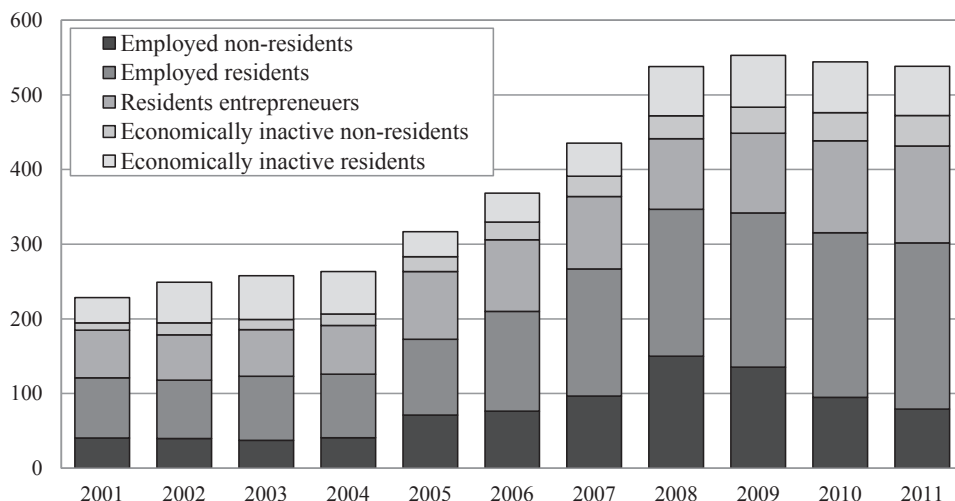
5. Foreigners in the Czech Republic in the Period 2000–2011

For describing labour migration and subsequent determining the impact of remittances of Czech economy we focus on the currently structure of foreigners by length of stay, economic status, citizenship, age. This structure is important for determining the positive and negative aspects of labour migration in the Czech Republic.

The number of immigrants in the Czech Republic is relatively low. According to the calculations using various administrative sources there were approximately 538,000 foreigners in the Czech Republic in 2011, which expressed in relative terms is 5% of the total number of inhabitants. 80% of foreigners are working, therefore the main reason for migration to the Czech Republic is indisputably migration for work. An integration of family, permanent settling or study represent other reasons for migration.

The number of foreigners in the Czech Republic increases – in the period 2001–2011 it increased more than two times. The proportion of employed foreigners in the total number of foreigners is still at the same level. The highest proportion represents the group of employed residents (see Figure 2). As mentioned above, labour immigration is important for ensuring stability of number of productive population. For ensuring long-term stability in connection with aging of productive population we need especially permanent immigration.

Figure 2 | Numbers of Foreigners according to Length of Stay and Economic Activity (2001–2011, 1,000 persons)



Source: data from the CZSO

The composition of foreigners by nationality and length of stay is interesting and important for determining the amount of remittances. The majority of nationalities come to the Czech Republic only to work, without family and not even planning to start a family here. We can expect that the highest amount of remittances is sent just from these immigrants. In case of longer stay in foreign country the probability of sending remittances reduces. According to Leontiyeva and Tollarová (2011) immigrants with short-term visa or long

stay send remittances significantly more often than persons with permanent residency in the Czech Republic. Permanent residents have more often close family members in the Czech Republic, so their links with the country of origin are weaker.

The following tables (Table 1 and Table 2) show the ten most numerous nationalities in the Czech Republic from the viewpoint of length of stay and economic activity. The largest number of immigrants has the Slovak nationality. In 2011 there were 117,858 persons from Slovakia in the Czech Republic for more than one year and 30,336 persons for less than one year. Their most frequent status was employee or student. The second largest group of foreigners comes from Ukraine. Great percentage of persons from Ukraine also does business here, as do people from Vietnam.

Table 1 | Structure of Resident Foreigners by Economic Activity (2011)

Residents	Total	Entrepreneurs		Employees		Economically Inactive	
Slovakia	117,858	11,039	9.4%	98,775	83.8%	8,044	6.8%
Ukraine	92,868	46,598	50.2%	33,151	35.7%	13,119	14.1%
Vietnam	55,671	37,669	67.7%	2,276	4.1%	15,726	28.2%
Russia	24,355	6,377	26.2%	11,666	47.9%	6,312	25.9%
Poland	22,327	1,665	7.5%	18,181	81.4%	2,481	11.1%
Germany	13,941	3,974	28.5%	7,421	53.2%	2,546	18.3%
Bulgaria	8,756	1,094	12.5%	6,127	70.0%	1,535	17.5%
Moldova	6,087	2,593	42.6%	2,813	46.2%	681	11.2%
United States	4,534	1,391	30.7%	1,912	42.2%	1,231	27.2%
China	4,026	505	12.5%	2,191	54.4%	1,330	33.0%

Source: own calculation based on data from the CZSO

In almost all selected nationalities there is a majority of employees or entrepreneurs (see Table 2), with only a small proportion of economically inactive persons (these are mainly the family members). The exception represents the immigrants from China and Vietnam often migrating with their entire families. The employing of foreigners can be seen mainly in manufacturing industry, construction industry and trade. The high number of illegally employed workers is characteristic for foreigners' groups of Ukraine, Moldavia and China.

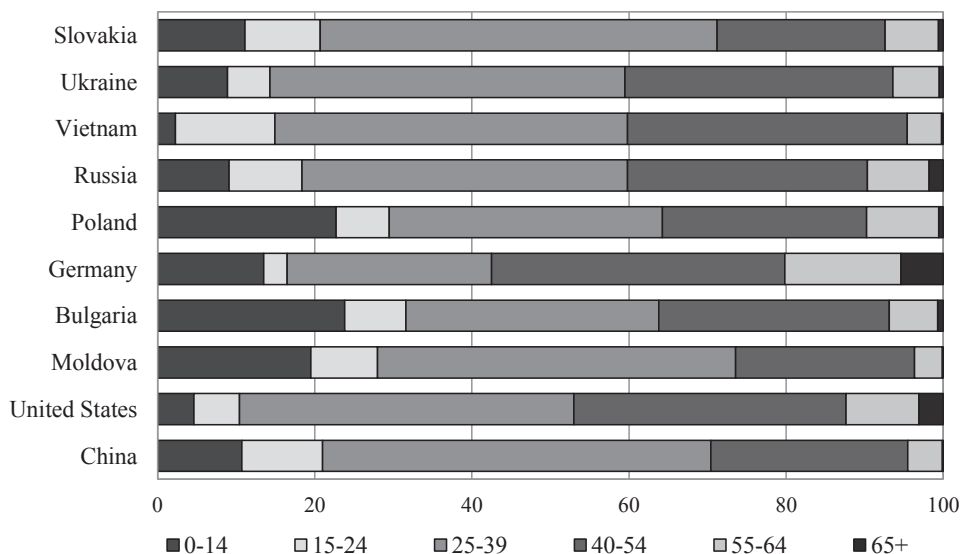
Table 2 | Structure of Non-Resident Foreigners by Economic Activity (2011)

Non-residents	Total	Employees				Economically Inactive			
		Legal		Illegal		Students		Others	
Slovakia	30,366	5,012	16.5%	0	0.0%	25,354	83.5%	0	0.0%
Ukraine	43,176	19,874	46.0%	21,470	49.7%	1,166	2.7%	666	1.5%
Vietnam	3,610	1,277	35.4%	1,372	38.0%	865	24.0%	96	2.7%
Russia	9,584	3,210	33.5%	3,466	36.2%	1,900	19.8%	1,008	10.5%
Poland	1,275	890	69.8%	0	0.0%	385	30.2%	0	0.0%
Germany	802	407	50.7%	0	0.0%	395	49.3%	0	0.0%
Bulgaria	931	764	82.1%	0	0.0%	167	17.9%	0	0.0%
Moldova	3,215	1,469	45.7%	1,580	49.1%	106	3.3%	60	1.9%
United States	1,519	1,055	69.5%	0	0.0%	384	25.3%	80	5.3%
China	2,064	904	43.8%	973	47.1%	95	4.6%	92	4.5%

Source: own calculation based on data from the CZSO

Figure 3 shows the age composition of foreigners in the Czech Republic. Unfortunately there are no separate data available apart for residents and non-residents. There is a significant prevalence of persons in economically active age, *i.e.* 15–64 years and only minimal representation of foreigners aged over 65 years. The exception is only immigrants from Germany, which are Sudeten Germans, settled in border regions.

Figure 3 | Age Structure of Foreigners by Specific Age Groups (2011, %)



Source: CZSO 2012a, CZSO 2012b

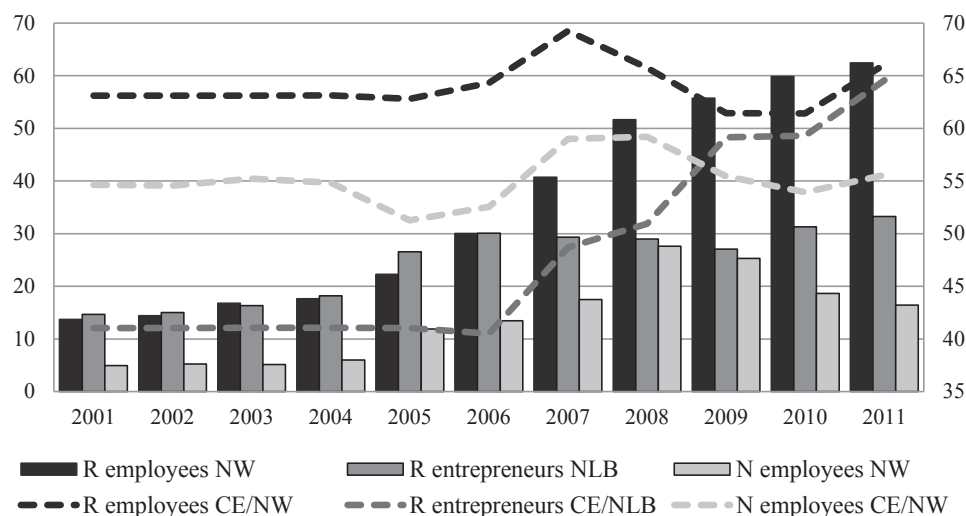
Immigration from Eastern European countries has so far mostly long-term character. The residency of the Vietnamese, on the other hand, is usually more permanent. Perhaps therefore they have the greatest proportion of born children. In 2011, the greatest proportion of children (almost 36%) was born to foreigners from Vietnam. The second highest proportion of children (29%) was born to immigrants from Ukraine; the third highest proportion of children was born to Slovak immigrants (16.5%). The long-term or permanent migration with starting a family is important in terms of aging of population for ensuring the ratio between productive and post-productive population in the Czech Republic.

6. Economic Behaviour of Foreigners in the Czech Republic

There is a significant group of foreigners who travel abroad to earn money and support their family at home. For example, the most of migrants from Ukraine are usually men with children and they are employed in the Czech Republic and they send money back home. They try to ensure a good standard of living for their families in Ukraine (Strielkowski, Weyskrabova, 2014).

Total income of resident employees from all countries Amounted to approximately CZK 62 billion in 2011, total income of non-resident employees amounted to CZK 16 billion and net lending/borrowing of entrepreneurs was CZK 33 billion in 2011. Since 2001 the net income of foreign worker has been increasing, whereas the greatest growth was recorded at resident employees, their income increased 4.5 times in ten-year period (see Figure 4).

Figure 4 | Net Income and Proportion of Consumption Expenditures on Net Income (2001–2011 CZK million)



Note: R = Residents, N = Non-residents, NW = Net wage, NLB = Net lending/borrowing, CE = Consumption expenditures

Source: own calculation based on data from the CZSO

Foreigners have to spend part of their earned money within the Czech Republic. The higher consumption within the Czech Republic means the lower outflow of money via remittances. Consumption expenditures of non-resident employees represent 55% of income. Resident employees consume more from income, around 65% of their income, because their primary aim is not sending money to their country of origin in comparison with non-residents. The proportion of consumption expenditures on income of resident and non-resident employees is still at the same level in the period 2001–2011. Different trend is observed for consumption expenditures of foreign entrepreneurs. While in 2001 they spent 41% from their income, in 2011 it was almost 60% of income.

As already mentioned, we assume the equality of remittances of foreign non-residents to their savings. Remittances of resident foreigners are estimated as a percentage of net income. Therefore we focus on amount of income of both residents and non-residents and moreover on consumption expenditures of non-residents. Table 3 and Table 4 describe the amount of incomes of the ten most frequently nationalities of residents and non-residents in the Czech Republic.

Table 3 | Income of Resident Employees and Entrepreneurs (2011, CZK million)

Residents	Employees				Entrepreneurs
	Wages and Salaries	Social Contributions	Income Taxes	Net Wages	Net Lending/ Borrowing
Slovakia	35,874	3,946	4,875	27,053	2,733
Ukraine	7,867	865	797	6,205	11,540
Vietnam	494	55	45	394	9,328
Russia	5,471	601	823	4,047	1,580
Poland	5,118	563	598	3,957	413
Germany	6,115	674	1,054	4,387	1,477
Bulgaria	2,011	221	259	1,531	271
Moldova	668	73	68	527	642
United States	1,575	173	272	1,130	517
China	416	46	32	338	124

Source: own calculation based on data from the CZSO

Employees from Slovakia form the largest immigration group among employed residents, therefore their total earnings are highest. In 2011 their total income was CZK 27 billion. In the case of foreigners doing business on the territory of the Czech Republic, entrepreneurs from Ukraine and Vietnam earn the highest amount of money. Total net income of all foreign residents (employees and entrepreneurs) represented CZK 105 billion in 2011. Non-resident employees earned almost CZK 17 billion in 2011. The highest share in total earnings had Ukrainian citizens. The lowest impact on Czech economy has Vietnamese and Chinese citizens in terms of outflow of money abroad. Vietnamese and Chinese citizens spend the highest proportion of their net income within the Czech Republic.

Table 4 | Incomes and Consumption Expenditures of Non-Resident Employees (2011, CZK million)

Non-residents Employees	Wages and Salaries	Social Contributions	Income Taxes	Net Wages	Consumption Expenditures
Slovakia	1,638	106	210	1,322	696
Ukraine	8,066	275	383	7,408	4 762
Vietnam	473	16	19	438	300
Russia	2,573	89	196	2,288	772
Poland	226	15	24	187	101
Germany	302	19	52	231	88
Bulgaria	226	15	27	184	84
Moldova	595	20	28	547	346
United States	782	50	133	599	239
China	292	10	9	273	209

Source: own calculation based on data from the CZSO

The following Table 5 shows the level of the remittances sent by residents and non-residents to the countries of the ten most important national groups of foreigners in the Czech Republic in 2011. The majority of remittance payments in 2011 went to Slovakia, Ukraine and Germany. After calculation of the level of remittances in relation to the average monthly income *per* person it appears that the highest remittances are sent by employed foreigners to Germany and to the USA, which are the only two Western countries represented. Migrants from these countries probably have higher salaries due to higher qualifications than those of migrants from Eastern countries. Migrants from China send the lowest amount of remittances. As mentioned above, Chinese citizens migrate to the Czech Republic most frequently with their close family, so the links with the country of origin are not so strong.

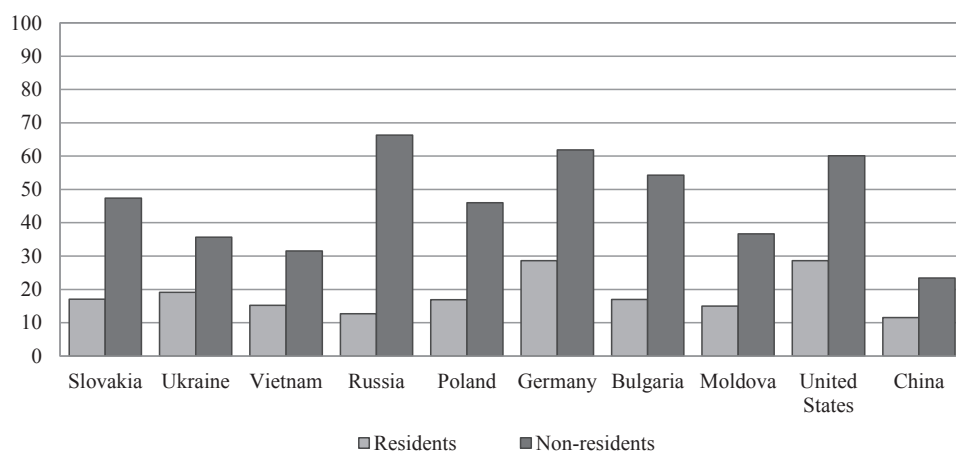
It should be taken into account that the amount and frequency of sending remittances depend on experiences, purpose and length of stay in the foreign country and also on link to the country of origin. The longer a person stays in a foreign country, the more the probability of sending remittances drops. Remittances are sent more frequently by migrants who have a short-term visa or long-term stay than by persons with permanent residence in the country concerned. Persons who are permanently settled in a foreign country more often have the close members of the family with them and their ties to the country of their birth are already weaker. The peak for remittances comes around the fifth year of residence, up to which time remittances increase, then after five years they drop. It is also probable that further generations will have a lower potential for the sending of remittances than the first generation of migrants (Stojanov *et al.*, 2011). Figure 5 also confirms this fact. Remittances calculated as a monthly sum are higher for persons working in the Czech Republic for less than one year than they are for working residents.

Table 5 | Remittances Sent Abroad by Residents and Non-Residents (2011)

	Resident Employees		Entrepreneurs		Non-resident Employees	
	CZK million	per person per month	CZK million	per person per month	CZK million	per person per month
Slovakia	4,616	3,894	465	3,510	626	10,408
Ukraine	1,186	2,981	2,206	3,945	2,646	5,333
Vietnam	61	2,233	1,401	3,099	138	4,341
Russia	515	3,679	201	2,627	1,516	18,924
Poland	675	3,094	69	3,453	86	8,052
Germany	1,257	14,115	423	8,870	143	29,279
Bulgaria	261	3,550	46	3,504	100	10,908
Moldova	79	2,340	96	3,085	201	5,494
United States	324	14,121	148	8,867	360	28,436
China	40	1,521	14	2,310	64	2,841

Source: own calculation based on data from the CZSO

The employees who are staying in the Czech Republic for more than one year sent abroad on average 19.6% of incomes. Germany and the USA represent exceptions because German citizens and American citizens send 28.7% of net income they earned in the Czech Republic. The group of ten nationalities of non-residents send abroad on average 46.3% of net income. Russian citizens send the highest amount of remittances in relation to net income (66.3%).

Figure 5 | Remittances in Relation to Net Income (2011, %)

Source: own calculation based on data from the CZSO

7. Impact of Migration and Remittances on Czech Economy

The total amount of money sent out of the Czech Republic came to approximately CZK 25.5 billion in 2011. In all 78% of the total remittances went to the countries of the ten most numerous foreign nationalities, which expressed in absolute terms were almost CZK 20 billion.

The initial hypothesis was, the higher the immigration means more money outflow from the economy. However, this hypothesis about negative influence of immigration in terms of remittances is not true in case of the Czech Republic (see Table 6).

Table 6 | Financial Behaviour of Foreigners in 2011 (CZK million)

	Non-residents	Residents	
	Employees	Entrepreneurs	Employees
Number of Foreigners	78,997	129,513	222,946
Wages and Salaries	18,529	x	82,933
Social Contribution of Employers	3,961	x	28,183
Compensation of Employees	22,490	x	11,116
Social Contributions of Employees	747	x	9,105
Income Taxes	1,333	x	11,383
Net Wage	16,449	x	62,445
Net Lending/Borrowing	x	33,238	x
Export of Goods and Services	9,143	x	x
Remittances	x	5,978	12,208
Savings (Remittances)	7,306	X	x
% of Remittances on Net Wage	44.4	18.0	19.6

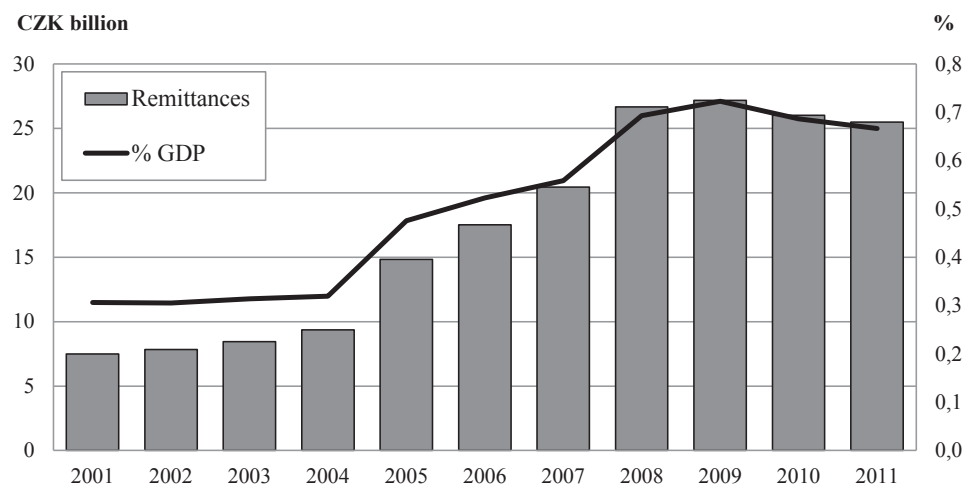
Source: own calculation based on data from the CZSO

Table 6 illustrates that foreigners consume the majority part of their earned money within the Czech Republic. Sent remittances of non-resident employees represent only 44.4% of their net income in 2011 and remittances of resident employees and entrepreneurs represent only 19% of their net income.

The outflow of money is lower in comparison with other developed European countries (see below), the Czech Republic is on the 31st place in the rank of sent remittances (The World Bank, 2013). Moreover, labour migration exists also in the opposite direction, from the Czech Republic abroad. According to the CZSO, Czechs migrate abroad rather for short-term work, therefore we can register the slight inflow of remittances to the Czech Republic.

Finally, we calculated the amount of sent remittances to the level of GDP to determine the significance of the impact of remittances on Czech economy.

Figure 6 | Total Amount of Remittances and the Share of Remittances in % of GDP (2001–2011)



Source: CZSO 2013a, own calculation

The total amount of remittances increased between 2001 and 2011 and also the share of remittances of GDP increased (see Figure 6). In 2001, it was sent 7.5 billion CZK, 0.3% of GDP. In 2011, remittances were approximately 0.7% of GDP. It is clear that the Czech Republic does not belong to countries where migration and remittances have a strong and negative influence. For comparison, it might be mentioned Luxembourg that is on the first place in the world; in 2011 remittances amounted to 19.3% of GDP. In the opposite direction, only less than 3% of GDP is flowing into the country (World Bank, 2013).

8. Conclusion

The economic development of the Czech Republic in the last 20 years was driven by many different factors. Czech economy substantially changed and there can be found a lot of explanations of these changes, see Singer (2013). Transformation, openness to the rest of the world, joining the EU and demographic changes set the foundation of future development. Significant enlarging of the length of human life, decrease the number of born children and similar aspects are slowly changing our society. Our population is aging and this demographic development will continue in following years. It is very important to create employment policies, pension policies and other policies and services to react to social and demographic changes. One of the main principles of such policy should include the effective migration policy. The model dealing with economic aspects of migration and remittances allow us capturing current structure of migration and economic activity and determine financial behaviour of immigrant with foreign citizenship including remittances.

Currently, the Czech Republic became an immigration country where foreigners form about 5% of the total population. The reasons for immigration to the Czech Republic are mainly connected with work. Some immigrants seek out this opportunity mainly to support their family in their home country. It might be seen that the higher level of immigration means more money sent abroad from the Czech Republic. Nevertheless, it is not entirely

true. The financial behaviour of immigrants depends not only on ties to the country of origin, but also on the length and purpose of their stay. Our research shows that ties to the native land weaken as the stay in the Czech Republic lengthens. Migrants with shorter length of stay (non-residents) send the most of earned money immediately home. But many of migrants settled in the Czech Republic send rather small amount of money to their country of origin.

Nowadays remittances represent 0.7% of GDP; the conclusion is that immigration to the Czech Republic does not have a negative influence with regard to remittances sent to the country of origin. On the contrary it has a positive influence – mainly because of work immigration that helps to find the balance between productive and post-productive populations.

The positive influence of migration on Czech economy should be increased. This strengthening can be achieved especially effective migration and integration policy. Effective policy should ensure that the Czech Republic will be the country of destination. Foreigners should become active members of society from legal, social, economic, educational and cultural aspects. Effective migration policy should include the support of the inflow of high-skilled foreign workers and the prevention of illegal immigration.

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