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**The impact of emigration on the competitiveness of the country:
the case of Lithuania**

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Abstract

Research background: Increasing flows of migration have not only positive, but also negative effects on economics, first of all, by causing substantial disproportions in the labour market. Lithuanian national economy has been hurt by excessive emigration rates. With reference to the projections of ‘Eurostat’ (2015, pp. 1-16), by 2060, Lithuanian population will have decreased by 1.8 million. Loss of such big quantities of the labour force is dramatically reducing competitiveness of the country. Although scientific literature is relatively rich in the studies on the links between emigration and general structural components of competitiveness, the current and plausible future impact of high emigration rates on the competitiveness of Lithuania has hardly been researched.

Purpose of the article: To assess the impact of emigration on the competitiveness of Lithuanian economics.

Methodology/methods: Comparative and systematic analysis of the scientific literature, correlation analysis.

Findings: It has been found that a substantial part of the indicators of Lithuanian competitiveness show different trends than those which are described in the scientific literature. This finding discloses the complexity of the situation in the country. It should be noted that although the country is losing its labour force, the rates of GDP per capita are increasing. This tendency can be explained by intensive flows of investment in R&D, i.e. the model of the country’s economy is being redirected from cheap labour to technology-based economy. Nevertheless, the situation in the country is worsened by sustainability of high unemployment rate and high risk of population’s poverty. Lithuania really needs to start caring about its demographic resources because in the future the trends of low birthrate and aging society will

ultimately cause the problems of social support and tax burden for the employed population.

Introduction

According to Weiss (2003, pp. 1-12), over the last few decades, the processes of globalisation along with advancement of technologies and communications have dramatically changed the processes of migration and determined the variety of territorial moves. Increasing flows of migration have had not only positive, but also negative effects: labour market disproportions undermine national economies with over-emigration or over-immigration. Lithuanian national economy has been hurt by excessive emigration rates. Following the projections of 'Eurostat' (2015, pp. 1-16), by 2060, Lithuanian population will have decreased by 1.8 million. Loss of such big quantities of the labour force is dramatically reducing competitiveness of the country.

The links between emigration and competitiveness were researched by Rudžinskienė and Paulauskaitė (2013, pp. 1-17), Civil Society Institute (2005, pp. 1-16), Kanopienė and Mikulionienė (2006, pp. 188-200), Sipavičienė and Stankūnienė (2011, pp.), Motieka *et al.* (2006, pp. 327-331), Karpavičius (2006, pp. 1-24), Campos-Vazquez and Sorbazo (2012, pp. 2-18), Barai (2012, p. 5-14), Giuliano and Ruiz-Arranz (2009, pp. 144-152), Verkhohlyad and McLean (2012, pp. 308-328) and others. Nevertheless, as competitiveness is a comparatively wide concept, the studies are often restricted with the analysis of one or several structural components of competitiveness. For instance, Civil Society Institute (2005, pp. 1-16) focused on the phenomenon of 'brain drain' and possible solutions to this problem; Kanopienė and Mikulionienė (2006, pp. 188-200) researched the problems of population ageing and health care; Karpavičius (2006, pp. 1-24) concentrated on the impact of emigration on Lithuanian economic and labour market indicators; more comprehensive studies on the links between emigration and competitiveness were conducted by Rudžinskienė and Paulauskaitė (2013, pp. 1-17), Damulienė (2013, pp. 106-118) and Motieka *et al.* (2006, pp. 327-331). Nevertheless, scientific literature does not contain many studies that would reveal how emigration may influence the competitiveness of Lithuanian economics.

The purpose of this article is to assess of the impact of emigration on the competitiveness of Lithuanian economics.

Research methodology

Considering topicality of the issue, the authors of this article will assess the impact of emigration on the competitiveness of Lithuanian economics.

For accomplishment of this aim, the correlation analysis, which will reveal interdependence between emigration rate and particular indicators of competitiveness, will be employed. Correlation analysis discloses the links which emerge as interdependence between random variables, i.e. it shows to which extent the changes in one variable determine distribution of the other. In accordance with direction of the relationship development, correlation can be treated as positive (direct) or negative (inverse). Positive correlation is the relationship when the values of the variables change in the same direction – increase or decrease. Negative correlation shows that the values of the variables change in different direction – when the value of one variable is increasing, the value of the other is decreasing, and vice versa (Gabrevičienė, 2012, pp. 5-122).

The statistical data for estimations was extracted from the database of Lithuanian Department of Statistics (2014, pp. 1-18).

The links between emigration and competitiveness

The impact of emigration on competitiveness of a country is assessed by employing different theories and methods, but in terms of the global economy, this process is considered as a positive mechanism which equalises labour market imperfections and surpluses, this way ensuring the balance and forming conditions for the overall wage and welfare rises (Damulienė, 2013, pp. 106-118).

The main positive effect of economic emigration is freeing of work places, which, in turn, increases the demand for labour force and allows the unemployed to occupy vacancies. The lack of labour force prompts employers to increase staff loyalty and improve work conditions: raise wages, employ motivation systems, etc. This way, the overall employment rate in the country rises along with the impact of social support. Growing employment rate determines higher life standards and increased consumption. The latter factor as well as the decrease in the total number of population in the country lead to the growth of GDP per capita. Another positive aspect is expectation that a part of emigrants will return to their country of origin with the money earned, and will contribute to domestic investment and consumption (Civil Society Institute, 2005, pp. 1-16). The main negative effect of emigration is decrease in the overall number of population: young

people make a part of the population that is most likely to emigrate; loss of young people leads to lower birth rate and faster pace of society aging. Lower number of the employed leads to reduction of contributions to the social insurance fund; as a result, one employed person has to maintain more unemployed people. Emigration of young families with children or emigration of families that have children in host countries reduces contributions of social insurance even further. The negative impact of the process of society aging is a growing need for health care and long term nursing, although economic costs of society ageing might be partly covered by the emigrants who transfer money to pay for the care of their elderly parents (Civil Society Institute, 2005, pp. 1-16).

Money transfers made by emigrants to the countries of their origin is one of the significant measures of the impact of emigration on the economics of a country. According to Giuliano and Ruiz-Arranz (2009, pp. 144-152), money transfers from abroad may have a number of short-term, long-term, microeconomic, macroeconomic and social effects. Nevertheless, it is important to note that these effects are more dramatic in developing rather than developed economies. The money obtained in the form of transfers can be used for individual needs (such as consumption, saving or investment) and state needs (for example, a state charges taxes for money transfers, and later the funds can be used for various public purposes). This approach is based on the presumption that the taxes charged for money transfers will be used for building of infrastructure or spent on creation or maintenance of various kinds of public goods, which, in turn, will reduce poverty in the country and raise population's life standards.

Assessment of the impact of emigration on the indicators of Lithuanian competitiveness

In this section, we will present the results of correlation, linear regression. Correlation analysis has disclosed which determinants of competitiveness had the direct impact on emigration rates in the country over the period 2004 – 2014. It has also revealed whether the variables positively or negatively correlated with each other and whether the links between them were statistically significant.

The results of the correlation between Lithuanian economic indicators and emigration rates over the period 2004 – 2014 have been presented in Table 1.

Table 1. Correlation between Lithuanian economic indicators and emigration rates over 2004 - 2014

Indicator	Correlation coefficient	Value p	Statistical significance ($\alpha=0.1$)
Consumer Price Index	-0.18	0.998	-
GDP per capita	-0.41	0.286	-
Remittances	0.17	0.461	-
FDI	0.12	0.972	-
Private consumption	-0.51	0.163	-
Exports of Lithuanian origin	-0.09	0.837	-

Source: compiled by the authors with reference to the results of estimations.

The data in Table 1 show that the values of the coefficients estimated for Consumer Price Index, remittances, FDI and exports of Lithuanian origin are close to zero. Therefore, apart from the indicator of remittances, the above-mentioned indicators will not be considered in further estimations due to their weak correlation with emigration rates. Although remittances are not directly linked to the flows of emigration, they are made by the emigrants settled in host countries. Hence, being aware of the fact that Lithuanian emigration rates are high, we find it reasonable to include the rate of remittances in our further estimations along with the rates of GDP per capita and private consumption, which show a medium-strong negative correlation with emigration rates. The findings of this research confirm the theoretical presumptions that increasing flows of emigration lead to the decrease in private consumption and GDP rates.

Further in the research, we will analyse the links between Lithuanian labour market indicators and emigration rates over the period 2004 – 2014 (see Table 2).

Table 2. Correlation between Lithuanian labour market indicators and emigration rates between 2004 - 2014

Indicator	Correlation coefficient	Value p	Statistical significance ($\alpha=0.1$)
Unemployment rate	0.58	0.018	+
Wages	-0.51	0.184	-
The number of private enterprises	0.19	0.536	-
Labour force	-0.67	0.097	+
Corporate bankruptcies	0.22	0.638	-

Source: compiled by the authors with reference to the results of estimations.

The data in Table 2 show that the values of the coefficients estimated for such indicators as the number of private enterprises and corporate bankruptcies are comparatively close to zero. As a result, we find it unreasonable to include them in our further estimations. The correlation between the

variables of emigration and unemployment is medium-strong and statistically significant ($r = 0.58$), which proposes that the increase in net emigration leads to an increase in unemployment rate, and vice versa. The labour force that leaves the country reduces the demand for job leads because the same job lead is claimed by fewer applicants.

Correlation between wages and emigration is equal to -0.51 , which proposes that both of these variables are negatively moderately linked. Nevertheless, wages make a significant impact on emigration rates: the decrease in average wages determines higher emigration rates. These tendencies are particularly noticeable during the periods of crises, when hard economic conditions force employers to reduce wages. Correlation between labour force and emigration rate is medium-strong negative ($r = -0.67$), which proposes that high emigration rates cause the problems of the lack of labour force in the country.

Further in the research, we will analyse the links between Lithuanian technology market indicators and emigration rates over the period 2004 – 2014 (see Table 3).

Table 3. Correlation between Lithuanian technology market indicators and emigration rates between 2004 - 2014

Indicator	Correlation coefficient	Value p	Statistical significance ($\alpha=0.1$)
R&D	-0.67	0.037	+
Turnover in innovative enterprises	-0.08	0.972	-

Source: compiled by the authors with reference to the results of estimations.

The data in Table 3 propose that negative correlation between R&D and emigration rate indicates the problem of ‘brain drain’ in the country: when many skilled professionals leave the country, the scopes of R&D activities decrease. The turnover in innovative enterprises does not show any significant correlation with emigration rates.

Further in the research, the links between Lithuanian demographic indicators and emigration rates over the period 2004 – 2014 will be analysed (see Table 4).

Table 4. Correlation between Lithuanian demographic indicators and emigration rates between 2004 - 2014

Indicator	Correlation coefficient	Value p	Statistical significance ($\alpha=0.1$)
Population	-0.68	0.157	-
Dependent population	0.36	0.378	-
Birthrate	-0.40	0.217	-

Source: compiled by the authors with reference to the results of estimations.

The data in Table 4 show that the most painful effect of emigration is the decrease in the total population of the country (correlation between the above-mentioned variables is medium-strong negative ($r = -0.68$)). Negative correlation ($r = -0.4$) between emigration and birth-rate indicates potential losses of the future population because young people, who are potential parents (Maslauskienė, Stankūnienė, 2007), compose a large number of emigrating people. What is more, high emigration rate determines society ageing, which positively, though weakly, correlates with emigration.

The results of the estimations show that only 4 out of 21 determinants of competitiveness have statistically significant links with emigration rates. Hence, for further research, it is purposeful to consider only the determinants that have medium correlation with emigration rates or strong correlation with the statistical number of population. They include: *private consumption, unemployment rate, wages, labour force, R&D, population, poverty threshold, state expenditure on social support, the number of arriving tourists, birth-rate and dependent population*.

Competitiveness and emigration have mutual relationship: the determinants of competitiveness change the structure and/or flows of emigration, while the structure and/or flows of emigration change the determinants of competitiveness. Nevertheless, as we consider emigration as an independent variable, in this research we assess only the changes in the determinants which are dependent on emigration.

Conclusions

Assessment of the impact of emigration on the competitiveness of the country was based on the concept of social welfare, in accordance with which competitiveness is referred to as the ability of state institutions to create favourable conditions for business companies to develop the competitiveness of their workers and raise social and economic welfare of the residents so that they would be motivated to exploit their abilities and generate higher value added. Hence, the most obvious indicator of population's life satis-

faction is direct contribution to the competitiveness of their home country or the decision to emigrate and raise the competitiveness of a host country.

It has been found that a substantial part of the indicators of Lithuanian competitiveness show different trends than those which are described in the scientific literature. This finding discloses the complexity and otherness of the situation in the country. It should be noted that although the country is losing its labour force, the rates of GDP per capita are increasing (in spite of the fact that theoretically high emigration rates should determine the reduction of GDP). This tendency can be explained by intensive flows of investment in R&D, i.e. the model of the country's economy is being redirected from cheap labour to technology-based economy. Nevertheless, the situation in the country is even worsened by sustainability of high unemployment rate and high risk of population's poverty.

Lithuania really needs to start caring about its demographic resources because different types of statistical prognoses warn about the potential decrease in the country's population and labour force, and notify about the increase in the number of the population over 60. The trends of low birth-rate and ageing society will ultimately cause the problems of social support and tax burden for the employed population. These problems may, in turn, serve as additional weighty reasons to emigrate.

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