MIGRATION, COVID, REMITTANCES AND ECONOMIC GROWTH IN THE BALTIC STATES: A REGIONAL PERSPECTIVE

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The Baltic states have faced high emigration flows since joining the EU in 2004. While integrating to the EU, the region has faced many economic and political issues, including migration due to Covid-19 and various economic factors. These issues revealed the weaknesses of their economic policies, financial systems and social security systems. Though, after the EU accession in 2004, the Baltic economies demonstrated rapid economic growth, but the financial and economic crisis has evidently shown their weaknesses. The Baltic states is a crucial example of the regions where the current emigration has drawn the attention of policy makers seeking to reduce the possible negative effects of the emigration of young and skilled workers. We have employed fixed effects and OLS estimation to conduct our research. Our regression analysis has demonstrated that remittances positively and significantly contribute to the economic growth of the Baltics. However, we emphasize the importance of further analysis of the geography of remittances to the region, especially under conditions of Brexit given the high share of remittances which the Baltics were receiving from the United Kingdom during years. The effects of Brexit on remittances flows from the United Kingdom to the Baltics will definitely take place in the future, thus, shifts in emigration flows and remittances should be in focus.

Keywords: migration; covid; remittances; geography of remittances; economic growth; Baltics; Baltic states

Introduction

Emigration from the Baltics has increased considerably over the past decades, a phenomenon that has enhanced radically since the Baltic countries joined the EU in 2004. Emigration of population is reflected in very high negative net migration rates and results in substantial depopulation. Very fast economic growth following the EU accession resulted in dropping emigration rates to certain extent.
However, since 2008 emigration rates have increased again. Lithuania, in particular, faced the highest negative net migration within all EU countries in 2008 and in Latvia negative net migration almost tripled between 2007 and 2008.

The intention to leave the region is strongly related to economic decline and rising unemployment. OECD data show that young men of working age are more likely to emigrate in case of unemployment that occurs in the Baltic countries. Thus, the negative effect of emigration, can be partially counteracted via the inflow of remittances and foreign investments. Due to the Covid, migration flows came into the focus of economic research again (Sirkeci & Yucesahin, 2020; Barker et al., 2020).

The paper is structured as follows: in the next section, we have conducted literature review on the impacts of remittances on economic growth, emigration and remittances in the Baltics and geography of remittances in the region.

Then we have provided the research design. In the next section, we have presented research results and the final section contains conclusion and discussion.

**Literature review**

**Impacts of remittances on economic growth**

According to the Encyclopedia of Geography (Remittances, 2010) remittances are “an important geographic phenomenon due to the sheer volume and extent of monetary flow from more affluent to poorer nations and the fact that they are disproportionately received by poorer members of these developing countries”. Earlier studies on the effects of remittances on economic growth have shown that they often triggered economic growth.

The direct effect of remittances on economic growth depends on the share allocated to productive investments. Therefore, a substantial body of the literature on remittances investigates their alternative destinations and the fundamental factors. As basically accepted, most of the money is spent on household consumption, housing and health care (OCSE, 2006), though tendency to save seems to be higher for remittances than for domestic money (Cingolani & Vietti, 2019; Fajnzylber & Lopez, 2008). Households’ decision to invest is determined by the money that will remain available after basic needs are satisfied, but it also depends on the conditions of the economic environment, especially tax policy, the financial market, interest rates, etc. (Maimbo & Ratha, 2005).

Even if remittances are not used for investments but for consumption only, they can also trigger economic growth through a higher production and employment. This indirect “multiplier effect” can produce 2-3 additional units of GDP for each unit of remittance inflow (Karpeotam, 2012, Takenaka et al., 2020).

Meyer & Shera(2017) researched the influence of remittances on economic growth in Bulgaria Albania, Bosnia Herzegovina, Moldova, Macedonia and Romania in the period 1999–2013 and found out that remittances positively affect economic growth, an increase in remittances by one unit increases GDP by 0.293%.

Cismas et al. (2019) have researched the impact of remittances on economic growth in Romania during 1996-2017 and concluded that the inflow of remittances that got to the country via official channels did not have significant influence on economic growth, however the inflow of remittances that enter the country via informal channels had a much higher impact.
El Hamma (2019) has researched the effects of remittances on economic growth in 14 Middle East and North Africa (MENA) countries during 1982-2016. The author has tested a hypothesis that “the effect of remittances on economic growth varies depending on the level of financial development and institutional environment in recipient countries”.

Results of the research have revealed that remittances trigger economic growth in countries with a developed financial system and a strong institutional environment. Similar research on the effects of remittances on economic growth in developing countries during 1990-2014 conducted by Dastidar (2017) has also supported these results.

The research has shown that remittances trigger economic growth only in the “more open” economies due to the fact that remittances by their nature are not sufficient for growth. The extent of their effect on economic growth is determined by the quality of domestic institutions and macroeconomic environment in the receiving countries. Unlike the “less open” economies, “more open” economies are characterized by better financial markets and institutions and better ability to turn remittances into profitable investments which, in turn, induce the rate of economic growth. Positive impact of remittances on economic growth in MENA countries during 1977-2014 has also documented by Devasagayam et al. (2016).

Studies aimed at researching the effect of remittances on GDP in European countries have also supported the results of considered positive effect of remittances on economic growth. In particular, Comes et al. (2018) have researched the impact of remittances and FDI on economic growth in Central and Eastern European countries during 2010-2016 and shown that there is a positive impact of both remittances and FDI on economic growth in analyzed counties.

However, analogous research for the same region conducted by Gjini (2013) has shown that remittances negatively affected economic growth of the CEE countries during 1996-2010. In particular, the author has recorded that an increase in remittances by 10% decreases the output by about 0.9%.

The author has emphasized that the key concern of CEE countries after the collapse of Communism has been to develop policies to increase their standard of living to the level of Western European countries. Economic growth achieved after 1991 by the CEE countries has been remarkable. However, determinants that have affected economic growth in the region vary from capital investment, to foreign direct investment, foreign aid, institutional factors, labor surplus, technological change, trade, research and development.

Research of Gapen et al. (2009) has shown that remittances “do not seem to make a positive contribution to economic growth...Perhaps the most persuasive evidence in support of this finding is the lack of a single example of a remittances success story: a country in which remittances-led growth contributed significantly to its development...But no nation can credibly claim that remittances have funded or catalyzed significant economic development”.

Different conclusions can be drawn, however, most of them claim that remittances might be a significant contributor to economic growth of if they are used for investments in more opened economies with developed financial institutions and infrastructure.

We assume a significant influence of the remittances for economic growth of the Baltics based on high emigration flows since joining the EU in 2004. In the next part of our paper, we deal in more detail with the relationship between emigration and remittances in the region.
Emigration and remittances in the Baltics

While integrating to the EU, the Baltics have faced many economic and political problems, which revealed the weaknesses of their economic policies, financial systems and social security systems (Kerikmäe et al., 2018). Although the Baltic economies have shown rapid economic growth since joining the EU in 2004, the fundamentals of the Baltic economies have remained unstable and the financial and economic crisis has clearly shown its weaknesses.

In particular, cheap foreign capital was used for consumption, not for investment. (Poissonnier et al., 2017, Galstyan et al., 2021).

The Baltics area crucial example of countries where the current emigration, intensified by covid migration, has drawn the attention of policy makers (Sirkeci & Yucesahin, 2020, Chakraborty & Maity, 2020) seeking to diminish possible negative effects of the emigration of young and skilled workers (Hazans, 2016, 2019). Latvia and Lithuania, in particular, have experienced high population outflows after joining the EU and during the 2008 crisis (OECD, 2013).

These outflows, which have disproportionately involved young population, worsen a demographic situation of the Baltic states which are facing a rapidly aging population (Włodarska-Frykowska, 2018).

According to the research of the European Commission on the movement of skilled labour (ICF et al., 2018) none of the three Baltic states has a comprehensible, strategic approach to attracting return movers and movers from other countries. Thus, the negative effect of emigration, can be partially counteracted via the inflow of remittances and foreign investments.

Nevertheless, the issue of emigration in the region since 2004 has been recognized, there are, however, not many studies on the effects of remittances on economic growth in the Baltic countries as a region. According to some studies, remittances in the Baltics have been used by the households for buying real estate and other goods and services. Around 63% of migrants in the Baltics have used remittances for everyday needs (Hazans, 2003). At the same time, there is a positive role of remittances in increasing the standards of living in Estonia, the households faced less financial difficulties if their family members sent remittances (Hazans & Philips, 2009).

Rausser et al (2018) have investigated the effect of remittances in the Baltics and found out they have a high and positive impact on economic development in the region during 2005-2015. However, minimum wages in Latvia and Lithuania appeared to be more significant factors of economic development in the region than remittances.

Kumar & Stauvermann (2014) have explored the effects of remittances on the output per worker in Lithuania during 1980–2012 and found out unidirectional causation from remittances to output per worker in the country. Sirkeci & Yucesahin (2020) have explored the migration on the spread of Covid. In our paper, we have analyzed the effect of remittances on economic growth of the Baltics as a region.

It should be noted that the volume of remittances to the Baltics has been declining in recent years. In Estonia, a decreasing trend of remittances can be observed since 2013 (Fig.1), in Latvia – since 2010 (Fig. 2) and in Lithuania – since 2014 (Fig. 3).
Figure 1 – GDP per capita and remittances in Estonia, 1997-2018
(Source: created by the author based on the World Bank Data (World Bank, 2018b))

Figure 2 – GDP per capita and remittances in Latvia, 1997-2018
(Source: created by the author based on the World Bank Data (World Bank, 2018b))
Given the opposite GDP growth and remittances in all Baltic countries in recent years, our research will contribute to the literature by revealing whether remittances are significant factor of economic growth of the region. In the next section, we consider historical geography of remittances in the Baltics and Brexit as a significant factor affecting remittances flows in the region.

**Geography of remittances in the Baltics**

When considering the effects of remittances on Baltic economics, their geography should be emphasized. According to the available World Bank database 2010-2017 on bilateral remittances flows (World Bank, 2017) countries, from which the highest shares of remittances are sent to all Baltic countries are Germany, Russia, Ukraine, United Kingdom and the United States.

However, at the same time, the Baltic countries differ from each other by the geography of sending countries. In particular, according to the latest data, a higher volume of remittances than to other Baltic states are sent to Latvia from Australia and Canada, Belarus while Estonia receives higher remittance flows than Lithuania and Latvia from Finland, and Lithuania experiences much higher remittances from Russia, United Kingdom, United States, Germany, Ireland, Norway, Spain and Poland.

According to the last available World Bank data on remittances (World Bank, 2017), the share of remittances from the United Kingdom in total amount to Estonia was 5%, to Latvia – 21% and to Lithuania – 22.8%. As the United Kingdom is a major remittance source for the Baltic Region, Brexit will have a significant impact on emigration flows, i.e. on the geographical area of remittances in the region and, consequently, on their contribution to economic growth. Another influential factor is Covid, that influences migration in the region (Sirkeci & Yucesahin, 2020, Khanna, 2020).

It is not known how remittances flows will be changed. Brexit will create a significant financial and political gap. The power in the bloc will move toward Germany and France.
However, answers to other questions are not so clear. In particular, questions about the future direction of the EU will arise when the loss of the largest member of the region outside the euro area shifts the focus more to euro area members and creates a huge gap in the EU budget.

Other Member States are working to adapt their internal EU policies and are developing new regional groups and coalitions to influence the EU’s orientation towards a stronger Franco-German partnership.

Currently, the Northern member states are developing stronger cooperation among themselves within the EU. In particular, Nordic cooperation continues, involving the three Baltic States known as the North-Baltic Six (NB6) (Hilmarsson, 2019). Another notable effort to strengthen cooperation is the Dutch-led New Hanseatic League (Lewicki et al., 2019), which brought together the finance ministers of the Nordic and Baltic countries, the Netherlands and Ireland.

The above changes in power and the development of cooperation between Member States, as well as Covid pandemic will undoubtedly bring about changes in migration flows and the amount of remittances in the Baltics (Sirkeci & Yucesahin, 2020; Mukhra et al., 2020). However, these changes can only be monitored after a certain period of time. Historical data available so far may shed light on the impact of remittances on economic growth in the Baltics before Brexit. In the section below, we presented a research design of the paper.

**Research design**

*Hypothesis and model specification*

We have tested the following hypothesis:

\[ H_0: \text{Remittances had a positive influence on economic growth in the Baltics during 2010-2017.} \]

When exploring the effect of remittances on economic growth of the authors have used both GDP per capita (Abduvaliev & Bustillo, 2019; Comes et al., 2018; Gjini, 2013; Mehedintu et al., 2019; Sabra, 2016) and GDP per capita growth (Cismaș et al., 2019; El Hamma, 2019; Ghosh Dastidar, 2017; Meyer & Shera, 2017).

Based on the above theoretical background and empirical findings, we developed a regression model to assess the impact of remittances on economic growth in the Baltics, along with other macroeconomic determinants as control variables (Tab. 1) during 1997 - 2018.

Our time frame is limited due to data availability.

\[ l_{\text{GDP per cap}} = a_0 + a_1 \text{Remittances perc} + a_2 \text{Gross fixed cap form perc} + a_3 \text{Unempl perc} + a_4 \text{FDI inflow perc} + a_5 \text{REER} + a_6 \text{Crisis} + U_i \]  

(1)

**Results**

Regression analysis was performed using fixed effects and OLS estimation.

Summary statistics are given in Tab. 2. The results of the regression analysis are shown in Tab. 3.
Tests for capturing different groups, heteroscedasticity, error distribution are shown in Tab. 4.

Table 1 – Description of variables
(Source: made by the author)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Unit of measure</th>
<th>Source</th>
<th>Expected sign of the influence on savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>l_GDP_per_cap</td>
<td>Logarithm of GDP per capita</td>
<td>Current prices, euro per capita</td>
<td>(Eurostat, 2020b)</td>
<td></td>
</tr>
<tr>
<td>Remittances_perc</td>
<td>Remittances in receiving countries</td>
<td>% of GDP</td>
<td>(World Bank, 2018b)</td>
<td>+</td>
</tr>
<tr>
<td>Gross_fixed_cap_form_perc</td>
<td>Logarithm of gross fixed capital formation</td>
<td>% of GDP</td>
<td>(World Bank, 2020)</td>
<td>+</td>
</tr>
<tr>
<td>Unempl_perc</td>
<td>Logarithm of the number of unemployed people</td>
<td>% of active population, aged 20-64</td>
<td>(Eurostat, 2019)</td>
<td>-</td>
</tr>
<tr>
<td>FDI_inflow_perc</td>
<td>Foreign direct investment, net inflows</td>
<td>% of GDP</td>
<td>(World Bank, 2018a)</td>
<td>+</td>
</tr>
<tr>
<td>REER</td>
<td>Real effective exchange rate</td>
<td>Index</td>
<td>(Eurostat, 2020a)</td>
<td>-/+</td>
</tr>
<tr>
<td>Crisis</td>
<td>Crisis 2008</td>
<td>Dummy variable (0,1)</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

Table 2 – Summary statistics
(Source: calculated by the author)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>l_GDP_per_cap</td>
<td>8.958</td>
<td>9.106</td>
<td>0.5805</td>
<td>7.766</td>
<td>9.89</td>
</tr>
<tr>
<td>Remittances_perc</td>
<td>2.386</td>
<td>2.029</td>
<td>1.688</td>
<td>0.02729</td>
<td>6.044</td>
</tr>
<tr>
<td>Gross_fixed_cap_form_perc</td>
<td>24.73</td>
<td>23.86</td>
<td>5.015</td>
<td>16.91</td>
<td>36.82</td>
</tr>
<tr>
<td>Unempl_perc</td>
<td>10.78</td>
<td>10.85</td>
<td>3.704</td>
<td>4.200</td>
<td>19.30</td>
</tr>
<tr>
<td>FDI_inflow_perc</td>
<td>5.098</td>
<td>4.227</td>
<td>3.990</td>
<td>-3.104</td>
<td>22.18</td>
</tr>
<tr>
<td>REER</td>
<td>94.86</td>
<td>96.95</td>
<td>10.16</td>
<td>64.89</td>
<td>114.2</td>
</tr>
<tr>
<td>Crisis</td>
<td>0.04545</td>
<td>0.0000</td>
<td>0.2099</td>
<td>0.0000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

We have included in our basic model six determinants of economic growth, which are remittances, gross fixed capital formation, unemployment rate, FDI inflows, the real exchange rate and a dummy variable in times of crisis (Barcenilla et al., 2019; Chinnakum et al., 2013; de la Fuente-Mella et al., 2019; Fadejeva & Melihovs, 2008; Goliuk, 2017; Norkus, 2016; Rusu & Roman, 2018; Yazdi, 2019; Yucel, 2014).

We made two modifications to the basic fixed effects model 1 (model 2 and model 2). A test to capture the different groups showed in all three cases that estimating the fixed effects was the correct method of estimation.

However, Wald's heteroskedasticity test for baseline model 1 and modified model 2 showed that a heteroskedasticity was present. Remittances appeared significant in all three fixed-effect models.
The last modified fixed effects, Model 3, does not indicate a heteroskedasticity and residual error. As expected, remittances had a positive impact on economic growth in the Baltics in 1997-2018.

The OLS estimation (base model 4 and adjusted model 5) showed that the impact of remittances, together with the unemployment rate, FDI inflows, the real exchange rate and the dummy variable on the crisis, appeared to be in line with our expectations. Our results showed similar effects within and between impacts in terms of the impact of remittances on economic growth of the Baltic countries.

Table 3 – Regression results
(Source: calculated by the author)

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1 Baseline model Fixed effects</th>
<th>Model 2 Modified model Fixed effects</th>
<th>Model 3 Modified model Fixed effects</th>
<th>Model 4 Baseline model OLS RBS</th>
<th>Model 5 Modified model OLS RBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const</td>
<td>6.15*** (0.53)</td>
<td>5.91*** (0.31)</td>
<td>8.88*** (0.13)</td>
<td>5.13*** (0.6)</td>
<td>5.07*** (0.43)</td>
</tr>
<tr>
<td>Remittances_perc</td>
<td>0.12*** (0.02)</td>
<td>0.12*** (0.02)</td>
<td>0.29*** (0.02)</td>
<td>0.05*** (0.01)</td>
<td>0.05*** (0.01)</td>
</tr>
<tr>
<td>Gross_fixed_cap_form_perc</td>
<td>−0.00 (0.00)</td>
<td>−0.00 (0.00)</td>
<td>−0.05*** (0.01)</td>
<td>−0.04*** (0.01)</td>
<td>−0.04*** (0.00)</td>
</tr>
<tr>
<td>Unempl_perc</td>
<td>−0.04*** (0.00)</td>
<td>−0.04*** (0.00)</td>
<td>−0.05*** (0.01)</td>
<td>−0.04*** (0.01)</td>
<td>−0.04*** (0.00)</td>
</tr>
<tr>
<td>FDI_inflow_perc</td>
<td>0.00 (0.00)</td>
<td>0.02** (0.00)</td>
<td>0.02*** (0.00)</td>
<td>0.02*** (0.00)</td>
<td>0.04*** (0.00)</td>
</tr>
<tr>
<td>REER</td>
<td>0.03*** (0.00)</td>
<td>0.03*** (0.00)</td>
<td>0.04*** (0.00)</td>
<td>0.04*** (0.00)</td>
<td>0.04*** (0.00)</td>
</tr>
<tr>
<td>Crisis</td>
<td>−0.16 (0.11)</td>
<td>−0.18*** (0.06)</td>
<td>−0.18*** (0.06)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of countries</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>LSDV R-squared</td>
<td>0.91</td>
<td>0.91</td>
<td>0.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within R-squared</td>
<td>0.91</td>
<td>0.9</td>
<td>0.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td></td>
<td></td>
<td></td>
<td>0.88</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td></td>
<td></td>
<td></td>
<td>0.87</td>
<td></td>
</tr>
</tbody>
</table>

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1
Table 4 – Tests for differing group intercepts, heteroscedasticity, error distribution
(Source: calculated by the author)

<table>
<thead>
<tr>
<th>Tests/Models</th>
<th>Model 1 Baseline model Fixed effects</th>
<th>Model 2 Modified model Fixed effects</th>
<th>Model 3 Modified model Fixed effects</th>
<th>Model 4 Baseline model OLS RBS</th>
<th>Model 5 Modified model OLS RBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests for capturing different groups</td>
<td>10.02 (0.00)</td>
<td>14.55 (0.00)</td>
<td>22.42 (0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald test for heteroscedasticity</td>
<td>9.18 (0.02)</td>
<td>11.38 (0.00)</td>
<td>1.39 (0.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test statistic for normality of residual test</td>
<td>3.86 (0.14)</td>
<td>4.07 (0.13)</td>
<td>3.21 (0.19)</td>
<td>3.87 (0.14)</td>
<td>4.19 (0.12)</td>
</tr>
<tr>
<td>White’s test for heteroscedasticity</td>
<td></td>
<td></td>
<td></td>
<td>28.68 (0.19)</td>
<td>18.38 (0.36)</td>
</tr>
</tbody>
</table>

Note: p-value in parentheses
RBS – robust standard errors

Conclusion and discussion

We tested the hypothesis that remittances had a positive impact on economic growth in the Baltics in 1997-2018 using fixed effects and an OLS estimation. Multiple regression analysis was used to examine the relationship between remittances and economic growth. In addition to the data on remittances, we used variables such as gross fixed capital formation, unemployment rate, FDI inflows, real exchange rate and the dummy variable on crisis in 2008. Tests for different group captures, heteroscedasticity, error distribution were used to test the quality of regression model.

Our regression analysis has shown that remittances make a positive and significant contribution to the economic growth in the Baltic countries.

We emphasize the importance of analyzing the geography of remittances, especially under Brexit conditions, given the high share of remittances that arrive in the Baltics from the United Kingdom. The contribution of further studies should therefore focus on examining the effects of Brexit on remittances flows from the United Kingdom to the Baltics. Furthermore, the effects of the corona virus should be examined to see if the loss of remittances from senders who have been severely affected by the virus can cause an economic downturn in the Baltics and when these negative effects can be mitigated.

We also emphasize that remittances can increase economic growth if they are used for investment. This study focused on the relationship between remittances and economic growth, and it is therefore useful for further research to examine how remittances are used in the Baltics.

Acknowledgements

This research was funded by Vega research project no. 1/0287/19 “Integration of immigrants in EU countries from the point of view of migration policies”
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MIGRATION, COVID, REMITTANCES AND


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*Paper submitted* 26 August 2021
*Paper accepted for publishing* 11 November 2021
*Paper published online* 30 November 2021