

## **THE CAUSES AND THE ECONOMIC IMPACT OF IMMIGRATION: EMPIRICAL EVIDENCE FOR LITHUANIA**

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### **-Abstract-**

During the last decade, Lithuania, as most other post-soviet countries, demonstrated severely high emigration rates. As a result, the process of emigration from the country is frequently analysed in empirical studies. Yet, there is a dearth of research on immigration in Lithuania, making it difficult to say anything about the effects. This paper is an attempt to fill this gap and to examine what exactly attracts immigrants in Lithuania and what is the impact that the immigration flows have on the Lithuanian economy. Two models describing the causes of immigration were constructed: one – for the situation before the financial crisis, another one – after it. In order to determine economic impact of immigration on Lithuanian economy some new information was developed, by checking how (if) the main economic indicators are influenced by the growing extent of immigration.

**Key words:** immigration, repatriation, labor market, economic indicators, econometric model.

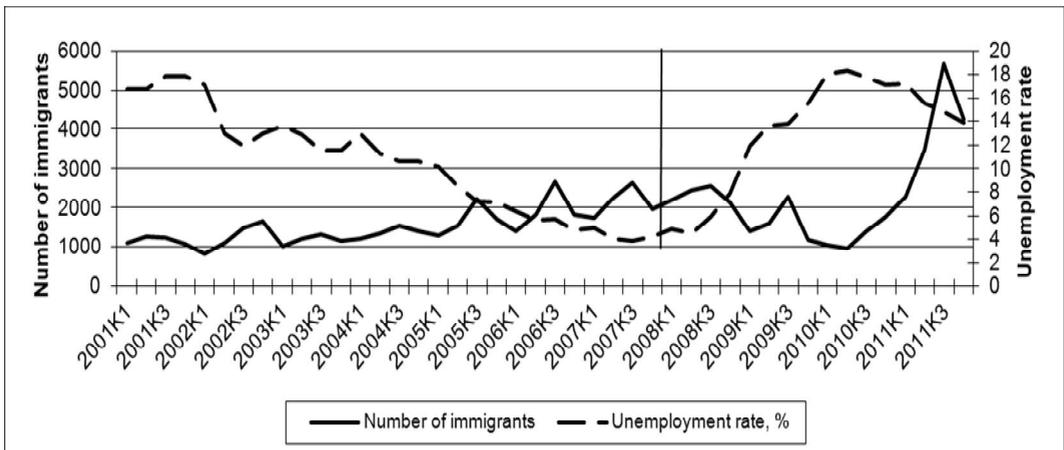
**JEL Classification:** J61, J11, J23, J31.

## 1. INTRODUCTION

There is a lack of information on the extent of immigration in Lithuania from the restoration of independence in 1990 till May 2004, when Lithuania joined the EU. The main source of information on the process of immigration in Lithuania is the chronicles prepared by the Lithuanian Department of Migration. Moreover, Lithuanian Social Research Institute prepared a number of articles regarding the extent of immigration in Lithuania. However, both institutions - Lithuanian Department of Migration and Lithuanian Social Research Institute – concentrate mainly on the trends of immigration rather than the causes and the consequences of this process.

The chronicles mentioned state that the number of immigrants during the period from the year 1990 to 2000 slightly increased (Lithuanian Department of Migration, 2004:18). A significant rise in the extent of immigration was observed from the year 2004 until the year 2008, when the country faced severe economic difficulties. Nevertheless, the largest number of immigrants was observed during the years 2010 – 2011 (see Fig. 1).

**Figure-1: The number of immigrants and unemployment rate, Lithuania, 2001 – 2011**



Source: Lithuanian Department of Statistics data (2012), authors' calculations.

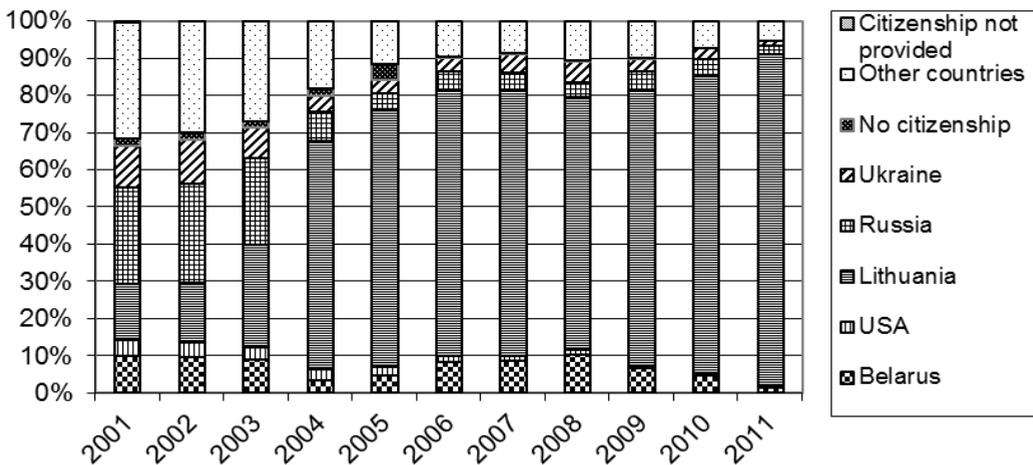
Figure 1 reflects the changes in the extent of immigration in Lithuania associated with the level of unemployment. The continuous rise, which can be seen during the year 2004 – 2008, is explained by the increasing pace of economic growth and

positive public expectations, coherent with the opportunities provided by the European Union and the Schengen Area.

In 2009, the extent of immigration fell to the level of the year 2005. This drop was mainly caused by the economic crisis in Lithuania: the reduced living standards, rising unemployment, stagnant construction and real estate sectors.

Increasing steam of the immigrants in 2010 and 2011 is mainly determined by the significant growth of the number of repatriating Lithuanians (see Fig. 2).

**Figure-2: Immigrants by their citizenship, Lithuania, per cent in total number of immigrants, 2001 – 2011**



Source: Lithuanian Department of Statistics data (2012), authors' calculations.

A possible cause of repatriating Lithuanians since 2004 is the fact that in 2004 Lithuania has adopted the EU legislation, which enabled the free movement of EU citizens among the EU countries. In addition, during the period of rising economy a fair amount of Lithuanians working abroad decided to return to the native country with evolving and growing economy. The literature suggests that migration is temporary, when the gap between income per capita in the migrant's home and residence countries decreases by 30-40% (International Organization for Migration, 2010:119).

The high extent of repatriation during may no longer be associated with the economic changes in Lithuania. More likely it is determined by the on-going global economic and social processes, such as recession, rising unemployment,

and the attitude towards immigrants in the former residences of repatriated Lithuanians.

The total immigration flow from non-EU countries is mainly consisted of Russians, Belarusians, and Ukrainians (approximately 50% of the total immigration from non-EU countries was Russian citizens, 23% - the citizens of Belarus, 12% - Ukrainian citizens) (Lithuanian Department of Statistics data, 2012). After Lithuania joined the EU new labour related migration patterns from China and Turkey are identified.

## **2. ECONOMIC CAUSES AND CONSEQUENCIES OF IMMIGRATION IN LITHUANIA**

### **2.1. Analysis of the causes of immigration**

In order to define what causes the changes in the flows of immigration in Lithuania, the econometric Autoregressive Distributed Lag model (ADL) was built. This model is commonly used in order to examine the links between certain macroeconomic indicators.

According to the neoclassical theory of economics the dynamics of immigration should be determined by gross domestic product (GDP), employment rate, and average wages in the country of immigration (Massey, 1993:315). Therefore, it was decided to investigate the effects of these three variables to the analysed process. The quarterly data of Lithuanian Department of Statistics was used for the creation of the model.

The direction of trends of immigration in Lithuania mentioned above changed significantly after the financial crisis hit the country. As a result, to make the research more informative, it was decided to build two models: one – describing the causes of immigration before the financial crisis, and another one – after it.

Before creating the model itself, a couple of steps were made. Firstly, the first differences of the data were used. This step was necessary because only stationary data can be used for the creation of ADL model. Secondly, not only the three previously described economic indicators were used. In order to make sure that no significant indicators were left out, the lags of the immigration itself were included while creating a model.

The model No. 1 (pre-crisis model) showed that with the confidence level of 99% it can be concluded that GDP was the only exogenous factor which caused the rising immigration flows in Lithuania before the financial crisis (see Table 1).

**Table 1: Model of the pre-crisis immigration in Lithuania**

	<b>Coefficient</b>	<b>p-value</b>
<b>GDP, LTL* mill.</b>	0.169182	0.0068
<b>Immigration lag 1, number of immigrants</b>	0.605868	0.0016
<b>Immigration lag 2, number of immigrants</b>	0.504173	0.0089
<b>Immigration lag 3, number of immigrants</b>	0.494471	0.0102

\*LTL - National currency Litas is pegged to the euro at the rate of 3.4528 to 1.

Source: Lithuanian Department of Statistics data (2012), authors' calculations.

It can be seen in the model that the lags of immigration itself had the biggest influence on the decision to immigrate in Lithuania. This result can be explained by the Migration Net Theory. This theory states that the flows of immigration are a self-generating process. The immigrants provide the information on the labor market situation, employment possibilities, wages, housing opportunities, etc. to the potential immigrants. In this way, a migration net is being formed (Castles, Miller, 2003:17).

The model No. 2, however, states a different situation (see Table 2).

**Table 2: Model of the post-crisis immigration to Lithuania**

	<b>Coefficient</b>	<b>p-value</b>
<b>Wages, LTL</b>	8.0392	0.0228
<b>Wages lag 2, LTL</b>	5.5483	0.0675
<b>GDP, LTL mill.</b>	0.3893	0.0037
<b>GDP lag 1, LTL mill.</b>	0.6449	0.0043
<b>Employment lag 1, %</b>	13.4407	0.0006
<b>Employment lag 2, %</b>	12.6586	0.0058

Source: Lithuanian Department of Statistics data (2012), authors' calculations.

This model suggests that during the global financial crisis the extent of immigration did not mean that much to the prospective immigrants any more. Possibility to get a job and the money to be earned became far more important.

## 2.2. The economic consequences of immigration

The relationship between economic situation and immigration is mutual meaning that the extent of immigration is being affected by economic factors in the receiving country and vice versa – the number of immigrants may affect the economic situation in the country. There are a number of articles analysing the possible results of immigration to various indicators of the welfare in the country (Brader, Valentino, Suhay, 2008:961). The most frequently emphasized indicators are listed hereunder: GDP, employment rate, average wages, the number of small business entities, criminality, and the yearly amount of unemployment relief paid by the government.

In order to determine the economic consequences of immigration, it was decided to check how (if) every of the factors mentioned above are influenced by the growing extent of immigration. The regression models were built showing the impact of immigration on every of the above listed indicators (see Table 3).

**Table 3: Immigration effect on Lithuanian macroeconomic indicators**

<b>GDP, LTL mill.</b>	<b>coefficient</b>	<b>p-value</b>
Immigration, number of immigrants	3.05926	0.0011
Immigration lag 2, number of immigrants	7.87493	0.0031
<b>Employment rate, %</b>	<b>coefficient</b>	<b>p-value</b>
Immigration, number of immigrants	0.000307	0.0457
<b>Average wage, LTL</b>	<b>coefficient</b>	<b>p-value</b>
Immigration lag 4, number of immigrants	-0.05376	0.0245
<b>Number of small business entities</b>	<b>coefficient</b>	<b>p-value</b>
Immigration lag 2, number of immigrants	1.66641	0.0131
<b>Unemployment relief, LTL mill.</b>	<b>coefficient</b>	<b>p-value</b>
Immigration, number of immigrants	0.08117	0.0254
Immigration lag 2, number of immigrants	0.08129	0.031

Source: Lithuanian Department of Statistics data (2012), authors` calculations.

As it was determined, immigration effect on Lithuanian GDP was significant (with the confidence level of 99%). Most likely, the result of this model can be linked with the labour shortage felt in Lithuania during the years of economic growth. Labour shortage means that the country cannot fully exploit its potential,

because there are not enough people that are able and willing to work. Consequently, a growing number of immigrants should increase the country's GDP, since the additional labour units produce extra added value (Moses, 2006:122).

On the other hand, during the times of recession in most of the countries there is a commonly known opinion that immigrants take away jobs from the local citizens and reduce the wages paid in the local labour market (Nazarovienė, Rastienienė, 2009:49). The model created states the opposite. It shows that immigration has a momentum effect on employment rate. It means that the increased number of immigrants increases the employment rate in Lithuania at the moment of immigration (confidence level of 95%). The model can be interpreted in a way that immigrants take existing job vacancies, and thus significantly increase the employment rate, instead of decreasing it.

However, the opinion on the reduced wages appeared to be truth. Therefore, with 97% confidence level it can be said that the process of immigration may reduce the wages paid in Lithuanian labour market during the period of one year.

One more negative opinion about immigrants is that they are likely to create the problems of crime in the country. Even though it is a common thinking in Lithuania as well (according to the research on Lithuanian citizens' opinion about labour immigrants) (Lithuanian Free Market Institute, 2010:21), the correlation test gave negative results meaning that there is no statistically significant relationship between these two rates. Therefore, this indicator is not included in the model presented in Table 3.

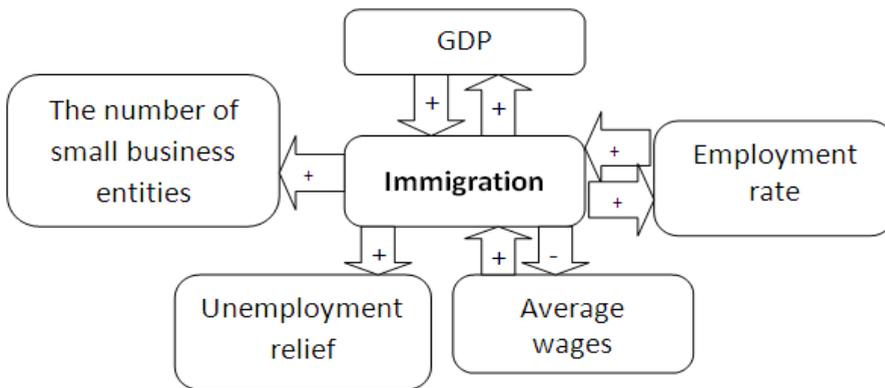
There are several studies claiming that immigrants often choose to establish their own business in the country they migrate to (Todea, 2010:45). The main reason of this trend is considered to be the fact that the person coming to live in a foreign country has different experiences and knowledge and can use it in establishing one's business. The main assumption of this model created was that immigrants most often create small businesses. Therefore, it was examined if the increasing number of immigrants increases the number of small business entities in Lithuania. As it can be seen in the Table 3, the model states that the mentioned studies are applicable to Lithuanian case as well (confidence level – 99%). The number of small business companies increases during half year after the immigration.

The last hypothesis made on the impacts of immigration was that growing immigration flows raise the amount of the total unemployment relief paid by the

government (Palokangas, 2008:15). This hypothesis is based on the opinion that during the times of recession immigrants become the burden to the country. The model created with the confidence level of 97% does not reject the hypothesis stated. It shows that increasing amount of immigrants increases the government expense on unemployed residents.

After studying the consequences of each of the variables individually a scheme, describing the overall impact of the process of immigration on Lithuanian economy, was built (see Fig. 3).

**Figure-3: Immigration impacts on Lithuanian economy**



Source: Lithuanian Department of Statistics data (2012), authors' calculations.

As it can be seen in the Figure 3, the rising extent of immigration raises the GDP, employment rate, the number of small business entities, and the unemployment relief paid every year by the Lithuanian government at the same time reducing the average wages paid in Lithuania.

However, being economically beneficial later immigration can destroy economic and social environment. This might be an important factor considering better management of migration processes in the migrants receiving country.

### 3. CONCLUSION

Since Lithuania joined the EU in 2004, there are important changes in immigration situation due to increasing number of immigrants from the third country nationals. The analysis of the structure of immigration reveals that Russians, Ukrainians, and Belarusians compose the majority of foreigners arriving in Lithuania. The rising flow of immigration in Lithuania during the last years is

mainly caused by the growing extent of repatriating Lithuanians. It is determined by the on-going global economic and social processes, such as recession, rising unemployment, and the attitude towards immigrants in the former residences of repatriated Lithuanians.

Two models on the causes of immigration in Lithuania were built: one – describing the situation before the financial crisis, and another one – after it. The pre-crisis model showed that GDP was the only significant exogenous factor which caused the rising immigration flows in Lithuania. The lags of immigration itself had the biggest influence on the decision to immigrate in Lithuania (Migration Net Theory).

The post-crisis model, however, stated a different situation. It showed that during the global financial crisis the extent of immigration did not mean that much to the prospective immigrants any more. Possibility to get a job and the money to be earned became far more important.

The models created for reflecting the impact of immigration on Lithuanian economy showed that immigration has a positive effect on Lithuanian GDP, employment rate, and the number of small business entities in the country. However, it reduces the average wage in Lithuania and raises the amount of the total unemployment relief paid by the government per year.

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