



DISCUSSING THE ROLE OF MIGRATION AND EDUCATION IN FIGHTING ECONOMIC VULNERABILITY IN SOUTH- EASTERN EUROPE

Monica Raileanu-Szeles, Ileana Tache

Transilvania University of Brasov and Institute for Economic Forecasting within the National
Institute for Economic Research, Transilvania University of Brasov, Romania

monica.szeles@unitbv.ro, itache@unitbv.ro

Abstract: *This paper aims to examine the effects of the net migration rate and higher education on a set of economic vulnerability indicators in the South-Eastern EU countries, when controlling inter alia for other explanatory variables. These relationships are explored by panel data regression models, using macroeconomic variables collected over 10 years from the Eurostat dataset. The random effects Generalized Least Squares (GLS) and the system Generalized Method of Moments (GMM) estimators are comparatively examined. The paper finds that the tertiary education attainments do not represent a significant determinant of income inequality and subjective well-being, while the net migration rate and lifelong learning exert a significant and powerful impact on most our measures of economic vulnerability over the period of analysis.*

Key words: net migration rate, lifelong learning, tertiary education, economic vulnerability.

JEL classification: I24, I25, I31

INTRODUCTION

Recent developments regarding the massive emigration from Syria to Europe (mainly to the European Union) has opened a wide space for debates about the economic and social implications of this ongoing process. Our paper is based on historical data running up to 2011, so it cannot answer these current questions, but it could give insights about the implications of migration flows beside other variables such as tertiary education and lifelong learning in the South Eastern (SE) Europe. Migration matters a great deal for South-Eastern Europe



economies, societies and individuals. In this region, migration flows are primarily economically driven.

The paper discusses the role of education and net migration on a selected subset of economic vulnerability variables because the tertiary education and migration represent significant processes that have lately received an increasing attention into the SE Europe. Higher education systems are always in correspondence with societal trends, with a significant contribution to the economic and social stability.

Although a large body of literature has investigated the implications of education (e.g. higher education) and migration on different economic and social variables, little attention has been paid to the SE Europe area. In this light, our paper could bring valuable insights to the literature, by placing this “old” research question into a new context. Moreover, it analyzes together the implications of the net migration rate and tertiary education attainments, as two of the most important policy developments in the SE Europe.

The interest for the dynamics of economic vulnerability in the SE Europe comes from the continuous rise of socio economic inequalities in the European Union in the last decades. Despite the progress made in the sense of poverty reduction, economic development and economic growth, the regional and national, social and economic disparities continue to increase from one year to another across the EU, especially across the EU developed countries. An impressive number of papers have previously investigated the effects of different economic, social and demographic variables on social inequality and poverty in the EU, but little empirical evidence exists about the recent economic and social processes developing in the SE Europe, such as the dynamics of migration and tertiary education.

In this context, the paper analyzes how migration and tertiary education influence economic inequality in the SE Europe, and to what extent their impact is constant across different measures of economic inequality. In subsidiary, other economic variables are examined as potential determinants of economic inequality. Also, the same set of explanatory variables is used to examine the poverty risk disaggregated upon the income quartiles.

The paper is structured as follows: the next section reviews the body of literature in the field, the third section presents the methodology and data, the fourth section constitutes the empirical analysis, and the last section formulates the concluding remarks and policy recommendations.



LITERATURE OVERVIEW

A brief but concise literature overview can offer valuable insights for our research.

The international organizations are primarily concerned with the migration issues and realized a lot of studies in this field. IMF (2015) finds that migration flows are in generally driven by differences in income levels and strengths of social safety nets between sender and receiver countries. Most Central and South-Eastern European states with per capita incomes below USD 15000 have been on the sender side of migration flows since the late 1980s. The same study investigates the migration consequences and offers evidence that even for the receiving countries there are both short-term and potential long-run benefits of migration. The net fiscal impact of migration is, initially, to be negative, reflecting the cost of humanitarian aid and integration policies. However, over time, the fiscal burden diminishes, as migrants gradually enter the labour force and contribute to tax revenues.

IOM¹ (2015) finds out that, despite some negative aspects of migration such as the separation of families, brain drain and waste, increased health risks and health inequity, as well as xenophobia and discrimination, migration can and does contribute to inclusive and sustainable social and economic development by benefitting countries of origin and destination as well as by enabling the human development of migrants and their families.

The economics of migration literature provides a framework for understanding how migration may be conceptualized as a social protection strategy. For example, De la Brière et al. (1997) develop two models, using insurance and investment as the two main alternative motivations for migrants to send remittances to their families. Dadush and Falcao (2009) state that migrants are economic assets for both host and home countries, but the global financial crisis has disproportionately affected migrants, who are both economically and politically vulnerable. According to the same authors, temporary migration programs and collaboration with migrant-sending countries can help maximize the economic benefits of migration, including in times of crisis.

Craig, Waite, Lewis and Skrivankova (eds.) (2015) provide an interesting analysis, showing that globalization, the economic crisis and related policies of austerity have led to a growth in extreme exploitation at work, with migrants particularly vulnerable. They explore

¹ International Organization for Migration



the lives of the growing number of severely exploited labourers in the world today, questioning how we can respond to such globalized patterns of extreme inequality.

A valuable attempt to locate migration within a social protection framework both theoretically and empirically belongs to Sabates -Wheeler and Waite (2003). They unravel the links between social protection and migration by exploring migration-specific vulnerabilities. A distinction is made between migration as a social protection strategy and migration as leading to vulnerabilities that require specific social protection instruments.

World University Service (WUS) Austria (2010) starts from the idea that education is a most valuable good that is worth protecting. Through support for education it is indeed possible to secure peace and economic and social stability. The above-mentioned study, on the basis of country-reports, analyzes the higher education in South-Eastern Europe and its connections with the economic and social development in the region, including employability and job opportunities.

Education services in South-Eastern Europe are also attentively investigated by Arandarenko and Bartlett (2012), who show that, in the crisis context, these services have come under increasing pressure leading to difficulty in providing the labour market with required skills, so they did not achieve their role in alleviating the economic vulnerabilities. As regards the importance of lifelong learning in South-Eastern Europe, numerous European documents recognize and perceive it as strengthening the economic and social recovery (for example European Training Foundation, 2006).

METHODOLOGY AND DATA

Our analysis is conducted based on panel dataset, so that a set of panel data regression models is used to explain the variables of financial poverty upon a common set of explanatory variables. Two estimators are comparatively examined in the empirical section, the random effects Generalized Least Squares (GLS) regression and the system Generalized Methods of Moments (GMM). As it is usually assumed and found in most panel data studies, we expect our data to be affected by a number of econometric problems, such as: endogeneity, serial correlation and heterokedasticity. For these reasons, the GMM estimator is considered to be used in the empirical section. But, as highlighted in the next section, under small sample sizes, the GMM underlying tests Arellano-Bond, and especially the Sargan test becomes weak



and could reject the model and the working set of instrumental variables. The GMM estimator is therefore used just in one regression model, while the random effects GLS regression is used in most regression models.

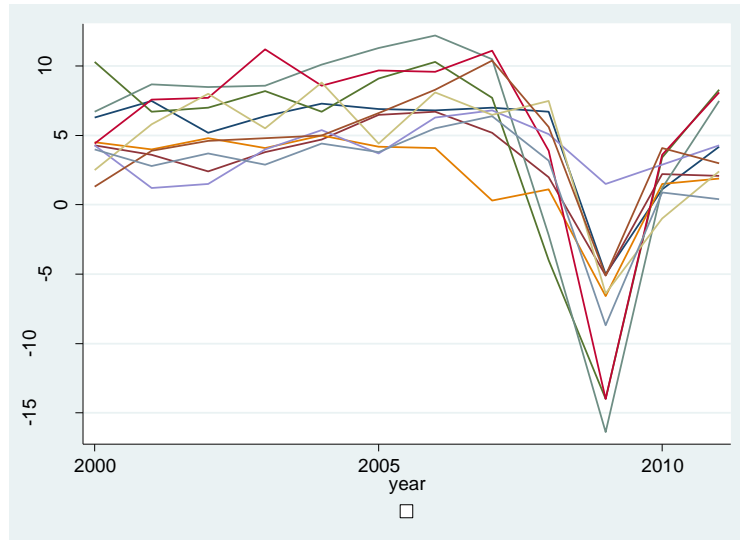
The data used in the empirical analysis are collected from the Eurostat dataset for a number of 10 New Member States and runs from 2000 to 2011. The countries included into our sample are SE European countries, which are also EU members². The dependent variables are selected as to reflect different aspects of income inequality, subjective well-being and poverty: the income quintile share ratio (S80/S20), abbr. “Income quintile share ratio”, and Gini coefficient of equivalized disposable income, abbr. as “Gini”, are indicators of social inequality. The upward income transitions within one or two years, abbr. as “income transitions” suggests the income mobility. The housing cost overburden, abbr. as “housing overburden” is indicative for subjective well-being, while the poverty risk is a measure of economic vulnerability. Even the latter three variables do not explicitly refer to social inequality, they are used here as to describe different aspects of economic vulnerability.

The main explanatory variables of interest are the net migration rate, tertiary education attainments and lifelong learning. The latter two variables are indicators of the NMS performance in the field of education. The net migration rate is the difference between the number of persons entering and leaving a country during a year dividing per 1000 inhabitants. Beside the explanatory variable above, a subsequent set of control variables includes the government debt, GDP growth rate and employment rate of older people.

All variables of our analysis exhibit different patterns and degrees of volatility in the period of analysis. There are two exceptions: the GDP growth and the tertiary education attainments. The GDP growth (Fig.1) of all countries follows a similar pattern, whose most significant moment is the sharp drop during the global economic crisis. This figure is suggestive for the general long-term process of economic real convergence, not only in the EU area, but also in the NMS area.

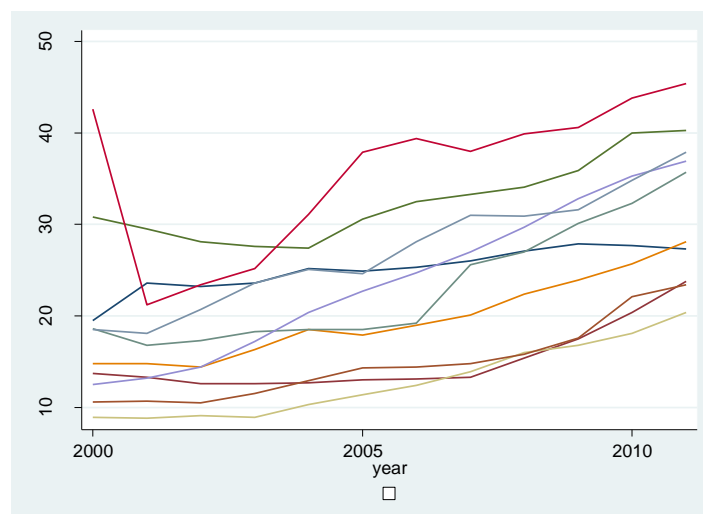
² Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia

Fig 1. The dynamic of GDP growth in the SE Europe area



In Fig.2 all countries of our analysis follow the same increasing trend as regards the percentage of population with tertiary education attainments. Apparently this is a good sign of economic growth and economic development (as detailed in the empirical section), but this is true only when this increasing trend goes alongside with the insurance of quality in the educational process. Otherwise, the graduates will not be able to get a job, and they will further significantly contribute to the youth unemployment which reached high rates in the reference period all over the EU.

Figure 2. The dynamic of the tertiary education attainments in the SE Europe area





EMPIRICAL RESULTS

In Tab. 1 the four variables of economic inequality are explained upon a set of explanatory variables. Even though the Gini indicator and the income quintile share ratio are both indicators of income inequality, they could give insights to different patterns of income inequality, as resulted from their conceptual scope. The income quintile share ratio compares the incomes of the persons or households at the top of the income distribution to those at the bottom. In turn, the Gini coefficient measures the extent to which the income distribution deviates from a perfectly equal distribution.

According to Tab. 1, the impact of the net migration rate on both the income quintile share ratio and Gini coefficient is significant and similar, in the sense that, according to both measures, the increase of the net migration rate leads to the decrease of income inequality. The net migration rate also generates a significant effect on income mobility, i.e. it discourages the income transitions, inducing therefore a low level of income mobility. The GDP growth brings the same effect on the variable of income transitions, in the sense that it discourages movements from one income category into another. The net migration flows have therefore a positive effect on the income inequality measures, but a negative effect on income mobility. At this point we rely on the initial definition of income transitions as upward income transitions developing within one or two years.

The education indicators have mixed effects on our subjective indicator of financial poverty. The increase of tertiary education attainments is found to feed subjective well-being. Although this finding is contrasting to a large body of literature suggesting that higher levels of education are associated to positive outcomes (such as better health, better well-being, higher social trust etc.), according to our model, our finding could stem from the peculiarities of the South-Eastern European labor market. The significant increase of tertiary education attainments from one year to another partially comes together with the situation of young graduates who generally meet difficulties in finding a job. They contribute to the youth unemployment rate, which reached high levels in the period of analysis not only in the SE Europe, but in all EU countries. Moreover, the very fast increase of the number of higher education institutions in the SE Europe did not always mean a fair or standard quality of the educational process or an appropriate transfer of knowledge, so that, once again, the higher



education could not always ensure a higher well-being, not in the short term, and nor in the long term.

In contrast, the lifelong learning has a positive influence on subjective well-being. The continuous accumulation of knowledge over the entire working life ensures the raise of subjective well-being in the SE Europe. Most people enrolling into this process already have a career or actively participate on the labor market, so that the lifelong learning helps them improving even more their well-being. The lifelong learning also contributes to the decrease of social inequality, but only when this is measured by the Gini coefficient.

Increasing the employment rate of older people has a positive effect on the improvement of subjective well-being. This finding is in line with our expectations. In the case of older people, the age represents a powerful barrier on the labor market. The older unemployed have become over time a vulnerable category in the SE Europe and not only here. But given the crisis of the “pay-as-you-go” pension system in the EU, mainly due to the aging process, the increase of older employability could generate positive social and economic benefits.

The government debt is strongly connected to our variables of financial poverty. The increase of governmental debt determines the reduction of income inequality measured by both our indicators (models 1 and 3). According to our results, a more indebted SE European country is more likely to have a lower income inequality. This could be explained by the social expenditure assumed by the SE European governments, which leads to the reduction of social inequality, at the price of the government debt increase.

Table 1. The determinants of economic inequality, 2000-2011, SE Europe

Explanatory variables	Income quintile share ratio (model 1)	Income transitions (model 2)	Gini (model 3)	Financial burden (model 4)
Net migration	-0.07*** (0.02)	-0.37*** (0.10)	-0.06*** (0.02)	-0.05 (0.21)
GDP growth	-0.006 (0.01)	-0.09** (0.05)	-0.05 (0.01)	0.13 (0.11)
Tertiary education	0.008	-0.04	0.02	0.70***



	(0.02)	(0.10)	(0.02)	(0.20)
Lifelong learning	-0.09*	-0.002	-0.11**	-0.86**
	(0.04)	(0.24)	(0.05)	(0.42)
Older employment	0.01	-0.13	0.03	-0.85***
	(0.03)	(0.12)	(0.02)	(0.23)
Government debt	-0.03**	-0.07	-0.03***	0.06
	(0.01)	(0.05)	(0.01)	(0.11)
Constant	5.93***	40.24***	4.66***	56***
	(1.44)	(6.13)	(1.22)	(10.94)

*Note: Random effects GLS regression; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.; Period of reference: 2000-2011, 10 SE European countries.*

But one might argue that the regression models reported in Tab.1 are affected by endogeneity, such as it is the case of the relationship between the Gini coefficient and economic growth, whose bi-causality has been widely explored in the literature. In the presence of endogeneity, instrumental methods should be used. Although most papers relying on the GMM method usually report both the difference- and system GMM versions, in Tab.2 below we present just the system GMM output. This is because the system GMM estimator in dynamic panel data models is found to be less biased than the first difference GMM estimator (Hayakawa, 2007).

The first and second lag of endogenous variables are used as instruments. The first lag is correlated with the current error term, so that the second lag is normally required. But since the number of countries analyzed in this paper is here rather small (10 countries), using the second lag will weaken the Sargan statistic. A compromise is to use the first and second lags just in the case of our main variable of interest (net migration rate), and the first lag for the independent variable and for the GDP growth. However, the education variables, the government debt and older employment are not found in our preliminary analysis to be affected by endogeneity.

In Tab. 2, the Sargan test which has the null hypothesis of “the instruments as a group are exogenous” has a high p-value of 0.45, which suggests that the null cannot be rejected. The Arellano – Bond test for autocorrelation applies to the differenced residuals and has the



null hypothesis of no autocorrelation. The test for AR (1) process in first differences rejects the null hypothesis in the case of model reported in Tab.2, while the AR(2) test does not detect autocorrelation in levels.

In Tab.2, out of the four measures of economic inequality, just the Gini coefficient is explained upon the same set of explanatory variables as in model 3 of Tab.1, but using the GMM estimator this time.

The results are very close to those reported in Tab.1 model 3, and they are supportive for the analysis and conclusions above. Additionally, the Gini coefficient in the previous year is a significant determinant of the Gini coefficient in the current year.

Tab.2 Determinants of Gini coefficient

Explanatory variable	Gini
Independent variable L1	0.67*** (0.07)
Net migration	-0.04*** (0.01)
L1	0.01 (0.01)
L2	0.01** (0.007)
GDP growth	-0.005 (0.01)
L1	0.0009 (0.007)
Tertiary education	0.006 (0.01)
Lifelong learning	-0.06** (0.02)
Older employment	-0.002 (0.01)
Government debt	-0.01** (0.004)
Constant	2.11*** (0.71)

Notes. System GMM estimator, 2000-2011, 10 SE European countries; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

In Tab.3 the same determinants examined in Tab.1 are used this time to explain the poverty risk, separately for each income quartile. Only the significant regression coefficients are reported. The poorest income quartile has no significant regressors. The middle income quartiles have the largest number of significant explanatory variables. The tertiary education attainments stimulate the reduction of poverty risk, but only in the case of the second quartile,



while the net migration rate is a factor of the poverty risk reduction, just for the third income quartile. The most important determinant of the poverty risk reduction is found to be the employment of older people, because this variable is a significant regression coefficient in 3 out of 4 regression models in Tab 3. The government debt could be associated with the decrease of poverty risk, but just for the third income quartile.

It is interesting to note that the poorest and richest quartiles are difficult to be targeted, and that the most responsive policy measures concern the middle income quartiles. The employment of older people seems to be a powerful policy measure with positive effects across most income quartiles. Surprisingly, the poverty risk of the poorest income quartile cannot be reduced by any of the policies suggested by the explanatory variables in Tab. 3.

Table 3. The determinants of poverty risk upon the income quintiles

Explanatory variables	Poverty risk Q1	Poverty risk Q2	Poverty risk Q3	Poverty risk Q4
Net migration	-	-	-0.55*** (0.27)	-
GDL growth	-	-	-	-
Tertiary education	-	-0.52** (0.25)	-	-
Lifelong learning	-	-	-	-
Older employability	-	-1.10*** (0.34)	-0.96*** (0.32)	-0.89*** (0.24)
Government debt	-	-	-0.28*** (0.14)	-

*Note: Random effects GLS regression; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.; Period of reference: 2000-2011, 10 SE European countries.*

CONCLUSIONS

The continuous increase of the tertiary education attainments, the enrolling of a higher number of persons into the lifelong learning process from one year to another, as well as the dynamics of migration flows within the SE European region, are among the most interesting processes developing in the SE Europe. They could generate significant effects on the income inequality, poverty risk and subjective well-being.

The most important empirical results of our analysis could be summarized as follows. The increase of the net migration rate could contribute to the decrease of income inequality and poverty risk. The tertiary education attainments seem to aggravate subjective well-being,



but allow reducing the poverty risk. Compared to the tertiary education attainments, the lifelong learning is a more powerful determinant of income inequality and subjective well-being. The increase of older' employability determines the decrease of poverty risk for most income quartiles, while improving subjective well-being. The government debt allows decreasing both the income inequality and poverty risk.

While the effect of the net migration rate is constant and positive across most our inequality, poverty and well-being indicators, the tertiary education has a positive effect only on the poverty risk reduction, and only for a middle income quartile. In turn, the process of lifelong learning generates more positive effects on our well-being and income inequality indicators. Our empirical findings lead to the recommendation to encourage the labor mobility across the EU (particularly within the SE European area), as well as the absorption of a higher number of persons into the lifelong learning in the future. Of course, fully leveraging on the human capital potential of migrants depends on countries' ability to successfully integrate migrants.

Also, we recommend governmental policies supporting employability of the older in the SE Europe, because this provides them protection from the risk of poverty and economic insecurity. As regards the poverty risk, its disaggregation upon income quartiles suggests that the governmental policies should focus more on the poor, because at present the most responsive income categories are the middle ones.

An interesting finding of our paper regards the social impact of tertiary education. Simply increasing the tertiary education attainments without straightforwardly looking at the quality of this process and at the labour market demand could generate negative side effects, such as revealed by our analysis, i.e. the deterioration of subjective well-being.

CONFLICTS OF INTEREST AND PLAGIARISM: The authors declare no conflict of interest and plagiarism.

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