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SCHENGEN MEMBERSHIP - A DOOR FOR EMIGRATION? LESSONS FROM THE 2007 ENLARGEMENT

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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.*

Key words: *human capital, migration, Schengen Area, Romania, Bulgaria.*

1. Introduction

Starting with the largest enlargement procedure of 2004, the European Union (EU) started to register significant waves of migration at an unprecedented pace and scale. A decade later, 2015 was considered the year of Europe's refugee crisis (Krzyżanowski, Triandafyllidou, and Wodak, 2018). In 2022, around 12 million Ukrainians fled (Gerlach and Ryndzak, 2022) their home country towards the West as a consequence of the ongoing crisis. Although outside shocks such as wars cannot be easily predicted and accounted for, how do the European Union's own policies contribute towards the migration phenomenon? As Schengen Area negotiations are currently a hot topic on the agenda of the European Parliament (European Parliament, 2022), one must ask what

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socio-economic changes will the current candidates, respectively Romania and Bulgaria, face on the short and long term after the accession takes place.

In its current form, the Schengen Area is one of the European Union's most successful projects as it facilitates the free movement of more than 400 million citizens by eliminating border checks. In order to become part of the Schengen, member states need to fulfil the requirements stated in the Schengen Acquis (Huybreghts, 2015). The current candidates have successfully checked all these requirements and have received the formal approval of the European Commission (European Commission, 2022).

As the advantages of becoming a member of the Schengen area are numerous and mainly correlated with the increased freedom of movement, we ask ourselves which are the disadvantages and downsides for new member states, if any at all. Intuitively, we expect an associated risk to consist in the possible labour migration from new member states to older member states. This risk will be empirically tested and verified in the remaining of the paper.

In this regard, we observe that the admission of Romania and Bulgaria has been politically delayed due to a lack of voting consensus in the Council. This postponement, together with the previous Schengen Area enlargement of 2007, naturally provide a treated group and a control group that will serve as the starting point for the current paper. From the new members of 2007, due to their similar characteristics, Estonia, Latvia and Lithuania will form the group that benefited from the treatment whereas Romania and Bulgaria will remain as control group.

To our knowledge, this approach focusing on risks concerning new members has not yet been used for measuring the membership impact as most existing studies focus on measuring the outside-in flow of migration (Vullnetari and King, 2016) and social implications of migration [(Stan and Erne, 2014) (Markova, 2010) (Jendrissek, 2016)].

More specifically, through a difference-in-differences methodology we are able to understand how does the Schengen Area membership, thus an EU Policy, affect an individual's decision for choosing a workplace outside national borders and inside another EU28 country. Furthermore, we account for individual characteristics such as age, gender or educational attainments and labour market characteristics.

The remaining of the paper 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.

2. Literature review

The following literature review section is twofold. Firstly, we investigate the Schengen area studies in order to evaluate if any similar approaches and results have been discovered. Secondly, we proceed to analyse the migration phenomenon on a larger European scale rather than strictly under a Schengen perimeter.

2.1. Schengen Area

We find a plethora of recent studies that analyse the Schengen Area through an immigration-related approach (Alkopher and Blanc, 2017) and associated border and safety risks (Karamanidou and Kasparek, 2020). It can be observed that attitudes and perceptions towards security inside the Schengen contribute to a weakened public support towards the project as a whole, thus jeopardising future enlargements. As this line of research focuses on how outside immigrants are integrated and perceived inside Schengen, we find few papers that capture the consequently emigration flows that arise from Schengen Membership. In this regard, we take note of a paper by Parenti and Tealdi (2019), which study cross border commuting as a consequence of Switzerland joining the Schengen agreement. Using a difference-in-differences estimation, the authors find increased commuting flows with values from 3% to 6% and decreasing commuting costs. Similarly, our analysis will evaluate the changes in the countries where respondents work.

In a meta-analysis of the existing Schengen literature, (Votoupalová, 2020) highlights a number of ambiguities regarding this European project. Therefore, our purpose is to enlighten EU policy makers on one set of specific consequences of enhanced freedom of movement, respectively emigration from new members to older members.

As we find a limited number of intra-Schengen migration studies, we need to focus our attention towards the migration phenomenon in the European Union and European territory as a whole. By doing this we intend to find related research and highlight the identified scientific gap.

2.2. Migration in the EU

Certainly, migration is a phenomenon which is currently growing faster than ever before in human history and is posing great challenges towards policy makers of the 21st century (Taylor and Martin, 2001). Inside the European continent, the speed and volume of migration increased through two major geopolitical events.

Firstly, as communism began to fall among eastern European countries, the early east-to-west waves of migrants started to emerge with strong socio-demographic (Vullnetari and King, 2016), (Lucero and Collum, 2007) and labour market (Stan and Erne, 2014); (Woolfson, 2007) implications. The second event at stake is actually a series of enlargement procedures made in the European Union that include 13 new member states from 2004 to 2013 (Kahanec, Zaiceva, and Zimmermann, 2009).

More specific, The EU enlargement procedures of 2004 and 2007 have drawn a lot of attention from the scientific community from a plethora of perspectives. Closely after the accession of Romania and Bulgaria, Zaiceva and Zimmerman (2008) observe a quiet evolution for migration and a slow mobility throughout the European Union, especially for highly skilled individuals.

In regards to migration, labour markets and human capital a consensus has not been reached on whether sending countries' benefits outweigh the costs. In the case of Bulgaria, emigration was found to be both beneficial through decreased levels of

poverty and increased number of businesses funded by remittances, as well as detrimental through a depopulation of peripheral regions and an observed brain drain (Markova, 2010).

On the other hand, receiving countries have been found to have reluctant standpoints towards increased mobility at early stages of the enlargement procedures. An opposing political argument implied that free mobility of labour will determine rising unemployment and falling wages in receiving countries (Galgoczi, Leschke, and Watt, 2013). Nevertheless, the negative impact of immigration on wages and employment was found to be either very small or inexistent, at least on the German labour market (Ottaviano and Peri, 2008); (Brucker and Jahn, 2008). Similarly, for the Austrian labour market, the immigration effect on employment and GDP growth was found to be highly positive (Walterskirchen, 2009).

One can argue that the lack of a developed labour force in poor countries is also one of the reasons for those countries remaining poor. Moreover, according to Stark, Helmenstein and Prskawetz (1998) these less developed countries fail to secure any kind of formed human capital due to the migration phenomenon. This phenomenon is considered to be highly accentuated in times of crisis as it has been observed by Jendrissek (2016) and Ramos (2018) especially for the migration from Spain towards the United Kingdom. Similarly, there has been an observed transition of highly skilled individuals intra-EU (Musselin, 2004), mostly on the East-West route, as well as from EU towards Northern America (Grigolo, Lietaert, and Marimon, 2010). Therefore, we cannot neglect the possibility for similar migration routes in the case of future Schengen candidates, routes that policy makers from sending countries ought to consider.

In regards to data selection for migration research topics, we do observe the tendency of some researchers to opt for datasets that are constructed around publishing metrics such as citations and conferences participations (Laudel, 2003; Urbinati, Galimberti and Ruffo, 2021). In such databases, the residency and country of origin of the researcher are provided and inferences are drawn. Simultaneously, others opt for a more direct approach in database construction by using labour force surveys which include educational levels amongst other variables (Odhiambo, 2013; Cerdeira et al., 2016; Giousmpasoglu, Marinokou and Paliktzoglu, 2016; Martin and Radu, 2012). We find the second approach to be a more suitable one for our research, as it addresses a more extensive share of the labour force.

According to neoclassical economics, human capital has been observed to shift from rural to urban areas in order to access higher paying jobs while agricultural lands in developed countries have attracted labour force from less developed countries (Kaushik, 2021). It is considered that the driving factor of migration consists in pre-existing differences in labour markets which will be exploited until expected wages will be internationally equalized. Nevertheless, more recent tests of this theory expose weaknesses in the underlying assumption of wage differentials (Kurekova, 2011). We expect the same migration shifts to occur in the case of Schengen Area membership as travel barriers disappear and labourers from poorer countries seek to maximize their potential incomes in higher earning countries. Additionally, pull factors for emigration can be found in the health systems and social systems of receiving countries (Stark and

Bloom, 1985), which in the Schengen perspective can be found in the older member states.

3. Data and Method

The aim of the current methodology is to measure the impact of Schengen Membership on work migration using a difference in difference research design.

The data used in this paper originates from the European Union's Labour Force Surveys (EU-LFS) which includes yearly results on labour participation for Member States citizens older than 15 years. More specifically, in order to check the requirements of the difference-in-differences research design data was collected for pre and post treatment periods as well as for treated and control countries.

In regards to the time frame, a short-term period of one year before and after the accession has been selected, hence year 2006 and year 2008, together with a long-term period of three years before and after, hence year 2004 and year 2010. For the countries that have received the treatment, meaning accession to the Schengen Area, we have selected Latvia, Estonia and Lithuania whereas the control countries are composed of Romania and Bulgaria.

The dependent variable consists of the country of work of the interviewed person. By using this variable, we are able to observe if an individual works in a different EU28 country apart from his country of origin. The independent variables consist of age, sex, educational attainment, the nature of the job, either be it full time or part time and the permanency of the job.

Variables list Table 1

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	*age1*	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 1 - temporary	EU - LFS

The equation line of the difference-in-differences regression model can be seen below as follows:

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

More specifically, the equation follows a linear probability model (LPM) which consists of a classic ordinary least square regression with a binary outcome variable. The main advantage of this technique is represented by the clarity with which coefficients can be interpreted and reported. Furthermore, we can consider the LPM estimates to be as accurate as those estimated through a logistic regression (Heckman & Snyder Jr, 1997). Furthermore, according to (Abadie, 2005) the difference-in-differences estimation facilitates the inclusion of covariates in order to report how the effect of the treatment, in our case Schengen Area Membership, shifts with changes in observed characteristics such as demographic factors or work preferences.

The difference-in-differences relies upon one key assumption, respectively in the absence of the treatment, the treatment group and control group outcomes need to have a parallel evolution over time (Roth, Sant'Anna, Bilinski, and Poe, 2022). In order to verify this assumption, data from the Global Migration Data Portal was included in Graph 1 with the upper side of the graph containing the treatment countries and Romania for control and the lower side treatment countries and Bulgaria for control. The indicator plotted in order to verify the assumption is the working age (20-64) migrants as percentage of total migrant population. As it can be observed, the assumption holds for both Romania and Bulgaria before the accession of Estonia, Latvia and Lithuania.

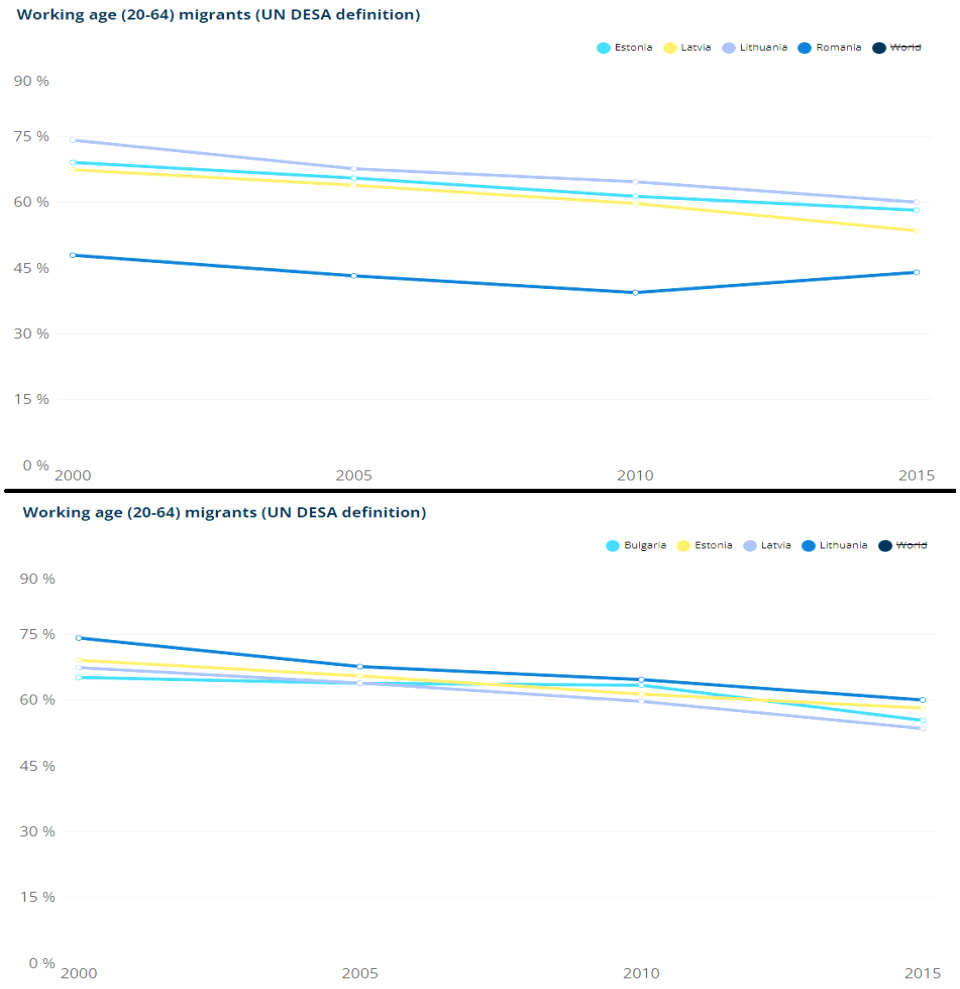

Fig. 1. *Parallel trend assumption*, source: Migration Data Portal

The variables included in our database are quantitative discrete variables and contain on average around 490.000 observations (Table 2). In regards to the mean values of the data, we firstly point towards the relatively low mean of our variable of interest, respectively pow. This comes as no surprise due to the nature of the variable itself which captures the number of people in one specific country, at one specific time, that work either in that respective country or in another country in the European Union. We expect that people working in another country tend not to be in their origin country at the time of the interview. Secondly, the mean for age1 indicates that the average age of the respondents is between 32 and 47 years, whereas their educational attainment is on average at least upper secondary. Finally, in regards to the nature of the jobs, we find the majority of jobs being full time and permanent contracts.

Descriptive statistics Table 2

Variable	Obs	Mean	Std. Dev.	Min	Max
pow	491640	.001	.035	0	1
age1	491640	1.607	.792	0	4
sex	491640	.484	.5	0	1
ftpt	490693	.024	.153	0	1
temp	486773	.026	.16	0	1
edu	491502	1.152	.561	0	2

In order to have a deeper understanding of the data we proceed by evaluating our variable of interest (Graph 2), respectively POW, and the educational attainment of respondents (Graph 3) which we expect to have a significant impact in our study. By analysing the evolution of the dependant variable over time, we observe a significant decrease in the number of people that replied with working in another country after the accession to the Schengen area. The effect observed in Graph 2 is currently opposing the idea that a cancelation of borders will actually encourage a rise in the number of people working abroad. We find three possible justifications for the shifts observed in Graph 2. Firstly, people who initially left their country-of-origin pre-treatment might not return and might not find themselves amongst the post-treatment interviewed respondents. Secondly, one may also argue that the economic crisis surrounding the treatment time decreased the pace of migration by fewer job opportunities and increased unemployment rates (Tilly, 2011). Thirdly, post Schengen accession and EU integration, local labour markets could have benefited of drastic improvements through new foreign direct investments thus acting as a pull factor for migrants of sending countries (Clifton-Sprigg, 2022).

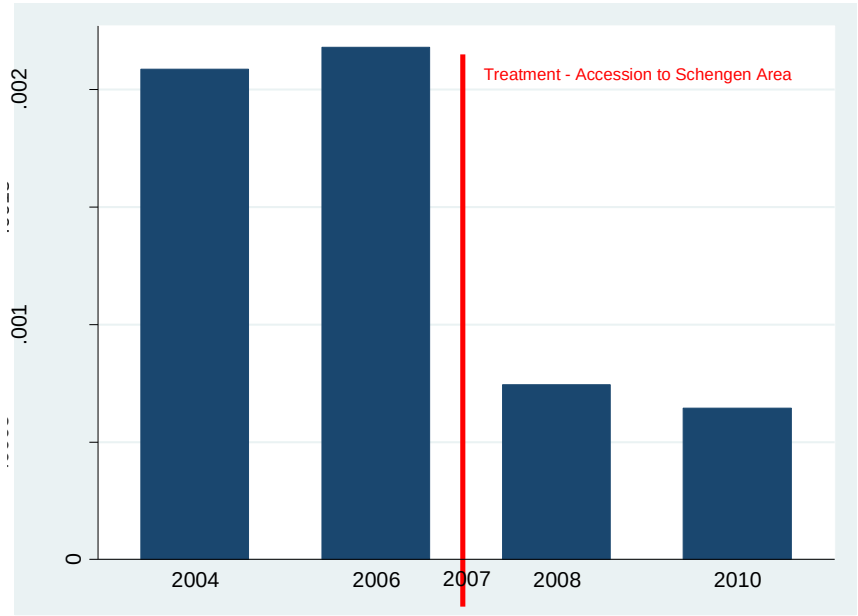

Fig. 2. *Mean of POW over time*, source: data processed by the author

On the left side, Graph 3 entails the educational attainment of respondents who, one year before interviewed, worked in their country of origin, whereas on the right side those who worked in another EU28 country. From the pool of respondents, it is rather clear that the most common form of educational attainment is upper secondary, 66.2% for those working in their own country and 97.02% for those working abroad. Nevertheless, significantly fewer people with lower secondary and third level education decided to change countries for a job. Firstly, this could be attributed to different departure barriers such as language or access to information regarding job openings for those with lower education. For those with higher education, there is no straightforward reasoning for why they would not opt for a job abroad. One might argue that internal job markets are satisfactory for those with higher education, or even intrinsic motivations to succeed in own country are predominant.

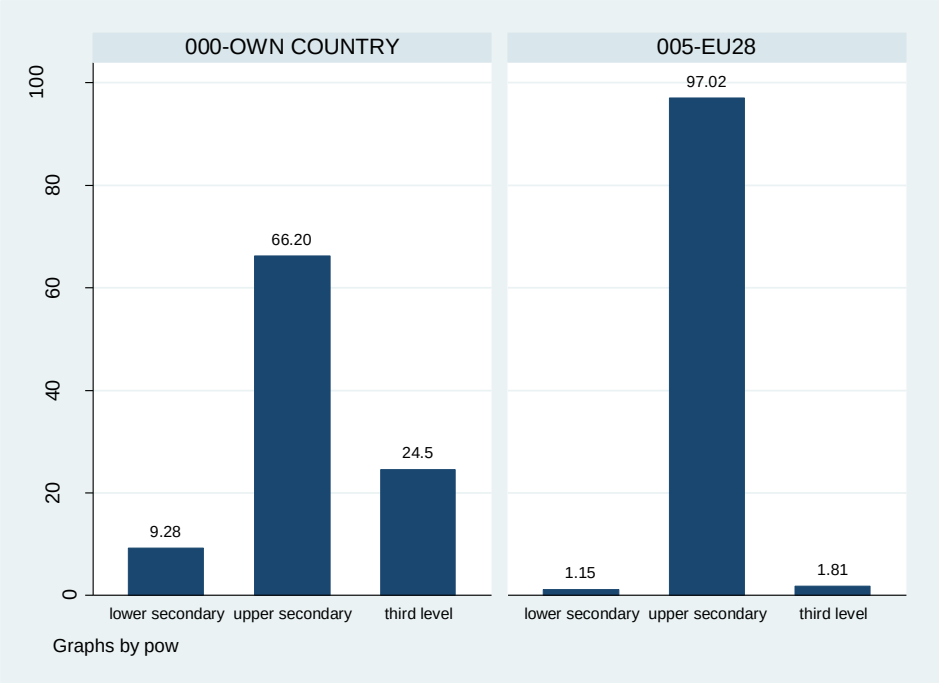

Fig.3. *Respondent's educational attainment*, source: data processed by the author

Table 3 captures the regression coefficients for our study when using Romania and Bulgaria as control countries for Lithuania, Estonia and Latvia on a short-term period, meaning one year after the treated countries received the treatment.

The coefficient of interest that captures the effect of the difference-in-differences estimation is the one coded as *did_treatmentcountry_controlcountry*.

We find that the treatment, respectively joining the Schengen area, negatively impacted the probability that a worker will opt for working abroad instead of its own country with approximately 0.9% in the case of Lithuania. The opposite effect is observed for Estonia and Latvia, where joining the Schengen Area led to an increase in the probability of working abroad with 0.6% and 0.1% respectively.

With respects to gender, we find that the probability of choosing a workplace in another country is approximately 0.1% lower for female respondents compared to male respondents. This is valid for all treatment-control pairs, ceteris paribus. Similarly, for the age criteria, we find that the older respondents have a lower probability of working abroad when compared to the younger respondents. Nonetheless, this effect is found statistically insignificant for the treatment-control pairs of Estonia-Romania and Latvia-Romania.

In regards to the nature of the job contracts, for a one-unit change in the rating, the probability of working abroad will decrease with values between 0.9% and 0.1%, ceteris paribus. Furthermore, for a one unit increase in the permanency of the job, from permanent to temporary, the probability of choosing a job outside own country boundaries increases with 3% to 5% in Lithuania, 1% in Estonia and 0.6% to 1.2% in Latvia.

The educational attainment presents, in most cases, no statistically significant effect on a respondent's decision to work in their own country or another EU28 country. The only two exceptions can be found when choosing the pairs Latvia-Bulgaria and Estonia-Romania in which cases the magnitudes of the effect are considerably small.

Short-term effects Table 3

Variable	**LtRo1**	**LtBg1**	**EeRo1**	**EeBg1**	**LvRo1**	**LvBg1**
time1	-.00075018***	0.000	-.00098937***	-0.000	-.00101344***	-0.000
sex	-.00113396***	-.00146976***	-.00242012***	-.00403973***	-.00079158***	-.00064724***
age1	-.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

Table 4 provides the long-term effects of becoming a Schengen Area member when using the same treatment and control countries as before. In the current framework, we observe similar evolutions for the difference-in-difference coefficients three years after the treatment occurred as compared to one year after. Therefore, we find that the effect of the treatment negatively impacts the probability of the respondent choosing a workplace in another Schengen country in Lithuania with approximately 0.6%. Positive effects of the treatment are found for Estonia and Latvia, with the only exception of Latvia-Romania where the difference-in-differences estimator has no statistical significance.

For the gender criteria, a female respondent has approximately 1% to 3% decreased probability of working abroad compared to a male respondent.

For entering into a new age segment, the probability of a respondent working abroad decreases with 0.02% to 0.07% for the analyzed countries, ceteris paribus. Furthermore, a part-time employee had a 0.2% to 0.6% decreased probability of working abroad when compared to a full-time employee. Simultaneously, a worker with a seasonal contract has a 0.2% to 3.3% increased probability of working in a different EU28 country compared to a worker with a permanent contract. Similarly, to the short-term effects, educational attainment does not present a statistically significant impact over one's decision to work abroad on the long run.

Long-term effects Table 4

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* **
controlLvBg						-.00096789*
_cons	.00147542***	.00160203**	.00219258***	.004326***	.00132173***	.00101122*

4. Discussion

As results unfold, we find similar effects for our short- and long-term estimations. In this respect, an additional 2 years post-treatment did not change the direction of our difference-in-differences estimator nor of the covariates. As open borders do not immediately transpose to increased labour mobility, we would expect that the magnitude of the long-term effects to be higher. Nevertheless, this expectation only holds in the case of Estonia, irrespective of the chosen control country, where Schengen Area membership positively contributed to an increased probability of working in another EU28 country. In the case of Lithuania, we find that for more years of Schengen membership, the individuals become less reluctant towards working abroad. We might argue that a diminishing negative possibility, as observed for Lithuania, will eventually converge to an increasing positive possibility, as it is observed for Estonia. For Latvia, an inference on short versus long term effects is rather complicated as the dimension of the treatment remains almost unchanged from one year post accession to three years post accession.

In terms of demographic characteristics, we have accounted for the age and gender of respondents. According to our findings, males have a higher probability of working abroad when compared to females, in both short- and long-term estimations. The justification behind can be found in a traditional social model where men are more likely to migrate for securing financial means to the family (Bouchoucha, 2010). The above-mentioned findings are also in line with the ones of (Danzer and Dietz, 2014) according to which males are 5% more likely to migrate when compared to females.

Age plays a factor as well, as the older the respondents get, the less likely they are to leave their own country in the search for a job opportunity. As stated by (Šmigelskas, Starkiene, and Padaiga, 2007), younger people are more willing to take risks and emigrate from the Baltic states, as the financial incentives have an increased weight.

Contrary to our expectations, the effect of educational attainment of respondents was found either very small or statistically insignificant. Even in the few cases where educational attainment did have an interpretable effect, the identified direction was contrary to previous research. More precisely, when using the treatment-control pair Estonia-Romania, we find that higher educational levels lead to a decreased probability of working abroad, whereas previous identified literature supports a positive education-migration correlation (Borgonovi and Pokropek, 2019).

The final two elements in our model related to the nature of the jobs, full time - part time and permanent - temporary, are also the ones that have the highest impact over one's decision regarding the place of work. Irrespective of post treatment time selection, we find that a full-time job contract is much more sought-after when deciding upon work migration in another EU country. This is a confirmed expectation as a full-time job provides a higher payment, thus more financial stability. A temporary work contract is found to positively influence one's decision for working abroad when compared to a permanent work contract. In fact, this unveils a seasonal migration model in which migrants tend to work abroad for a short period of time and then return to the sending country.

5. Conclusions

As Schengen negotiations are currently a top priority on the external affairs agenda of Romania and Bulgaria, our purpose for this paper has been to analyse the previous Schengen enlargement of 2007 and provide recommendations for current candidates. As the foundation of Schengen relies on freedom of movement, we decided to highlight migratory consequences with a focus on the labour force.

We found that after accession, the Schengen Area membership alone contributed towards an increased probability of work emigration for the labourers in new member countries such as Estonia and Latvia with values ranging from 0.1% to 0.9%. Using our two different time specifications we were able to observe a small increase in the labour emigration propensity for Latvia and Estonia three years after accession compared to only one year after accession.

Further research is required in order to clarify why using Lithuania as a treatment country yielded opposing results as our current study does not provide exhaustive empiric evidence on why the effect differs compared to Estonia and Latvia. In this specific case, the probability of work emigration decreased with values ranging from 0.5% to 0.9% after Schengen accession.

Nevertheless, based on our results, we are able to profile the most likely person to work abroad as a young male in search of a seasonal full-time job. This is a starting point for discussion and policy recommendations as we have already captured the impact of the treatment, respectively the impact of Schengen Area membership. Combining the two set of results, future candidates for Schengen are now able to understand how much Schengen membership alone will influence work emigration and who are the people that emigrate the most. These elements should allow for a calibrated and targeted labour and migration policy strategy for current candidates such as Romania and Bulgaria in the years following accession.

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