

BRAIN DRAIN IMPACT ON THE ECONOMY: BALTIC STATES CASE

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Abstract

Globalization processes in the world are increasingly facilitating for migration of people. Increasing openness of countries, improved transport systems, their convenience and accessibility make it easier, and easier for people to travel between countries. This encourages international migration. As most countries migrate most of their human resources, some countries face the problem of brain drain when leaving a country with highly skilled resources, transferring their competences to another country. Considering that people are one of the most important resources of the country, it is obvious that large emigration flows affect the social and economic situation of the country. The brain drain phenomenon is particularly painful for those countries that do not have significant economic advantages over other countries but have favourable conditions for people to leave - international agreements, visa-free regime, etc. In Europe, this is especially evident among former post-Soviet countries. Those who joined the European Union were faced with a massive flow of migration as they could not offer their citizens adequate financial wealth. This article aims to compare the Baltic States' situation with the brain drain. In this article, the authors seek to assess how brain drain affects the economies of countries and to make suggestions on how to deal with emerging problems.

Keywords

labour market, migration, brain drain, employment, Baltic States

JEL Classification: J20, J61, O15

Introduction

The notion of brain drains stems from the changes in demographic factors caused by the migration of human resources. Changing the global logistics situation makes it easier for people to change their place of residence. In this way, economically developed countries are gaining ground, while developing countries face a lack of human resources. In the course of an active international movement of human resources, a large number of countries are facing the problem of brain drain, when highly skilled workers leave the country.

International migration is a phenomenon describing the resettlement of people or working from one country to another. This phenomenon is determined by a number of objective factors - the growing openness of countries and the expanding international agreements. One of the best examples is the free movement of people adopted by EU countries. Emphasis must be placed on developing logistics systems and infrastructure, social guarantees (especially in EU countries). However, the difficult financial situation of the citizens and the lack of conditions to improve it at home country often play a decisive role in the intention to emigrate.

The extent of the brain drain is particularly determined by the expanding activities of global companies, leading to an increasing demand for educated people. They are trying to attract the most promising employees to their core brain centres to grow and compete. This is to create a multicultural team capable of dealing with the most challenging tasks. Internationalization of economic activity has become a part of the global economy. Internationalization of economic activity - it is a convergence and cooperation between national economies. It manifests itself in general production dependence, in the stages of international trade, production, capital movement and labour migration growth, and overall influence on the most important economic processes in various countries (Vilpišauskas, 2004). This makes a significant contribution to the brain drain in lower economic development countries as they are uncompetitive to create the right working conditions for their most promising citizens.

The object of the particular study is: Macroeconomic problems caused by brain drain.

The aim of the study is: Evaluate the impact of brain drain on the economies of Baltic States.

The objectives of the study are:

- 1) To analyse the main features of the phenomenon of brain drain;
- 2) To form research methodology for the research of brain drain;
- 3) Investigate the impact of brain drain on the economies of Baltic States.

The methods of the study are:

- Logic and comparative scientific literature analysis
- Synthesis and deduction
- Statistical analysis

The novelty of the study: The brain drain phenomenon is widely known in the world but there is still a lack of justification for the economic impact of this phenomenon. This is relevant for smaller countries that do not have the ability to financially maintain highly qualified professionals. The developed research methodology allows to evaluate the impact of brain drain on national economies, including indicators such as average life expectancy, average duration of education, GDP per capita, etc. This makes it possible to compare states and look for solutions to reduce the process of brain drain.

Theoretical background and methodology

The brain drain is a significant component of the labor market, promoting its changes. In the absence of talented employees, business subjects in developed countries are trying to attract them from abroad, but this is difficult to achieve without state aid. A positive migration policy, a stable tax environment, and a social package allow for a steady flow of talented employees.

Labour market surveys can be conducted at two levels - microeconomic and macroeconomic. This allows us to analyse the labour market situation in various sections and to ensure timely decision making. According to Wells, Gruneberg, Dainty (2005), the main macroeconomic labour market research objects are:

- Labour market and its dynamics;
- Research on equality and opportunities between low-skilled workers, especially in industry;

- Migration at both national and international level, especially in the context of the free labour market (e.g. European Union).

Thus, the investigation of labour market trends can provide information both on the national and on the international economic situation. In order to get even more accurate results, it is necessary to take into account microeconomic research factors, which in this case are:

- Employee satisfaction and approach to work;
- Relationship between skills and performance (productivity), distribution of earned profit due to productivity;
- Future skills requirements, including professional and managerial skills, and how these skills are recognized;
- Strengthening the concept of Human Resource Management in a modern context.

The research objects presented highlight that labour market research is important both at national and business level. With the labour market research tools needed to quickly respond to changes in the demand for labour, her conditions, and so effectively adjust the budget to promote the efficiency of the labour market. In a negative case, possible react to the deterioration of the labour market situation and prepare for the general economic downturn.

Technological progress is also important for labour market changes. In the less developed countries, dominates lower-skilled workers who accomplish the simplest operations. In this way, the country is not able to create high value-added products and keep the country's finest minds. Conclusively, this situation promotes the brain drain. The high economic development countries face the opposite situation of high-value-added products in the country and the critical need for high-quality human resources. Technological progress creates conditions for the economic development of business globalization (Maceika, 1998):

1. International Trade: goods, services, technologies and objects of intellectual property.
2. International Movement of Production Factors:

- labour migration (natural migration of unskilled, cheap paid labour, brain drain),
 - for the exchange of information (scientific-technical information, know-how).
3. For International Financial Transactions:
- lending (private individuals and businesses, government, international organizations)
 - transactions with securities (shares, bonds, etc.),
 - financial instruments (forwards, futures, options, etc.).
4. For the development of global infrastructure (creation of companies serving various international business entities: international banks, crediting institutions, international consulting companies, etc.).

In terms of the phenomenon of the brain drain, it is generally accepted that migration flows move from poorer countries to richer ones. When people emigrate, they are looking for better living conditions, which are in developed and richer countries. Because migrants are often highly qualified, they choose countries with more attractive labour market conditions - easier to find work, more opportunities for improvement. The main result of this phenomenon is the search for better financial opportunities in countries with higher levels of development. As qualified human resources migrate in the brain drain process, it expects a higher wage in a foreign country to match its existing qualification.

The migration of highly skilled workers from developing countries to developed countries is driven by a variety of economic and social factors. Didžgalvytė and Pukelienė (2010) distinguish three main reasons:

- High level of income in developed countries;
- Lack of labour supply in developing countries;
- Working conditions in developing countries.

Differences in employment levels between countries are determined by objective economic factors. In general, it forms the directions of the brain drain. According to Martinka, Stoškus, Beržinskienė (2009), the employment rate of the country's population is determined by the size of effective general demand determined by the demand for consumption and investment. The general shortage or decline in demand creates conditions for a fall in economic activity. Later, it

determines the rise in unemployment and the number of unemployed. On the other hand, the increase in aggregate demand gives the economy a boost by creating preconditions for employment growth and falling unemployment. This may be due to a decline in the production of goods and services during the downturn, coupled with a decline in labour demand. Meanwhile, as economic activity increases, reverse processes take place. The longer and more intensive the economic upturn, the less the unemployment rate. It seems that this is the unemployment caused by cyclical economic fluctuations. In general, employment rates are a very important aspect of macroeconomic research, allowing us to see both the current economic situation in the country and its future potential. This allows predicting and potential volumes of brain drain.

According to Edwards (2016), the working-age population in Italy is emigrating due to better living conditions. In developing countries exists a situation where people of working age are leaving their countries, especially young people who have not yet established themselves in the labour market. This is due to the low level of wages, lower economic and social development level of the country compared to other countries, inefficient tax policy (Kripaitis and Romikaitytė, 2005). Also, political inactivity often contributes to the deterioration of conditions - reacting too slowly, not attempt to make the situation easier for the most intelligent part of society. Developing countries are facing a problem - the development of critical thinking as opposed to the interests of individuals who may be hampered by an increase in people's awareness.

The outcome of the brain drain phenomenon is an inefficient investment in higher education. Developing countries allocate sufficient funds to the higher education system and emigrants who use state support later leave their home country. In this way, public investment in higher education in order to "grow" young scientists and skilled workers ineffective because they are being moved to another country. Investments in human capital are considered to be one of the most important investments, as it promotes domestic economic growth. Due to the high level of education, the quality of work is improving, productivity is increasing and thus increase the overall economic level of the country. High-skilled workers are also receiving higher salaries, making the state budget

and social funds for pension funding more supplement. However, in confront of the brain drain, this is not being effectively exploited, as the number of productive part of society decreases and country confronted the problems of social programs, infrastructure development, and financing.

However, there is also exists in the opposite view of the possible positive effects of brain drain on foreign countries. According to this, migration can be useful and encouraging. Positive migration processes are visible through emigrants' feedback. Lowell and Findlay (2001) distinguish three of the most striking consequences of specialist migration feedback. When migrants come back from the foreign country, productivity increases in the labour market, as there are skills and work experience gained abroad. In addition, emigrants who remain abroad provide financial support through exchanges and that transferring their knowledge or technology to developing countries can increase their productivity and economic growth. Also, some emigrants go abroad only temporarily to accumulate capital, which then directs to their home country to invest in own house, business or other forms. However, in order to realize such a scenario, it is imperative that the developing country has a positive attitude towards emigrants, sincerely wishes to cooperate with them and recover them. If a state will act superficially, there is a risk not only of displacing a citizen of an emigrant country but also of ultimately repelling them, losing their competences.

In order to solve the problem of brain drain needed integrated solutions. They need to be coordinated between public authorities, municipal authorities to maximize the impact on returning citizens. One of these measures is the improvement of integrated labour policies. Working conditions are closely related to the government's policy in the country. The literature mentions a number of key decisions to be made by developing countries to avoid brain drain:

- Implement poverty reduction policies;
- Encourage employees to return to their homeland through various communication and financial programs;
- Improve the situation in the labour market - clarify labour relations, create a promotion mechanism;

- Investing in higher education - taking over the best foreign experience;
- To create conditions for the use of minds - to promote innovative business, self-expression of people in creating new business units.

Changes in the labour market nowadays are particularly visible in the migration of workers. Opinions on this issue are not unequivocal - they depend significantly on the country's economic situation. human resources travel to large countries without incentive, while small states with a weaker economic status are experiencing labour shortages. It is increasing, even more, when emigrated workers are not replaced by labour force from other countries. According to Lemos and Portes (2008), labour market migration has a small negative impact, as migration rates vary in the short and long term. In the course of migration, people who have previously emigrated, return to the country, adapt their experience and economic benefits. In the long run, wage levels are rising.

The efficiency of the labour market depends on the elasticity of social relations. According to Kramarz, Skans (2014), weak social relationships have an impact on the labour market, as it allows for the dissemination of information through business structures - labour agents, consultants, and others. This is particularly evident when there is a high level of immigration in the country - people who come to a new state and do not have any social links are looking for employment opportunities in the business enterprises. Job search networks are important not only for employees, but also for businesses, as this makes it easier for companies to deal with the issue, and networks quickly find workers with the requirable qualifications. Job Search Networks collect information on employee skills and transmit it accurately to companies that have a particular employee experience. Through these networks, it is easier to find work for those who have no work experience but have completed a certain type of studies. Technical knowledge graduates have the greatest amount of knowledge, while graduates with lower education have a lack of information, so training costs are needed to eliminate it.

When analysing brain drain in the Baltic States, demographic migration indicators, as well as socio-economic indicators, will be analysed separately. Depending on individual indicators, a comparison between Lithuania, Latvia, and Estonia will be carried out to assess the extent of

migration and brain drain in countries. The analysis of these indicators also aims to identify the causes and consequences of brain drain in the Baltic States. In addition, the policies and measures taken by the countries to stop the brain drain will be discussed separately.

In general, the brain drain phenomenon is driven by labour market imbalances in countries with different economic capacities. The host country incurs particular costs in recruiting qualified staff, but it pays off when they enter the labour market. Meanwhile, states, struggling with the brain drain, must purposefully strive for employees to associate their future with their homeland.

Results and debate

Migration shows people, who have left the country and arrived. Migration includes both immigration and emigration processes, which are measured by the number of immigrants and emigrants in the country. The emigration process (leaving the country) directly reduces the population in the country. Immigration is the opposite of emigration when people come to live to the other countries. The scale of immigration and emigration in the Baltic States is presented in Tables 1 and 2.

Table 1. Amount of immigrants

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Estonia	3671	3884	2810	3709	2639	4098	3904	15413	14822	17616
Lithuania	9297	6487	5213	15685	19843	22011	24294	22130	20162	20368
Latvia	4678	3731	4011	10234	13303	8299	10365	9479	8345	9916

Source: Departments of Statistics in Estonia, Latvia and Lithuania

The data in the first table show that the highest number of immigrants is recorded in Lithuania and during the period of 2008 - 2017 there was a tendency to increase. In 2008, 9297 persons arrived in Lithuania and 20368 in 2017. Estonia is also lagging, and the growth trend of immigrants is

similar to that in Lithuania. In 2008, 3671 persons arrived in Estonia, 0 in 2017 17616 persons. And the lowest number of immigrants in Latvia. In addition, Latvia does not have such rapid growth trends during the analysed period. In 2008, 4678 persons arrived in Latvia and 9916 in 2017.

Table 2. Amount of emigrants

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Estonia	4406	4658	5294	6214	6321	6740	4637	13003	13792	12358
Lithuania	25750	38500	83157	53863	41100	38818	36621	44533	50333	47925
Latvia	27045	38208	39651	30311	25163	22561	19017	20119	20574	17724

Source: Departments of Statistics in Estonia, Latvia and Lithuania

In 2008 - 2017, the number of emigrants grew in Lithuania. It is distinguished by the largest number of emigrants from the Baltic States and in 2017 even 47925 persons emigrated from Lithuania. Although the growing number of emigrants has been recorded in Estonia in the last 10 years, in 2017, the number of emigrants in Estonia is at least 12358 in the Baltic States. Latvia is distinguished by a decrease in the number of

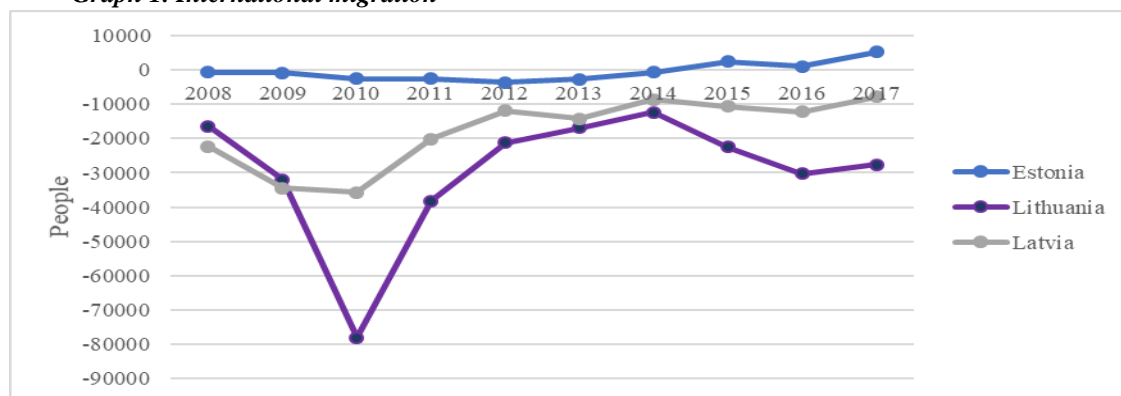
emigrants in the last 10 years, but in 2017, the number of expatriates is still quite high - 17724.

However, the change in the number of emigrants and immigrants separately in Lithuania, Latvia and Estonia do not show the actual migration situation in the countries. In order to assess migration trends in the country, it is important to assess the difference between the migratory balance - the immigrants and the

emigrants. The balance of migration shows how different the number of immigrants and emigrants is, which is reflected in the overall migration

situation prevailing in the country. The balance of migration in 2008 - 2017 is presented in Graph 1.

Graph 1. International migration



Source: Departments of Statistics in Estonia, Latvia and Lithuania

Figure 1 shows that during the period of 2008-2017 migration in Lithuania fluctuated the most. The biggest difference was recorded in 2010 when 77944 persons left Lithuania more than they arrived. Later on, the situation was getting worse, but in 2017 there is still a negative and the largest balance of migration in the Baltic States. This means that in 2017, 27557 more people left Lithuania than arrived. As work-age people are migrant mostly, Lithuania faces a sufficiently large brain drain. In Latvia, the balance of migration is much lower and reaches -7808 in 2017, which also means that fewer people arrive in the country than they leave. However, the indicator has been improving rapidly in recent years, which means that fewer and fewer people are leaving the country. The best migration situation is recorded in Estonia. Although the balance of migration in Estonia was negative until 2014, the value of this indicator is not high and has left 2548 more than arrived. However, already in 2015, the situation improved, and a positive indicator of the migration balance was recorded. This is also the case in 2017, which means that more people are drawn to Estonia than they leave. In this case, Estonia has no problem with the brain drain. This situation shows a phenomenon of brain inflows. This is a rare example of the post-Soviet states. This shows

the improvement of social and economic conditions in the country - higher salaries, easier conditions of establishment in the labour market, improving and acceptable working environment for people, improving social situation. For all these reasons, people are beginning to choose Estonia as a migration-friendly country, where they decide to transfer their skills and working skills, which are helping the country's economy to grow even faster.

Brain drain trends can also be explored through social prism. In order to more accurately assess and compare the quality of life in the Baltic States, the Universal Human Development Index (HDI) proposed by United Nations experts is taken into account. This index is calculated using data from three indicators:

- Average life expectancy;
- The average duration of training;
- Gross national income per capita.

Since 1990 The United Nations collects countries data and presents annually an annual report on human development reflecting the HDI. According to the latest data in 2018, the Baltic countries are located at high enough positions - 30, 35 and 41/42, out of 189 countries. More detailed data on the HDI are presented in Table 3.

Table 3. Human Development index of Baltic States

	Estonia	Lithuania	Latvia
Position	30	35	41/42
Human development index	0,871	0,858	0,847
Average life expectancy (years)	77,7	74,8	74,7
Average duration of training (years)	16,1	16,1	15,8
Gross national income per capita (\$)	28 993	28 314	25 002

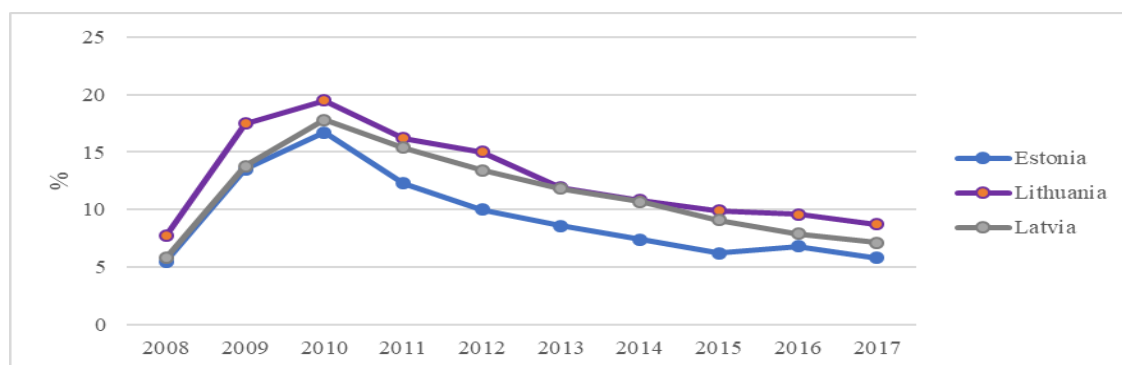
Source: United Nations Development Programme (2018)

According to the HDI, Estonia is ranked 30th and is the best in the Baltic States. HDI stands at 0.871, average life expectancy at 77.7 years, average 16.1 years of education, and \$ 28.993 per capita gross national income. Lithuania is a little behind Estonia. HDI is 0.885, average life expectancy slightly shorter - 74.8. The average duration of education in Lithuania is equal to 16.1 years in Estonia. The gross national income per capita is \$ 28,314 In this case, Latvia occupies the lowest of the Baltic States - 41/42 place (sharing with Portugal). Latvia's HDI is smaller than Estonia and Lithuania and is 0.847. The average

life expectancy is slightly different from 74.7 years in Lithuania. The average length of training is less than 15.8 years. Gross National Income per capita in Latvia is \$ 25.002.

The large scale of international migration and the predominant brain drain process also affect the country's economy. This is reflected in labour market indicators, economic activity in the country, prices and costs, and even government finances. When analysing the impact of labour migration and brain drain on the labour market, the rate of unemployment in the Baltic States is evaluated. It is shown in Graph 2.

Graph 2 Unemployment level, in %,



Source: Eurostat

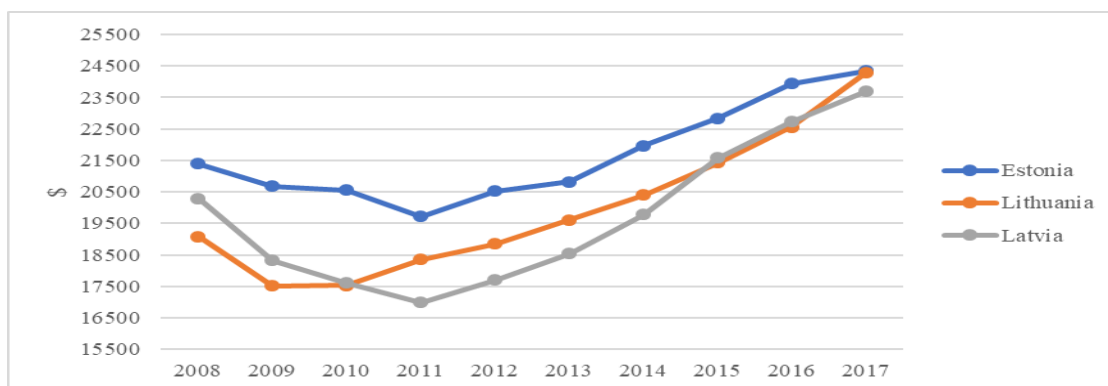
When assessing and comparing unemployment in the Baltic States, the unemployment rate in Lithuania, Latvia and Estonia is quite similar, and the fluctuation tendencies also are similar. The financial crisis that arose in 2008 has also affected the unemployment rate and its effects are visible until 2010, with rapidly rising unemployment rates in the countries. In Latvia, the highest

unemployment rate is recorded as high as 19.4%, 17.81% in Lithuania and 16.71% in Estonia. Later, the unemployment rate in the countries began to decline, and such trends are also influenced by human resource migration and brain drain processes. Given the fact that the working-age population is the largest emigrant and the population is aging, it is artificially reducing

unemployment in the country. As the working age population diminishes, while the retirement age increases, the unemployment rate in the country is lower and employment rates are higher. However, although the unemployment rate in the countries is

falling due to high emigration of people of working age, the country faces with another problem - the lack of qualified human resources. This affects both price and cost level indicators, as well as the wages shown in Graph 3.

Graph 3. Annual average wages, in USD



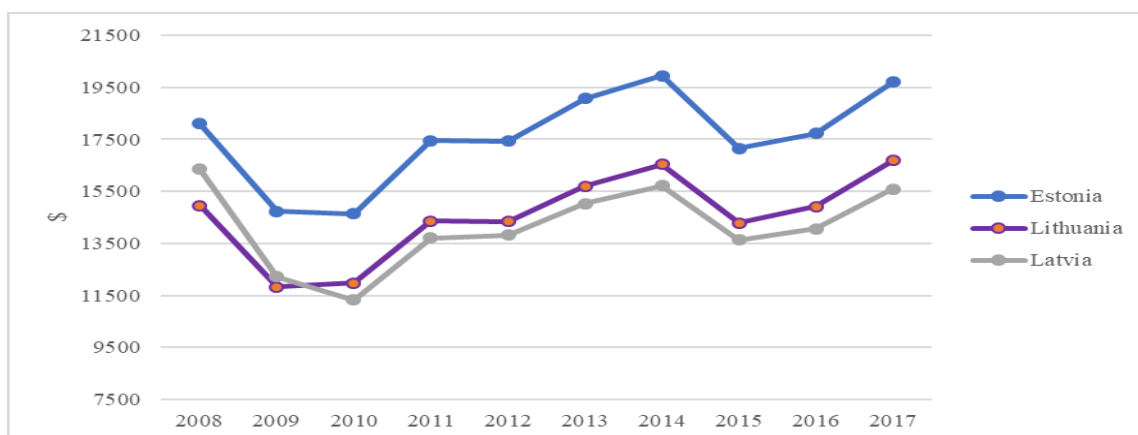
Source: OECD

In 2008 - 2017, the highest gross wages are recorded in Estonia and the lowest in Lithuania. In Latvia and Estonia, wages grew at a similar pace during the analysed period, but in Estonia the growth rate was slightly faster. Wage growth is driven by various factors, but one of them is labour migration and the brain drain process. As mentioned earlier, countries are facing the problem of a skilled workforce as a result of the rapid brain

drain process. This means that the labour market is becoming more competitive, and the lack of skilled workers offers higher wages.

GDP is the most commonly used indicator for the country's economic growth. As countries vary in size, countries will be compared against GDP per capita in order to achieve more accurate comparisons. Data provided in Graph 4.

Graph 4. GDP per capita (EUR)



Source: The World Bank (2019).

According Figure 4, Estonia, according to the same level of GDP per capita, is ahead of Latvia and Lithuania. The overall rates of change in the period of 2008-2017 are similar. However, the previous assessment of wages shows that in Lithuania it is the lowest, despite the change in GDP per capita. And this is one of the most important reasons why residents decide to emigrate from Lithuania, thus looking for better conditions for living and getting the competitive salary for labour. Having assessed the various indicators of the Baltic States, can state that the best brain drain problem is being solved in Estonia, meanwhile Lithuania and Latvia must make a progress. In Lithuania, the emigration flows are very high, and the number of immigrants is much lower. This leads to changes in the labour market, changes in social and economic indicators and reduces the country's economic development tendencies. In Latvia, the situation is similar to that in Lithuania. According to social indicators, Latvia lags slightly behind Lithuania, but economic indicators in the country show a slightly better situation. In addition, Latvia's emigration flows are much lower than in Lithuania. In order to solve this problem, Latvia undertaked determinate efforts. According to Actina, Geipele, Zeltins (2015), citizens in Latvia are encouraged to return to their homeland in various ways: young people who have completed their studies abroad are offered the work in public service, summer camps, language schools, conferences and folklore festivals are organized around the world. Moreover, in 2013, the Saeima legitimized dual citizenship. Latvia has also agreed to accept 531 refugees under the EU Refugee Program. In Lithuania, youth entrepreneurship promotion programs are being created, support and subsidies are provided. In recent years, a minimum wage has been raised in Lithuania, and a law has been passed that the qualified labour force must receive a higher than the minimum wage. Various conferences, advertisements and other tools are also being used to attract Lithuanians to return to the country. However, in Latvia and Lithuania these actions are not yet valid, and the problem of brain drain is still relevant.

Estonia is a model country among the Baltic States, which has solved the problem of brain drain in recent years. In Estonia, more people come to the country than they emigrate. This situation exists because Estonia is applying strategies for

attracting immigrants. The country has created favourable conditions for settled residents to establish themselves in the country and create a job. The improving social situation, rising wages have led to the arrival of not only large immigrant flows, but even helped to recover emigrant Estonians (50% of the people returning to Estonia are citizens of that country). This is a positive development, as it means that in a country with a

growing population, the collapse of pension, social security and education systems is no longer threaten, and the growing number of workers allows for a continuation of a balanced budget policy and moderately raising old age pensions and salaries for teachers, doctors and other public sector employees. Attracting a skilled workforce to the country helps Estonia to improve the situation in the country, improve social indicators and promote economic development.

Conclusions

The concept of brain drain describes the process of talented or educated working-age population leaving the country. The brain drain is happening due to people seeking better living conditions. Mostly migratory flows are due to higher income in developed countries, as well as low labour supply in developing countries and better job prospects. The consequences of this phenomenon are felt both socially and economically, as there are changes in the labour market, enhance a lack of skilled labour, as well as an aging population, inefficient use of funds invested in the education system and financial difficulties. Thus, in order to address this problem and reduce its consequences, it is first necessary to implement a poverty reduction policy, to encourage employees to return to their homeland, to improve the situation in the labour market; to create conditions for the use of the mind potential and other.

Comparison of the Baltic States showed that the problem of brain drain in Lithuania and Latvia is really topical and its consequences impede the development of social and economic development. Estonia is experiencing a stagnant brain drain problem, as a positive indicator of the migration balance. Taking into account the trends of the variables analysed and the consequences of brain drain, Latvia is trying to solve this problem by

encouraging citizens to return to their homeland by offering a job in public service, young people who have completed their studies abroad, organizing camps, language schools, conferences, festivals, as well as receiving refugees. Similar measures are being implemented in Lithuania: young people's entrepreneurship is encouraged; support and subsidies are given to facilitate the return of young people to the Lithuanian labour market. In order to help establish themselves in the country, young families are granted housing support. Lithuania also raises wages, thus reducing the level of poverty in the country and improving living standards. However, the data show that such a policy is not effective so far because the problem is not solved. Estonian system of attracting

immigrants has been very successful - creating favourable conditions for the settled population to establish themselves in the country and creating a job, improving the social situation, increasing wages led to the arrival of not only large flows of immigrants and thus solving the problem of brain drain. This encourages population growth in Estonia, the risk of a collapse in pension, social security and education systems disappears, and the growing number of workers allows the continuation of a balanced budget policy and moderately raising old age pensions and salaries for teachers, doctors and other public sector employees.

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