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SCHENGEN MEMBERSHIP - A DOOR FOR EMIGRATION? LESSONS FOR ROMANIA AND BULGARIA

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Abstract: *The Schengen project is one of Europe's most important accomplishments as it facilitates the free movement of goods and people. Currently, Romania and Bulgaria are on the verge of obtaining their Schengen membership and, to our knowledge, not enough emphasis has been placed on the emigration and labour market implications for aspiring candidates. This research aims to empirically evaluate the liaison between Schengen Area and labour migration. In order to achieve this objective, we construct a difference-in-differences research design using data from the European Labour Force Survey. The treatment is represented by the Schengen enlargement of 2007 with Latvia, Lithuania and Estonia constructing the treatment group and Romania and Bulgaria the control group. The main results show that Schengen Membership led to increased probabilities of working abroad one year after treatment occurred as well as three years after treatment occurred. Also, we are able to identify the demographic category most likely to emigrate as young males in search for seasonal full-time jobs.*

Introduction

In the past twenty years the European Union has witnessed significant waves of migration through major political events such as the enlargement procedures of 2004 and 2007; the Syrian War which lead to the refugee crisis of 2015 (Krzyżanowski, Triandafyllidou, & Wodak, 2018) and the most recent, in 2022, the Russian invasion of Ukraine which caused at least 12 million people to emigrate towards the EU (Gerlach & Ryndzak, 2022). Even though such events cannot be foreseen and easily accounted for in terms of legislation, one must ask how will EU's own project, respectively the Schengen Area, influence the internal European migration. Considering the ongoing negotiations (European Commission, 2022) between the European Union, Romania and Bulgaria, how will the labour markets change for these aspiring candidates?

Currently, the Schengen project can be considered the EU's highest political and economic achievement as it eliminates internal border checks and thus, facilitates the free movement of goods and people. In order for one aspiring candidate to join the Schengen Area, it has to fulfil a set of criteria stated in the Acquis (Huybreghts, 2015). Once accepted, member countries are certainly expected to benefit from increased freedom of movement and reduced trading costs, among others. However, should future candidates such as Romania and Bulgaria, member states which have already received a formal approval from the European Commission (European Parliament, 2022), have any reasons for concern? More precisely, should the future Schengen members expect an exodus of labourers as seen before in the previous East-West migration wave of the early 2000's? This possibility will be empirically tested through a difference-in-differences (DID) estimation in the remaining of the paper. The political postponement of Romania's and Bulgaria's accession to the Schengen Area, together with the previous Schengen enlargement made in 2007, provide control and treated groups that will represent the starting point for this specific analysis. Estonia, Latvia and Lithuania will each represent a treatment group, whereas Romania and Bulgaria will separately act as control groups. Therefore, through the DID model, we will be able to understand how does Schengen Membership influence the labour markets for upcoming countries.

To the author's knowledge, few to none scientific papers have emphasized on any Schengen Membership emigration risks for incoming candidates as most of the literature on the subject targets immigration (Vullnetari & King, 2016) or the social inclusion of immigrants (Stan & Erne, 2014) (Markova, 2010) (Jendrissek, 2016).

The remaining of this chapter is structured as follows: the first part is an overview of the existing literature on Schengen, migration and EU membership effects; the second part presents the data and methodology; the third part summarizes the main findings; the fourth part consists in a discussion of the results; the final section is represented by the conclusion and main policy recommendations.

Literature review

In the following literature review section Schengen Area studies will be analysed in order to find the most recent results and novel methodologies on this topic. Secondly, the migration phenomenon will be evaluated in the European context in order to extrapolate any past tendencies that might have influenced labour markets and human capital.

Schengen Area Studies

A substantial share of Schengen literature investigates either immigration related issues (Alkopher & Blanc, 2017) or security threats that rest at the borders (Karamanidou & Kasparek, 2020). It is found that future Schengen enlargements are questioned by current members as the before mentioned security risks generally contribute towards a state of uncertainty for the general public. Therefore, there is a substantial outside-in research direction being developed in the literature but without capturing the inside-out flow of migration nor the inside-in, respectively between existing member states. However, one exception consists in a paper of (Parenti & Tealdi, 2019) which captures the inside-in flow of migration after Switzerland admission to the Schengen Area. Under the specifications of a difference-in-differences methodology, the authors found that inter-state work related commuting increased with approximately 5% while simultaneously at lowered transition costs.

Considering the limited number of identified Schengen migration studies, as well as a set of ambiguities surrounding the Schengen project underlined in a meta-analysis of (Votoupalová, 2020) , the current paper aims at bringing valuable insights regarding labour market changes caused by intra-EU migration.

EU Migration Studies

The speed and volume of migration inside the European continent have increased severely (Taylor & & Martin, 2001) in the last century, mainly as a consequence of two major political events. Firstly, the fall of communism determined an east-west wave of migration, from the former communist countries towards the more developed western ones with a series of strong socio-demographic consequences (Vullnetari & King, 2016) (Lucero & Collum, 2007) and labour market implications (Stan & Erne, 2014) (Woolfson, 2007). Secondly, the enlargement procedures

of 2004, 2007 and 2013 have significantly impacted the dynamic of the European continent as a whole (Kahanec, Zaiceva, & Zimmermann, 2009). However, the EU enlargements, as opposed to the fall of communism, did not immediately transpose in an increased migratory flow (Zaiceva & Zimmermann, 2008), proof of a lagged reaction from the general population. Nonetheless, the effects of EU membership have been observed a couple of years later. For example, in Bulgaria, a cost-benefit analysis of emigration is uncertain as both positive effects have been found through means of remittances and negative effects through a depopulation of rural regions and an increased brain drain (Markova, 2010).

At the other end of the spectrum, receiving countries of the West opposed to some degree the increased mobility caused by an enlarged European Union. A common political argument against intra-EU migration at the time could be found in the fear of rising unemployment and decreasing wages for those receiving countries (Galgoczi, Leschke, & Watt, 2013). Nevertheless, the negative impact of immigration on wages and employment was found either very small or inexistent, at least on the German labour market (Ottaviano & Peri, 2008) (Brücker & Jahn, 2008). Moreover, in the same time period, immigration was found to be positively influence employment and GDP growth in Austria (Walterskirchen, 2009).

The migration phenomenon is found in many cases to be the main cause for poor countries remaining poor as they are unable to accumulate high levels of human capital. During economic downturns, the effect aggravates as it was seen in the Spain-United Kingdom migration route (Jendrissek, 2016) (Ramos, 2018), intra-EU (Musselin, 2004) and EU-Northern America (Grigolo, Lietaert, & Marimon, 2010). Having this considered, similar migration routes for Schengen candidates cannot be neglected once borders are eliminated.

Moreover, wage disparities across regions are one of the causes of internal migration, from rural to urban areas. The newly created work force gap in the rural agricultural areas acts as a pull factor for cheap labour from less developed countries (Kaushik, 2021). Neoclassical economics consider that wage differences will fuel migration until they will be internationally equalized as labour is thought upon as a commodity, thus being subject to the same mechanisms of supply and demand. However, (Kurekova, 2011) suggests that the EU East to West migration route does not fit the

neoclassical theory as social and institutional characteristics of sending countries outweigh the wage incentives in one's decision to emigrate. Institutional weaknesses, specifically in the health and social system, are also found to be acting as push factors for sending countries (Stark & Bloom, 1985).

Generally, for the migration of highly skilled individuals we find researchers to use either publishing metrics, citations or conference participations as main source of data (Laudel, 2003) (Urbinati, Galimberti, & Ruffo, 2021). The original databases provide both country of residence and country of birth, thus providing the necessary means in order to identify if migration occurred. Even though this approach is innovative, it does not account for the migration of low skilled individuals. In this regard, a suitable solution that entails the labour force in its entirety consists of labour force surveys conducted either at a national level or international one (Odhiambo, 2013) (Cerdeira, et al., 2016) (Martin & Radu, 2012).

Data

The current section makes use of data originating from the European Union's Labour Force Surveys (EU-LFS) in order to measure the impact of Schengen Membership on labour migration. The research design will be constructed under the specifications of the difference-in-differences methodology, requiring pre and post treatment periods, as well as treated and control groups.

Firstly, the treatment is represented by the enlargement of Schengen Area made in year 2007. Secondly, the time periods are twofold: firstly, a short-term period model is constructed using data from one year before and after treatment occurred; secondly, a long-term period is constructed using data from three years before and after treatment occurred. Finally, as stated earlier, the treatment group will be composed by countries that became Schengen Members in 2007, respectively Latvia, Estonia and Lithuania. The control group consists of Romania and Bulgaria, countries which are, at the time of writing, awaiting their memberships status.

The dependent variable is constructed using an EU-LFS survey question that asks the respondents for the country of place of work. Observations which registered "No answer" have been dropped

from the dataset, leaving the dependent as a binary variable with value 0 as answer for own country and value 1 for another EU country.

The independent variables consist of the age of respondents, their gender, educational attainments, the nature of their jobs, either part time or full-time jobs as well as the permanency of the jobs, either year-round or seasonal.

Table 1 presents the abbreviations, measurement and sources for the dependent and independent variables.

Table 1. Dependent and independent variables construction

Dependent Variable	**Abbreviation**	**Measurement**	**Source**
Country of place of work	*pow*	0 – own country 1 - other EU28 country	EU - LFS
Independent Variables	**Abbreviation**	**Measurement**	**Source**
Age	*age*	0 If age <= 20 years 1 If age <= 32 years 2 If age <= 47 years 3 If age <= 65 years 4 If age > 65 years	EU - LFS
Gender	*sex*	0 – male 1 - female	EU - LFS
Education Level	*edu*	0 – lower secondary 1 – upper secondary 2 - third level	EU - LFS
Full time / part time	*ftpt*	0 - full time 1 - part time	EU - LFS
Permanency of the job	*temp*	0 - permanent	EU - LFS

		1 - temporary	

Source: Data processed by the author

Table 2 presents the descriptive statistics for the data included in the model, with approximately 490.000 observations for each. With respect to *pow*, the variable of interest, a low mean value is found at 0.001. Considering the interviewing procedure that usually takes place at the respondent's house and the nature of the question which checks whether the respondent works in his own country or abroad, this value is not surprising. The majority of respondents who do work abroad are not expected to be in their home country at the time of the interview. In regards to *age*, most of the respondents have between 32 and 47 years, with at least upper secondary educational attainments. Additionally, most of the respondents have full-time, year-round work contracts.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
pow	491502	.001	.035	0	1
sex	491502	.484	.5	0	1
age	491502	2.607	.792	1	5
ftpt	490556	.024	.153	0	1
edu	491502	2.152	.561	1	3
temp	486637	.026	.16	0	1

Source: Data processed by the author

Table 3 provides evidence of no strong correlation among the selected variables and the dependent variable. This fact would imply that one's decision to work abroad is not directly attributed to demographical characteristics or academic results. A weak positive relation is found between the two variables that capture the nature of the work contracts, respectively *ftpt* and *temp*. According

to the table, we also observe a weak positive correlation between *sex* and *edu*, indicating that females, on average, tend to have better educational attainments.

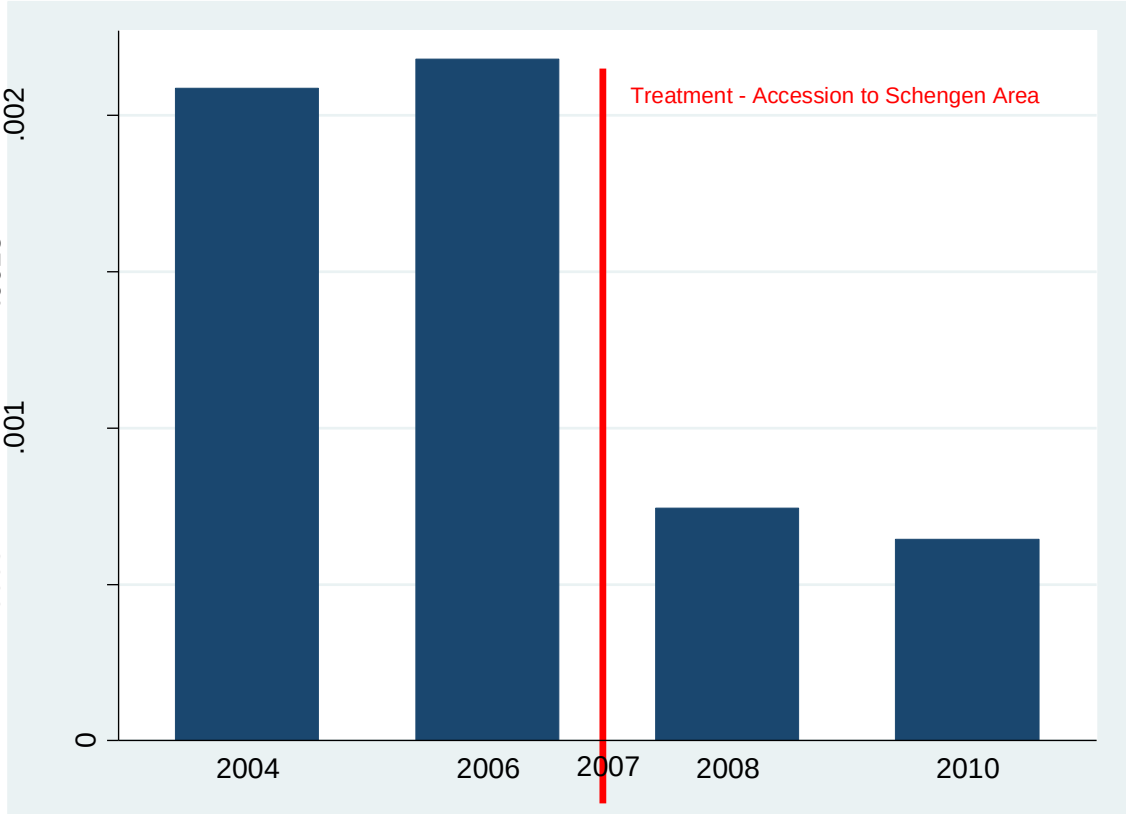
Table 3. Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) pow	1.000					
(2) sex	-0.024	1.000				
(3) age	-0.017	-0.006	1.000			
(4) ftpt	-0.005	0.060	0.023	1.000		
(5) edu	-0.009	0.098	0.014	-0.012	1.000	
(6) temp	0.099	-0.021	-0.043	0.117	-0.099	1.000

Source: Data processed by the author

According to Graph 1, a significant decrease is found in the mean of *pow*, respectively in one's decision to work in another country after the treatment occurred in 2007. The observed decrease opposes the theory according to which a border elimination would contribute to an increased outflow of working people. Firstly, this effect could be attributed to a diminishing pool of workers that have already settled down in their receiving countries, year on year. A secondary reasoning consists in the exogenous shock surrounding the economic crisis of 2007 that reduced the number of job opportunities (Tilly, 2011). A third justification can be found in increased trust and foreign direct investments towards the job markets in the sending countries (Clifton-Sprigg, 2022). The current chapter will attempt to verify the previously mentioned effects, as well as to provide further insights.

Graph 1. Mean of POW over time



Source: data processed by the author

If we decompose the educational attainments of workers based upon their country of work, either own country or another EU28 country, we find that the majority has obtained upper secondary education (Graph 2). However, it can be observed that significantly fewer people with lower secondary and third level education are employed abroad. For those with lower secondary education barriers such as language or information act as deterrents until migration networks are formed in receiving countries (Garip & Asad, 2015). However, there is no direct answer for the decreased mobility of those with tertiary education as reasons could range between intrinsic motivations for workers to succeed in their own country and political interest to improve the condition of those respective sending countries. Additionally, in regard to the overall educational attainment of workers, we do find constant improvements for both treated and control group countries after joining the Schengen Agreement.

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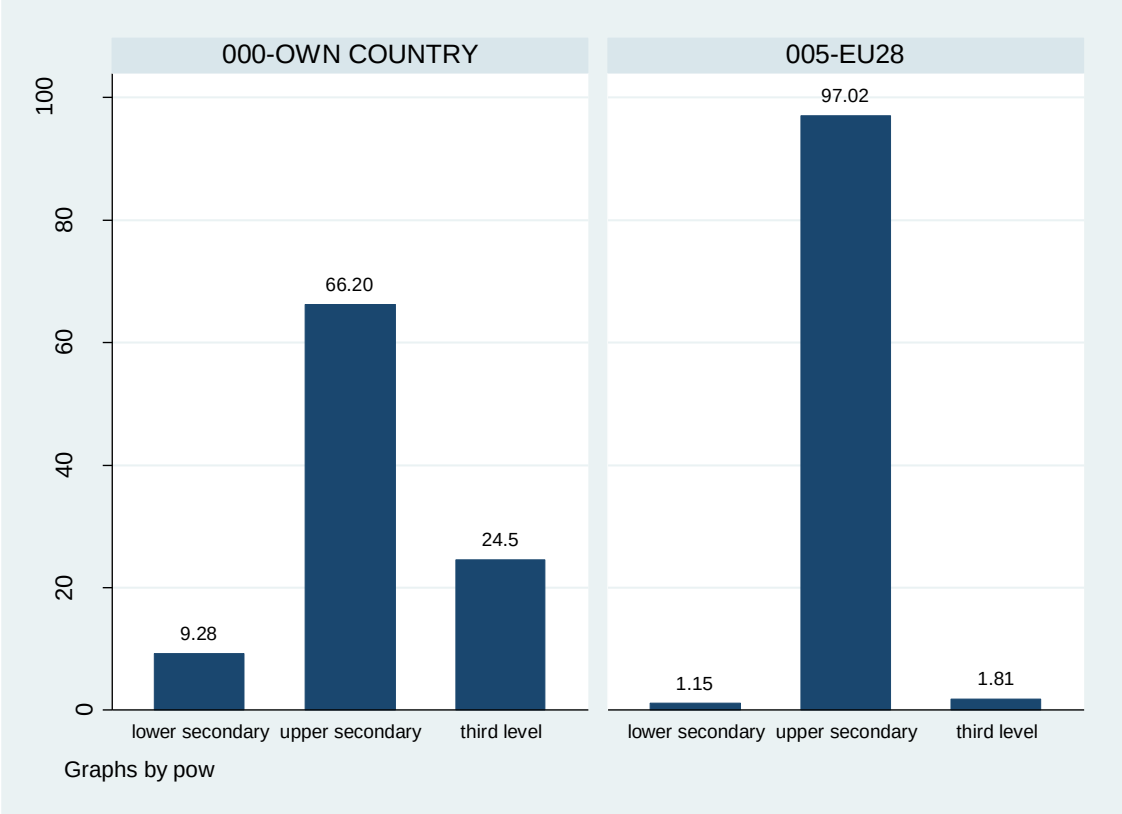
Graph 2. Educational attainments of the labour market



Source: data processed by the author

Model and econometric regression

The equation line of the difference-in-differences regression model can be found bellow:

$Yi = \alpha + \beta Ti + \gamma ti + \delta (Ti * ti) + b * age + c * edu + d * sex + e * ftpt + f * temp + \varepsilon i$, where:

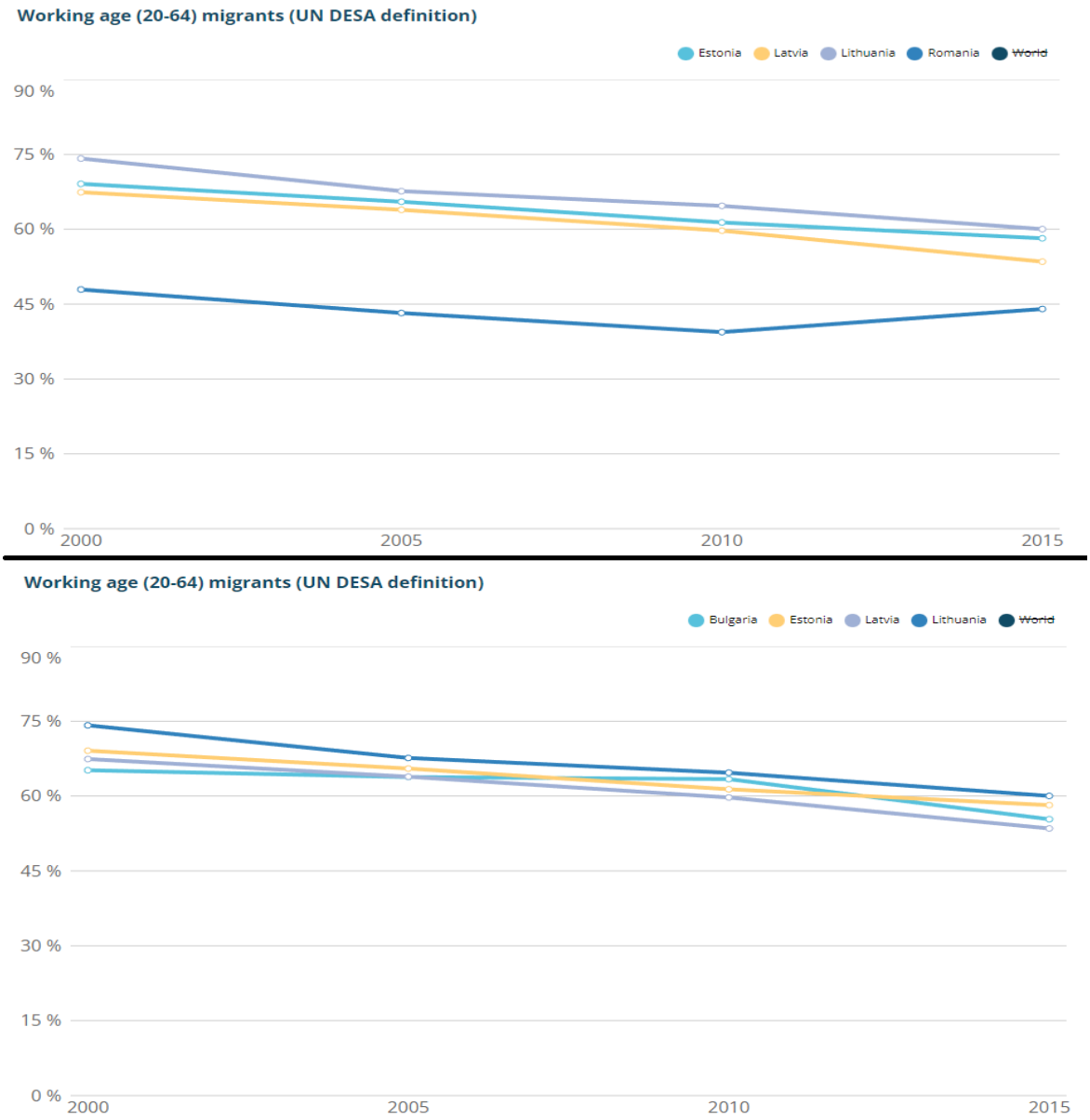
- α = constant term
- β = treatment group effect
- γ = time trend common to control and treatment groups
- δ = true effect of treatment

- T = treatment status (0 for control group, 1 for treated group)
- t = time period (0 before treatment, 1 after)
- b,c,d,e,f = slopes of *age*, *edu*, *sex*, *ftpt*, *temp*

Due to the binary nature of the dependent variable, the regression estimates will have to be interpreted under the conditions of a Linear Probability Model. This fact determines an increased accuracy of the model, similarly to those provided by the logistic regression (Heckman & Snyder Jr, 1997). Moreover, the DiD model allows for the inclusion of covariates which capture the changes determined by the treatment (Abadie, 2005), respectively the Schengen Area membership.

Before proceeding to running the model, the parallel trend condition has to be verified. The assumption is that in the absence of the treatment, the dependent variable's outcome for both groups, treated and control, follows a parallel evolution over time (Roth, Sant'Anna, Bilinski, & Poe, 2022). In order to verify this condition, the current study takes advantage of data from the Global Migration Data Portal, respectively the indicator that captures the working age migrants as a percentage of the total migrant population. Therefore, according to Graph 3, the assumption is verified having Romania as the control group in the upper-side of the graph, and Bulgaria as the control group in the lower-side of the graph.

Graph 3. Parallel trend assumption check for DiD



Source: Migration Data Portal

Table 4 presents the short-term DiD estimates having the coefficient of interest coded as

did_treatmentcountry_controlcountry. Therefore, using data for one year after admission, Schengen membership caused a decrease in the probability of a worker choosing a workplace outside their own country with 0.85%-0.9% for the pairs Lithuania-Romania and Lithuania-Bulgaria, ceteris paribus. However, the opposite effect is found for Estonia and Latvia, where Schengen membership increased the probability of working abroad with 0.6% and 0.1% respectively.

With respects to age, it is found that older respondents have a lower probability of working abroad compared to the young respondents for all selected treated and control pairs, ceteris paribus. However, on average, the effect can be considered small, with values around 0.01% and not statistically significant for Estonia-Romania and Latvia-Romania. In addition, male workers are found more likely to choose a workplace in a different country when compared to female workers in all treatment-control pairs, ceteris paribus.

When it comes to deciding on the permanency of work contracts, workers choosing full time employment are less likely to emigrate than those with part time jobs, with around 0.1% and 0.9%. Furthermore, workers searching for a temporary contract have a higher probability of choosing a workplace outside own borders when compared to those opting for permanent working contracts. The highest values in this regard are found in Lithuania with 3% to 5%, followed by Estonia with 1% and Latvia with 0.6% to 1.2%.

In regards to educational attainments, a statistically significant impact is found only for the treated-control pairs of Latvia-Bulgaria and Estonia-Romania. However, even in these respective pairs, the effect of education on a worker's decision to search employment in a different country is lower than 0.01%, ceteris paribus.

Table 4. Short term DiD effects

Variable	LtRo1	LtBg1	EeRo1	EeBg1	LvRo1	LvBg1
time1	-.00075018***	0.000	-.00098937***	-0.000	-.00101344***	-0.000
sex	-.00113396***	-.00146976***	-.00242012***	-.00403973***	-.00079158***	-.00064724***
age	-.00075869***	-.00171606***	-0.0009	-.00047799*	0.000	-.00020748*
ftpt	-.00938655***	-.00796958***	-.0062809***	-.00534489***	-.0021273***	-.00136479**
temp	.04980558***	.03489686***	.01724194***	.00917448***	.01234888***	.00683878***
edu	0.000	.00067239***	-.00044203***	-0.000	0.000	0.000
didLtRo1	**-.00856128*****					
controlLtRo	.00871538***					
didLtBg1		**-.00980368*****				

controlLtBg		.01059213***				
didEeRo1			**.00629805***			
controlEeRo			.00345947**			
didEeBg1				**.00560729***		
controlEeBg				.0041732**		
didLvRo1					**.00139727***	
controlLvRo					-.00154827**	
didLvBg1						**0.001**
controlLvBg						-.00068137**
_cons	.00243199***	.00253258***	.00317623***	.0039525**	.00099493***	.00071283*

legend: * p<0.05; ** p<0.01; *** p<0.001

Source: data processed by the author

The long-term effects of Schengen membership are provided in Table 10 having the same model specifications as in Table 9. Yet again, even three years after treatment occurred, Schengen membership negatively impacted the probability of a worker of choosing a workplace outside own borders for the pairs Lithuania-Romania and Lithuania-Bulgaria. However, increased probabilities

of working abroad are found for Estonia and Latvia as a consequence of joining the Schengen Area.

With regards to age, an older respondent is less likely to emigrate in search for a workplace when compared to a younger one with values between 0.02% and 0.07%. According to Table 10, gender plays an even more significant role than age as a male worker is more likely than a woman worker to leave their countries' border in search for employment.

Furthermore, a full-time worker has a 0.2% to 0.6% increased probability of choosing a workplace in a different country compared to a part time worker, ceteris paribus. Moving forward, a seasonal worker has an increased probability of working abroad when compared to a year-round, permanent worker, with values between 0.2% to 3.3%. As in the short-term model, education does not have a statistically significant impact on *pow*.

Table 5. Long term DiD effects

Variable	LtRo3	LtBg3	EeRo3	EeBg3	LvRo3	LvBg3
time3	-0.000	-0.000	-0.000	-0.001	-0.000	-.00090572***
sex	-.0006599***	-0.000	-.00148635***	-.00353968***	-.000778***	-0.000
age1	-.00037524***	-.00073917***	-.0002438**	-0.000	-.00021053**	-0.000
ftpt	-.00338608***	-.00157248**	-.00650563***	-.00449445***	-.00281937***	-0.000
temp	.03389541***	.0133637**	.03188659***	.00435431***	.02164517***	.00187852***

edu	0.000	0.000	-.00022142***	-0.001	0.000	0.000
didLtRo3	-**.00646002***					
controlLtRo	.00582268***					
didLtBg3		-**.00687958***				
controlLtBg		.00716437***				
didEeRo3			**.00703028***			
controlEeRo			-.0006688*			
didEeBg3				**.00777142***		
controlEeBg				-0.000		
didLvRo3					**0.001**	
controlLvRo					-.00221872***	
didLvBg3						**.00110652***
controlLv						-

Bg						.00096789*
_cons	.00147542***	.00160203**	.00219258***	.004326**	.00132173***	.00101122*

legend: * p<0.05; ** p<0.01; *** p<0.001

Source: data processed by the author

Discussion

Comparing the overall results of Table 4 and Table 5, it appears that an additional two years of Schengen Area membership did not significantly affect the magnitude of the coefficients. Increased openness towards working in a different country, three years post admission is found in Estonia and Lithuania. In the case of Latvia, no straightforward inference is possible on the effects of time over treatment as the long-term estimates remain unchanged compared to the short-term ones. In other words, the current study presents evidence of two countries in which the elimination of borders and removal of passport checks facilitated an increased willingness for workers to leave their own country in the search for better employment opportunities.

The newly created emigration risk, if not accounted for, will contribute to losses of human capital, productivity and tax revenue for sending countries that are looking forward to join Schengen Area. As highlighted by (Thaut, 2009), emigration becomes a solution towards socio-economical difficulties in the less developed countries of Eastern EU. However, tailor suited counter policy measures should aim at reducing the incentives for individuals to emigrate. In this regard, the current paper's contribution consists in providing policy makers detailed demographic insights on those most likely to emigrate. In line with the results of (Bouchoucha, 2010) and (Danzer & Dietz, 2014), for both short- and long-term estimations, males are found more likely to emigrate when compared to female in order to secure the necessary financial means for a family. Work-related migration decisions are found to change together with age as older respondents are less likely to emigrate in search of a job opportunity. Younger workers facing higher financial pressure are

therefore more likely to emigrate from new Schengen members to older, more developed ones (Šmigelskas, Starkiene, & Padaiga, 2007). On a general note, the main push factors that should be addressed consist of low wages (Kumpikaitė-Valiūnienė, 2019), a lack of job opportunities, inequality and even weak social protection.

From the selected list of covariates, education had the only insignificant statistical impact on the decision to work abroad in most of the treatment-control pairs. Contrary to prior research (Borgonovi & Pokropek, 2019), the only significant effect was found for Estonia-Romania, case in which higher educational levels determined a lower probability for migration.

According to the results presented in Table 4 and Table 5, full-time jobs are much more likely to act as pull factors for workers when compared to part-time ones, mainly because of the better payment and increased financial stability that come along. Similarly, seasonal jobs are more attractive when compared to permanent jobs as they offer more flexibility to migrants. This fact exposes a seasonal migration pattern which is common for most low skilled agricultural labourers (Augère-Granier, 2021).

Conclusion

Considering that Romania and Bulgaria are soon to become a part of the Schengen Project, the current chapter analysed the potential membership impact on labour markets and migration patterns in order to provide policy recommendations for future candidates.

A primary contribution towards this line of research consists in the identified results, which highlight increased probabilities for work emigration after Schengen Membership with values between 0.1% and 0.9% on both short- and long-term model specifications. Contradictory results have been found for Lithuania, where further research is required in order to clarify the cause of these opposing migration patterns.

A secondary contribution consists in identifying the most likely workers to emigrate as being young males searching for full-time, seasonal employment opportunities. This finding should facilitate the design of future emigration policy countermeasures as the main demographic has been identified.

Considering these two contributions put forward by the current chapter, we are now able to understand how much Schengen Membership influences work migration and who are the people that are the most likely to leave.

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