

Modelling of the Impact of Emigrants' Qualification Structure on the National Economic Growth: the Case of Lithuania

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Over the past decade significantly increased flows of emigration from Lithuania pointed out the relevance of emigration impact assessment on the national economic growth, as the country is losing economic, scientific, technical, innovative potential. Emigration has become one of the most important and controversial recent economic and political subject of discussions, however impact of different qualification groups on the national economic growth has not been emphasized. This is an important aspect of the research, because impact of migration on the national economic growth in the macroeconomic level depends on the political, economic and social conditions as well as on the individual characteristics of emigrants, their owned capital and behaviour. Therefore this paper presents the integrated assessment model of the impact of emigrants' qualification structure on the national economic growth, which has been applied in the case of Lithuania.

Emigration impact was assessed through the aggregated cost components, therefore GDP expenditure method has been chosen because it allows to identify systemically expenditure groups related to the economic growth through the incoming and outgoing cash flows which is determined by the emigrants' role in every economic sector

The calculation results showed that increase in part of qualified emigrants negatively influenced national economic growth during the whole analysed period. The biggest negative effect came from the change of consumption expenditure while the positive effect from the saved social benefits did not overcome the negative one. The calculations showed that the change of 10 per cent of emigrants' qualification structure determined on average of 5 per cent of the GDP loss change in the country.

Keywords: *emigration, qualification structure, impact on the national economic growth, GDP expenditure approach.*

Introduction

Emigration determines a loss of significant part of consumers, employees, investors, who spend their money in the destination country, therefore a big part of gross domestic product (hereinafter – GDP) is not created in the country of origin. Moreover, the country loses economic, scientific, technical, innovative potential. Over the past decade the mass emigration has been recorded in Lithuania, which reached over 30 thousand people a year. At the same time the highest negative net migration has been fixed for 1000 people comparing to the other EU countries. The mentioned circumstances determined that emigration has become one of the most important and controversial economic and political subject of discussions.

Analysis of the scientific literature revealed that migration and its impact on the economic growth is a multidimensional phenomenon, which was analysed and assessed in different aspects: *social, economic, cultural, political* (Lundborg & Segerstrom, 2000, 2002; Grossman & Helpman, 1991; Bretschger, 2001; Borjas, 1995; Drinkwater *et al.*, 2003; Wilson, 2003; Stulgiene & Daunoriene, 2009), *structural* (Reichlin & Rustichini, 1993; Walz, 1995; Karpavicius, 2006), which occurred in the different levels: *individual, family* (Stark, 1991), *institutional* (Massey *et al.*, 1993; Urbonaviciene & Tvaronaviciene, 2008), *industrial, national* (Xenogiani, 2006; Glytsos, 2002) and in different effects: *positive and*

negative (Stahl, 1982; Katseli *et al.*, 2006) or duration: *short or long terms* (Birks & Sinclair, 1980; Lucas & Stark, 1985; Gunatilleke, 1992; Leon-Ledesma & Piracha, 2001; Katseli *et al.*, 2006). However, in the mentioned sources migration phenomenon was not structured in the qualification aspect, but analysed as the whole, where qualification groups were not determined. So, it remains unclear how migration causes and outcome relate with the different structural characteristic. In the above mentioned researches migration process was assessed by evaluating dynamic rate changes of the particular groups of people. According to the analysis of the scientific sources it is claimed that at macro-economic level migration impact on the national economic growth depends on the political, economic and social conditions as well as on the individual characteristics of emigrants, their owned capital and behaviour.

According to the results of the scientific source analysis, it is claimed that national and foreign authors analysed various aspects of emigration impact on the demographical and economical processes: *impact of emigration on different demographic and economic indicators were assessed* by (Karpavicius 2006; Daugeliene, 2007; Kaczmarczyk & Okolski, 2008; Thaut, 2009; Barrel *et al.*, 2010; Roman & Voicu, 2010; Kasnauskiene & Siaudvytis, 2010; Kilijoniene *et al.*, 2010). These researches mainly present the assessment of emigration impact *on the national labour market, not defining emigrants' structural components.*

Emigration impact on the Lithuania's national economic growth assessing its structural components has not been quantitatively evaluated in previous researches.

So the lack of the integrated attitude to the assessment of emigration impact, defining structural emigrants' groups and considering their qualification, presupposes *the scientific problem* pointed out in the paper. It can be defined in the following questions: how emigrants' qualification structure influences on the national economic growth through the aggregated expenditure components? how to define and evaluate emigrants' structural impact on the national economic growth? The stated scientific problem determines *the research aim* – to design the integrated model for assessment of the emigrants' qualification structure impact on the national economic growth and prove it through the case of Lithuanian. *The research methods:* scientific literature analysis, comparison, search for analogues and graphical methods, systematisation and generalisation of the empirical research results.

Research Methodology

Unambiguous answers and research methods were not defined in the scientific references for the assessment of the impact of emigrants' qualification structure on the national economic growth. Different channels of emigration and impact of emigrants' qualification structure on the national economic growth were presented in the scientific literature (Katseli *et al.*, 2006; Xenogiani, 2006; Thomas, 2008; Fayissa, 2008; Ekanayake & Mihalits, 2008; Kahanec & Zimmermann, 2009; Giuliano & Ruiz-Arranz, 2009; Roman & Voicu, 2010; Adenutsi, 2011; Kasnauskiene & Buzyte, 2011; Grigorian & Melkonyan, 2011; Ratha *et al.*, 2011). So it stimulates to create the model, which would allow estimating and basing how and what kind of channels emigrants' qualification structure influences on the economic growth in the country of origin.

Therefore it was estimated that in analysing of the chosen phenomenon there is no one common opinion, because it depends on theoretical framework, aim and obtainable statistical information. Different research results can be explained in two ways. *Firstly*, the performed researches involve very different countries, including developed and developing. *Secondly*, the different rates were used including the indicators that include the economic growth in different countries as well as various emigrant structure aspects. These reasons allow claiming that it is purposeful to create a model and adapt it to the different statistical data in a particular country, because only having data for the model the integrated and comprehensive assessment of emigrants' qualification structure is possible. The form of emigration models depends on the accessible information. The choice of the emigration model depends on: (1) adaptability context; (2) theoretical framework; (3) factors, determining model's form, i.e. model aim, information character, emigration scope and type.

Generalizing the empirical research results it is noticed that the authors define different aspects of emigration impact, however there is no one common assessment methodology for integrated emigration impact on the national economic growth assessment. Assessment of emigrant's qualification structure changes impact on the

national economic growth is based on the scientific literature analysis (Docquier *et al.*, 2007; Kinderis, 2008; Chaloff & Lemaitre, 2009; Docquier & Schiff, 2009; Bollard *et al.*, 2010; Kim *et al.*, 2010).

Emigration impact in the analysed scientific references was assessed through the aggregated cost components. Therefore GDP expenditure method has been chosen to model the emigrants' qualification structure impact. It allows systemic identification of expenditure groups related to the economic growth through the incoming and outgoing cash flows determined by emigration. This method also generalizes the insights about the impact of emigrants' qualification structure on the national economic growth, because it includes emigrants' qualification structure components as well as aggregated cost components.

Considering the emigrants' economic characteristics, the impact of emigrants' qualification structure through the aggregated expenditure components has been dealt in details, because the impact scope depends on the structural characteristic. Before their departure emigrants had contributed to the economic growth in different ways, which were determined by the emigrants' role in economic sector (emigrants form a part of household sector consumers, take part as investors in business sector and as transfer beneficiaries or taxpayers in government sector). The model ignores the assessment of emigrants' qualification structure impact on net export, because of the lack of data accessibility (the structure of household consumption expenditure was considered according to the country of origin; investment – according to the export scope). Emigrants' qualification structure impact on net export is submitted in the assessment model, but has empirically not been analysed (see Figure 1). Analysing the impact of emigrants' qualification structure on the national economic growth the following emigrant groups have been defined: employees, self-employed and beneficiaries, considering their qualification. Integrated analysis of emigrants' qualification structure allows assessing the impact of emigrants' qualification structure on the particular integrated expenditure components, as well as on the general national economic growth. Figure 1 presents the assessment model of the impact of emigrants' qualification structure change on the national economic growth.

The model was designed to assess the impact of emigrants' qualification structure on the national economic growth by estimating the impact of emigrants' qualification structure on the particular aggregated expenditure components (consumption, investment, government spending, net export), which influence general emigration impact on the economic growth. *Firstly*, assessing the impact of emigrants' qualification structure change on the national economic growth, the impact on each GDP expenditure component was considered separately, i.e. on household consumption, investment, government expenditure. *Secondly*, the impact of emigrants' qualification structure change on the particular GDP components was summed in order to evaluate total effect on the gross domestic product. Emigrants' qualification structure impact on the national economic growth was modelled by applying the presented assessment model and changing factual emigrants' qualification structure, i.e. qualified and unqualified emigrants' qualification structure,

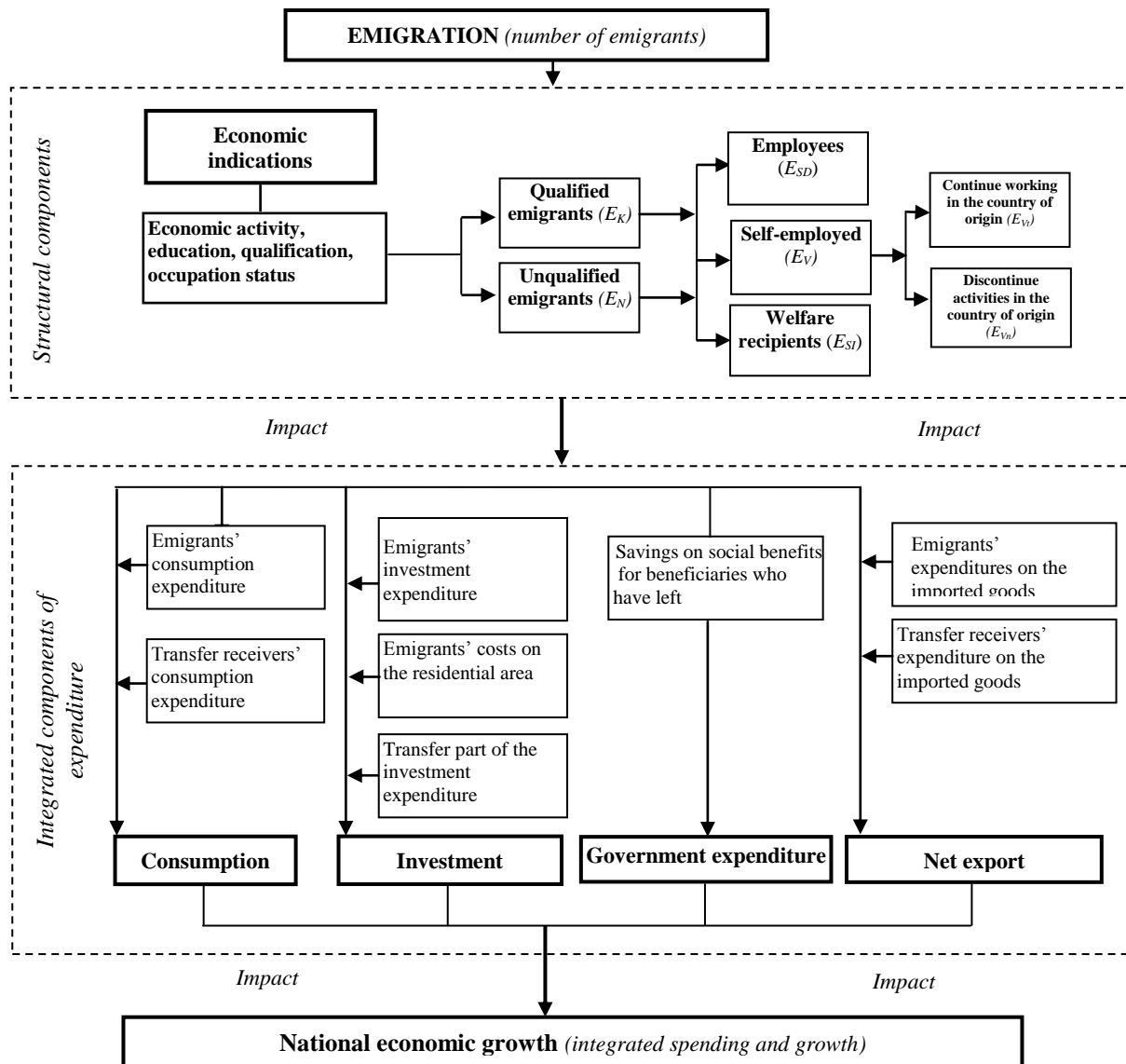


Figure 1. Model for the Assessment of Emigrants' Qualification Structure Impact on the National Economic Growth
 Source: own design

i.e. qualified and unqualified emigrant parts, and considering *ceteris paribus* presumption.

According to the model for assessment of emigrant's qualification structure impact on the national economic growth, the shown relations were detailed, i.e. the model was complemented with mathematical expressions of these relations and statistical data of the chosen country, reflecting variables in the model. This complementation is related to the statistical data needed for the calculations, accessibility and comparison in time. The integrated analysis allows assessing of emigrant's qualification structure impact on the particular aggregated expenditure component as well as on the general national economic growth. The presented model is adapted to the available Lithuanian statistical data. More detailed assessment is possible with adequate and comparable statistical base. The integrated model for the assessment of emigrant's qualification structure impact on the national economic growth is shown in Figure 2.

Modelling has been performed using the annual emigrant flow and aggregated emigration because the impact on the economic growth occurs not only in the current period but also in the subsequent periods (only about 9 per cent of emigrants return back to the country of origin). In order to assess the number of emigrants who left, the emigration flow has been recalculated, evaluating re-emigration scope. In the model this emigration flow is called *aggregated emigration*. Modeling was carried out only on the basis of emigrant's qualification structure changes in terms of the actual numbers of the emigration annual emigration flow, the disposable income, the average propensity to consume, remittances, investment rate and social benefits per recipient.

On the base of the presented model it is possible to evaluate quantitatively the impact of emigrant's qualification structure on the particular integrated expenditures components (consumption, investment, government spending, net export) and estimate the total effect on the gross domestic product and economic growth.

I. Emigrants' qualification structure impact on the consumption expenditures	
General emigration impact on the expenditures for consumption appears through lost and additional expenditures for consumption.	
$\frac{(E \cdot N) \cdot DP_N \cdot c_N + (E \cdot K) \cdot DP_K \cdot c_K}{\text{Lost C}}$	$\frac{(E \cdot N) \cdot r \cdot c_N + (E \cdot K) \cdot r \cdot c_K}{\text{Additional C}}$
where: E – number of emigrants; N – part of unqualified emigrants; DP _{N,K} – disposable income of the particular qualification group; K – part of qualified emigrants; c _{N,K} – expense rate of the particular qualification group.	where: E – number of emigrants; N – part of unqualified emigrants; K – part of qualified emigrants; c _{N,K} – expenditure rate of the particular qualification group; r – remittances per one emigrant.
II. Emigrants' qualification structure impact on the investment expenditures	
General emigration impact on the expenditures for investment appears through lost and additional expenditures for investment.	
$\frac{(E \cdot N) \cdot DP_N \cdot i_N + (E \cdot K) \cdot DP_K \cdot i_K}{\text{Lost I}}$	$\frac{(E \cdot N) \cdot r \cdot i_N + (E \cdot K) \cdot r \cdot i_K}{\text{Additional I}}$
where: E – number of emigrants; N – part of unqualified emigrants; DP _{N,K} – disposable income of the particular qualification group; K – part of qualified emigrants; i _{N,K} – investment standard of the particular qualification group.	where: E – number of emigrants; N – part of unqualified emigrants; K – part of qualified emigrants; i _{N,K} – investment standard of the particular qualification group; r – remittances per one emigrant.
III. Emigrants' qualification structure impact on the government expenditure	
General emigration impact on the government spending appears through saved social benefits (T_{SI}) , unemployment payments (T_b) and the left social benefit receivers (SI)	
$\frac{(E \cdot SI) \cdot N_{SI} \cdot T_{SI} + (E \cdot SI) \cdot K_{SI} \cdot T_{SI}}{\text{Saved social benefits}}$	$\frac{(E \cdot B) \cdot N_b \cdot T_b + (E \cdot B) \cdot K_b \cdot T_b}{\text{Saved unemployment payments}}$
where: E – number of emigrants; SI – part of social benefit receivers in the general emigrant flow; N – part of unqualified emigrants – social benefit receivers; T _{SI} – average social benefit for one social benefit receiver; K – part of qualified emigrants - social benefit receivers.	where: E – number of emigrants; B – part of unemployed emigrants in the general emigrant flow; N – part of unqualified emigrants; K – part of qualified unemployed emigrants; T _b – average unemployment payment for one unemployed.
<i>Impact</i>	<i>Impact</i>
GDP_E = (Additional C - Lost C) + (Additional I - Lost I) + Saved G	
Emigration impact on the economic growth is assessed as lost gross domestic product, which changes the expenditure components: consumption, investment and government spending.	

Figure 2. Mathematical Expression of the Model for Assessment of Emigrants' Qualification Structure Impact on GDP Growth
Source: own design

According to the scientific literature analysis it can be stated that emigration influences national economic growth indirectly through several factors which determine the number of inhabitants, consumers, investors and social benefit receivers as well as disposable income, consumption, investment and government expenditure.

Modelling of the Impact of Emigrants' Qualification Structure on the National Economic Growth in Lithuania

Emigration negatively influenced on the national economic growth during the whole analysed period, however its impact was not significant. According to the calculations, emigration decreases the growth of aggregated expenditure components. During the researched period emigration reduced the growth of consumption, because the largest part of income is generally devoted for consumption. This loss was not compensated by the usage of remittances. The impact of emigration on the particular aggregated expenditure component growth varied in the different periods of time, because it was determined by the emigration flow as well as by the received income, expenditures for consumption and investment and economic situation in the country. In the research it was estimated that emigration negatively influenced on the national economic growth during the researched period. Having assessed the current emigration flow it was estimated that economic growth was 0,03 p. p.

slower, and having assessed the aggregated flow – 0,3 p. p. Negative impact was determined by the qualified as well as unqualified people's emigration.

The summarized results of emigration impact on the aggregated expenditure components growth have been presented in Table 1.

As it can be seen from the calculation results presented in Table 1, saved social benefits, and the use of remittances did not compensate negative effect of disposable income which could be used for consumption and investment loss. During the whole research period emigration had the most negative impact on the consumption expenditure, since major part of the revenue is spent on consumption. This loss was exceeded by the use of remittances.

The modelling of emigrants' qualification structure impact on GDP was made in order to assess factual GDP loss and to evaluate its change through the emigrants' qualification structure change. According to the modelling results we can state that the higher share of the qualified emigrants was, the higher negative impact appeared comparing it to the unqualified emigration case. The calculations showed that the change of 10 per cent of emigrants' qualification structure determined on average of 5 per cent of GDP loss change in the country. The calculation results are shown in Figure 3.

Table 1

General Impact of Emigration on the Aggregated Expenditure Component Growth in 2001–2010, p. p.*

Year	Difference of expenditure change for consumption		Difference of expenditure change for investment		Difference of expenditure change for government spending		Difference of GDP change	
	Annual flow	Aggregated flow	Annual flow	Aggregated flow	Annual flow	Aggregated flow	Annual flow	Aggregated flow
2001	-	-	-	-	-	-	-	-
2002	-0,28	0,17	-0,09	-0,21	0,01	0,02	-0,20	0,04
2003	0,30	1,11	0,09	0,56	-0,01	-0,02	0,21	0,87
2004	0,09	-1,25	0,03	-0,30	-0,01	0,00	0,07	-0,79
2005	0,42	1,20	0,08	0,06	-0,02	-0,06	0,29	0,78
2006	-0,54	0,40	-0,17	-0,33	0,02	-0,03	-0,38	0,25
2007	-0,05	0,32	-0,02	-0,13	0,00	-0,11	-0,04	0,19
2008	-0,02	1,24	0,01	0,44	-0,01	-0,35	-0,01	0,95
2009	0,25	0,90	0,07	0,74	-0,03	-0,24	0,18	0,76
2010	0,21	0,23	-0,02	-1,47	-0,06	-0,44	0,11	-0,35
average	0,04	0,48	0,01	-0,07	-0,01	-0,14	0,03	0,30

*The changes were measured in percentage points
Source: own calculations based on Statistics Lithuania

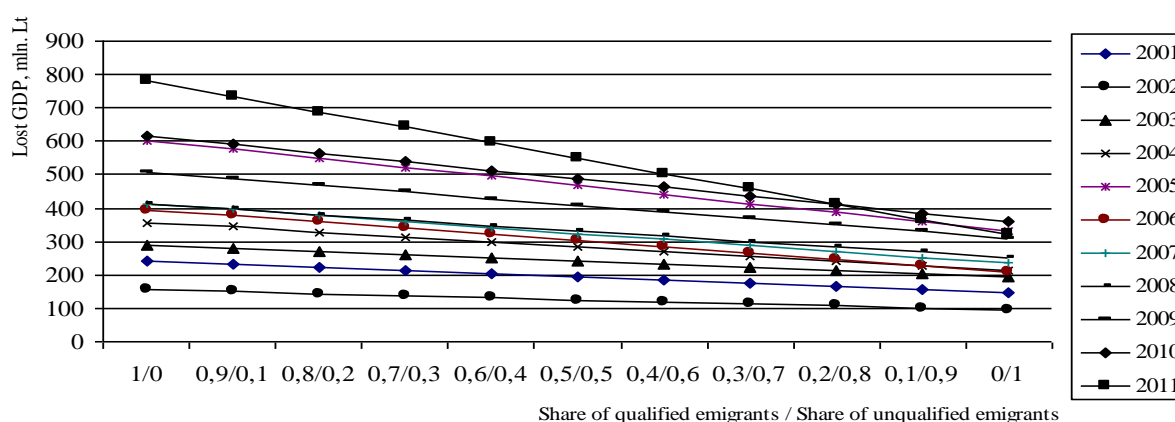


Figure 3. Modelling of the Loss of GDP in the Country Due to the Emigrants' Qualification Structure Changes
Source: own calculations based on Statistics Lithuania

The summarized results of the modelling have been presented in Table 2. The calculations show what percentage of the total economic growth was determined by the aggregated expenditure component change due to the change of emigrants' qualification structure change.

The calculation results presented in Table 2 show that emigrants' qualification structure change negatively influenced on the national economic growth during the whole analysed period. The biggest negative effect came from the consumption expenditure change while positive

effect from the saved social benefits did not overcome the negative one.

As it is seen from the research results shown in the Table 2, the country suffered the greatest loss in 2011, which was influenced by the increased number of emigrants and increased level of disposable income which determined the higher level of consumption expenditure and decreased investment rates even by 2 p.p.. During the other periods negative impact was mitigated by increasing remittances.

Table 2

Design of Emigrants' Qualification Structure Change

Year	$\Delta GDP_E = -\Delta C_E - \Delta I_E + \Delta G_E$	Year	$\Delta GDP_E = -\Delta C_E - \Delta I_E + \Delta G_E$
2001	-4,76=-4,50-0,32+0,06	2007	-5,47=-5,12-0,43+0,08
2002	-4,88=-4,61-0,32+0,05	2008	-4,78=-4,52-0,37+0,11
2003	-3,88=-3,62-0,30-0,04	2009	-4,84=-4,69-0,30+0,15
2004	-5,14=-4,78-0,42+0,06	2010	-5,26=-5,09-0,40+0,23
2005	-5,75=-5,37-0,45+0,07	2011	-8,51=-8,51-0,38+0,38
2006	-6,15=-5,78-0,44+0,07		

ΔGDP_E – GDP percentage change due to the emigrants' structure change
 ΔC_E – consumption expenditure percentage change due to the emigrants' structure change
 ΔI_E – investment expenditure change due to the emigrants' structure change
 ΔG_E – government spending change due to the emigrants' structure change

Source: own calculations based on Statistics Lithuania

The country lost on average 11278 Lt of aggregated expenditure due to one emigrated person every year (departure of one qualified inhabitant resulted in 12211 Lt loss, unqualified – 6420 Lt). According to the empirical research it is possible to quantify the economic efficiency of the applied migration policy instruments comparing the costs of these instruments with the loss due to the emigration, comparing how much resources are needed for the emigration management in order to reduce the loss in the country.

Conclusions

Analysis of the scientific references revealed that migration and its impact on the economic growth is a complex and multi-dimensional phenomenon, which is analysed and assessed in many different aspects, occurs in various levels and creates different effects. In order to assess the impact of emigration we should take into account the individual emigrants' characteristics which determine the scope of the impact of emigration on the national economic growth.

In the scientific research the impact of migration on the national economics is treated differently, because there is no one common opinion on what effects of impact

should be discussed. Before their departure emigrants had contributed to the economic growth in different ways, which were determined by the emigrants' role in economic sector (emigrants form a part of household sector consumers, take part as investors in business sector and as transfer beneficiaries or taxpayers in government sector). GDP expenditure method was chosen in this paper to model the impact of emigrants' qualification structure, because it allows systemic identification of cost groups related to the economic growth through the incoming and outgoing cash flows determined by emigration.

Having summarized the research results it was estimated that emigration had negative impact on the consumption expenditure during the analysed period. The calculations showed that the change of 10 per cent of emigrants' qualification structure determined on average of 5 per cent of GDP loss change in the country. The research results showed that country suffered the highest loss because of emigration in 2011, because this loss was determined by the increased number of emigrants and the increased level of disposable income which determined the higher loss of consumption expenditure and decreased investment rate even by 2 p.p.

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Emigrantų kvalifikacinės struktūros poveikio šalies ekonomikos augimui modeliavimas: Lietuvos atvejis

Santrauka

Pastarąjį dešimtmetį labai padidėjęs emigracijos iš Lietuvos srautams, itin aktualus tampa emigracijos poveikio šalies ekonomikos augimui vertinimas, nes šalis praranda ekonominį, mokslinį, techninį, inovacinį potencialą. Emigracija tapo vienu svarbiausių ir kontraversiškesnių pastarojo laikotarpio ekonominių ir politinių diskusijų objektu. Tačiau mažai akcentuojamas skirtingų kvalifikacinių grupių poveikis šalies ekonomikos augimui, nors tai yra svarbus analizės aspektas, nes vertinant makroekonominį lygmenį, žinoma, kad gyventojų migracijos poveikis šalies ekonomikos augimui priklauso nuo politinių, ekonominių ir socialinių sąlygų bei individualių emigrantų charakteristikų, jų sukaupto kapitalo ir elgsenos. Todėl šiame straipsnyje pateiktas emigrantų kvalifikacinės struktūros poveikio šalies ekonomikos augimui kompleksinis vertinimo modelis, kuris patikrintas Lietuvos atveju.

Pripažįstama, kad globalizacijos sąlygota gyventojų migracija – natūralus procesas, tačiau pernelyg dideli jos mastai sukelia neigiamų pasekmių. Emigruojant skirtingos kvalifikacijos gyventojams, yra prarandama nemažai vartotojų, darbuotojų, investuotojų, kurie savo uždirbtus pinigus išleidžia kitose šalyse, todėl nesukuriamas dalis bendrojo vidaus produkto (toliau – BVP) kilmės šalyje. Be to, šalis netenka ekonominio, mokslinio, techninio, inovacinio potencialo. Pastarąjį dešimtmetį, Lietuvoje fiksuota masinė emigracija, kasmet vidutiniškai siekusi daugiau nei 30 tūkst. gyventojų. Taip pat šalis pasižymėjo ir didžiausiu neigiamu migracijos saldo, tenkančiu 1000 gyventojų, lyginant su kitomis ES šalimis. Minėtos aplinkybės lėmė, kad emigracija tapo vienu svarbiausių ir kontraversiškesnių pastarojo laikotarpio ekonominių ir politinių diskusijų objektu.

Įvertinus tai, Lietuvoje emigracijos poveikis šalies ekonomikai, vertinant gyventojų struktūros dedamąsias, nebuvo kiekybiškai išmatuotas, pabrėžiant atskirų emigrantų struktūros komponentų įtaką ekonominiams rodikliams ar jų grupėms. Taip pat pasigendama kompleksinio požiūrio į šio proceso poveikio vertinimą, t. y. išskiriant struktūrines emigrantų grupes, atsižvelgiant į jų kvalifikaciją. Tokiu būdu, *mokslinę problemą*, kurią siekiama nagrinėti šiame straipsnyje, atskleidžia tokie klausimai: kaip emigrantų kvalifikacinė struktūra veikia šalies ekonomikos augimą per visuminių išlaidų komponentes? Kaip nustatyti ir įvertinti emigrantų kvalifikacinės struktūros poveikį šalies ekonomikos augimui? Konstatuota mokslinė problema sąlygoja iškeltą *straipsnio tikslą* – parengti emigrantų kvalifikacinės struktūros poveikio šalies ekonomikos augimui kompleksinio vertinimo modelį ir patikrinti jį Lietuvos atveju. *Tyrimo metodai*: mokslinės literatūros analizė, lyginimas, analogų ieškojimo ir grafinių metodai, empirinių tyrimų rezultatų sisteminimas ir apibendrinimas.

Emigrantų kvalifikacinės struktūros poveikio šalies ekonomikos augimui vertinti, iki šiol nėra pateikta vienareikšmių atsakymų bei tyrimo metodų. Atlikta mokslinė literatūros analizė, leido pagrįsti prielaidą, kad egzistuoja įvairūs emigracijos bei emigrantų kvalifikacinės struktūros poveikio šalies ekonomikos augimui kanalai. Nustatyta, kad analizuojant pasirinktą reiškinį, neprieita bendros nuomonės, kokie poveikio pasireiškimo būdai turi būti aptariami, nes tai priklauso nuo pasirinktos tyrimo krypties ir tikslo, gaunamų statistinių duomenų, kurių pagrindu atliekamas tyrimas. Tokius rezultatų skirtumus galima paaiškinti keliomis priežastimis. *Pirma*, atlikti tyrimai apima labai skirtingas šalis, t. y. analizuotos besivystančios ir išsivysčiusios šalys. *Antra*, tyrimams naudoti skirtingi rodikliai, apimantys tiek šalių ekonomikos augimą, tiek įvairius emigrantų struktūros aspektus. Šios įvardytos priežastys leidžia teigti, jog tikslinga sukurti modelį, jį pritaikant tam tikros šalies statistiniams duomenims, nes tik turint duomenis atitinkantį modelį, įmanomas kompleksinis ir išsamus emigrantų kvalifikacinės struktūros vertinimas. Emigracijos tyrimo modeliai pateikia emigracijos priežasčių arba poveikio paaiškinimą, taip pat ateities projekcijas. Emigracijos modelių forma priklauso nuo tyrimui gaunamos informacijos. Taigi emigracijos modelio pasirinkimas priklauso nuo: (1) pritaikomumo konteksto; (2) teorinio pagrindimo; (3) veiksnių, galinčių sąlygoti modelio formą, t. y. modelio tikslo, informacijos pobūdžio, emigracijos masto ir tipo. Analizuotuose moksliniuose tyrimuose, emigracijos poveikis vertinamas įvairiomis visuminių išlaidų komponentėmis, todėl emigrantų kvalifikacinės struktūros poveikio modeliavimui pasirinktas BVP išlaidų metodas. Jis leidžia susistemintai identifikuoti išlaidų grupes, susijusias su ekonomikos augimu analizuojant *įeinančius* ir *išeinančius* pinigų srautus, kuriuos sąlygoja emigracija. Šis metodas pasirinktas, nes jis apibendrina išsakytas įžvalgas apie emigrantų kvalifikacinės struktūros poveikį šalies ekonomikos augimui, nes apima tiek emigrantų kvalifikacinės struktūros dedamąsias, tiek visuminių išlaidų komponentes. Atsižvelgiant į emigrantų ekonomines charakteristikas, straipsnyje išsamiai vertinamas emigrantų kvalifikacinės struktūros poveikis visuminių išlaidų komponentėms, nes nuo struktūrinių charakteristikų priklauso poveikio mastas. Emigravę gyventojai iki išvykimo prisidėjo prie ekonomikos augimo įvairiais būdais, kuriuos lėmė emigranto vaidmuo kiekviename ekonomikos sektoriuje (namų ūkių sektoriuje emigrantai sudaro dalį vartotojų, verslo sektoriuje emigrantai dalyvauja kaip investuotojai, vyriausybės – transferinių išmokų gavėjai arba mokesčių mokėtojai).

Atlikto tyrimo rezultatai parodė, kad visą nagrinėjamą laikotarpį, gyventojų emigracija turėjo įtaką šalies ekonomikos augimui, tačiau šis poveikis nebuvo itin reikšmingas. Apibendrinus atlikto emigrantų kvalifikacinės struktūros poveikio šalies ekonomikos augimui tyrimo rezultatus, galima teigti, kad atsižvelgiant į kvalifikacinę emigrantų struktūrą, gyventojų išvykimo poveikis ekonomikos augimui yra panašus, tačiau skiriasi poveikio mastas. Analizuojamu laikotarpiu emigracija sumažino vartojimo augimą, nes paprastai didžioji pajamų dalis yra skiriama vartoti. Tyrimo rezultatai parodė, kad didžiausią nuostolį dėl emigracijos šalis patyrė 2011 metais, nes pastaraisiais metais ši nuostolį lėmė didesnis emigrantų skaičius bei didesnė disponuojamosios pajamos, kurios sąlygoja didesnę vartojimo išlaidų praradimą ir net 2 p. p. sumažėjusi investavimo norma. Atlikus tyrimą nustatyta, kad emigracija visu analizuojamu laikotarpiu turėjo neigiamą poveikį šalies ekonomikos augimui. Įvertinus einamąjį emigracijos srautą, nustatyta, kad šalies ekonomikos augimas dėl emigracijos buvo vidutiniškai 0,03 proc. punkto lėtesnis, o įvertinus agreguotą srautą – 0,3 proc. punkto. Neigiamą poveikį turėjo ir kvalifikuotų ir nequalifikuotų gyventojų emigracija.

Raktažodžiai: *emigrantai, kvalifikacinė struktūra, poveikis šalies ekonomikos augimui, BVP išlaidų metodas.*

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