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The Impact of Studying Abroad on Economic Activity of Graduates

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The Impact of Studying Abroad on Economic Activity of Graduates

JEL Classification: I23, I26, J21, J24

Keywords: *studying abroad; human capital; graduates; employment rate; PSM method*

Abstract

Research background: Over 200,000 of European students study abroad under the Erasmus mobility program in the course of their higher education. It seems that employers may treat students' participation in international exchange programs as a signalling tool, since according to them international students' skills – both cognitive and non-cognitive – are well above the average. On the other hand, students participating in exchange programs underline a positive impact of studying abroad on their personal development, i.e. on their general skills. Thus, from a theoretical point of view we may expect a positive correlation between studying abroad and economic activity after graduation, which follows from both signalling theory and human capital theory. On the average, 54% of European students report that participation in Erasmus exchange program helped them to obtain the first job, but interestingly, those from the CEE countries, including Polish students, report it much more often.

Purpose of the article: The aim of this paper is to determine whether studying abroad has an impact on the employment rate of higher education graduates in Poland over the first few years after graduation.

Methodology/methods: We used the *propensity score matching* (PSM) method and data from a representative, nationwide tracer survey of Poles who graduated from secondary schools or higher education institutions over the period of 1998-2005.

Findings: The results of the analysis show that Polish students who completed at least one semester of their studies abroad do not benefit in terms of a higher employment rate after graduation.

Wpływ studiowania za granicą na aktywność zawodową absolwentów

Kody JEL: I23, I26, J21, J24

Słowa kluczowe: studia za granicą; kapitał ludzki; absolwenci; stopa zatrudnienia; metoda PSM.

Abstrakt

Tło badania: W Europie ponad 200 tysięcy studentów rocznie uczestniczy w międzynarodowej wymianie w ramach programu Erasmus. Dodatkowo około jedna trzecia tej liczby studiuje za granicą korzystając w tym celu z innych programów wymiany lub finansując kształcenie ze środków własnych. Wydaje się, że studiowanie za granicą może być źródłem wielu umiejętności przydatnych w pracy zawodowej, ale jednocześnie może ono sygnalizować posiadanie jeszcze przed wyjazdem na stypendium takich umiejętności, które sprzyjają mobilności zagranicznej, na przykład: znajomości języków obcych, otwartości na doświadczenie, zaradności, komunikatywności. Z teoretycznego punktu widzenia można spodziewać się pozytywnego związku kształcenia za granicą z aktywnością ekonomiczną po zakończeniu edukacji formalnej. Na występowanie takiej zależności wskazują opinie byłych uczestników wymian w ramach programu Erasmus – w ogólnoeuropejskim badaniu 54% z nich twierdzi, iż kształcenie za granicą pomogło im w podjęciu pierwszej pracy. Co ciekawe, odsetek ten jest dużo wyższy w krajach Europy Środkowo-Wschodniej, w tym również w Polsce, gdzie wynosi 73%.

Cel badania: Celem artykułu jest stwierdzenie, czy kształcenie za granicą ma pozytywny wpływ na stopę zatrudnienia absolwentów wyższych uczelni w Polsce w początkowym okresie po zakończeniu kształcenia formalnego.

Metoda: Analizę przeprowadzono przy użyciu techniki PSM (*propensity score matching*) oraz danych jednostkowych z reprezentatywnego w skali kraju badania absolwentów szkół średnich i wyższych, którzy zakończyli edukację formalną w latach 1998-2005.

Wyniki: Wyniki wskazują iż, kształcenie przez co najmniej jeden semestr w zagranicznej uczelni nie ma wpływu na stopę zatrudnienia absolwentów szkół wyższych w Polsce.

Introduction

Owing to the Erasmus programme, the number of students participating in the international student exchange has increased significantly over the last years in Poland – while in the academic year 1998/99, i.e. the first year of Poland's participation in Erasmus, ca. 1,400 Polish students benefited from Erasmus grants, in 2013/14 this group reached ca. 15,000 (Członkowska-Naumiuk & Smolarczyk, 2015). It seems that the participation in an international student exchange can be a source of many valuable skills that may be useful in one's professional life. This thesis is confirmed by the results of evaluation studies: studying abroad results in a better command of foreign languages (Szubert & Skrętowska 2013) and in development of such soft skills as: curiosity, openness to experience, adaptability, flexibility, endurance, resourcefulness, innovativeness, team work (Bracht et al. 2006; Gallup Organization 2011; European Commission 2014).

From the theoretical point of view, one might expect that the enhanced skills of exchange students will be reflected in their better position in the labour market after graduation, including a higher probability of finding a job. This follows from both the human capital theory and the signalling theory. This correlation seems to be supported by the opinions expressed by graduates – 54% of the Erasmus exchange students report that participation in the program helped them to obtain the first job. Interestingly, Polish students, as well as those from other the CEE countries, report it much more often, namely in 73% of cases (Janson et al., 2009). On the other hand, the existing studies based on objective measures do not provide any definite answer to the question, whether studying abroad results in a higher employability (Wiers-Jensen & Try 2005; Oosterbeek & Webbink 2006; Gajderowicz, Grotkowska & Wincenciak 2012; Orru 2014; Di Pietro 2015).

The aim of this paper is to determine whether studying abroad has an impact on the employment rate of higher education graduates in Poland over the first few years after graduation. We used the propensity score matching (PSM) method and data from a representative, nationwide tracer survey of Poles who graduated from secondary schools or higher education institutions over the period of 1998-2005.

The paper is structured into five sections. In the first section we discuss the theoretical background of the impact of studying abroad on the individual's position on the labour market. The second and the third section present data and analytical methods. The fourth section presents the results of empirical analysis. At the end of the article the most important findings are summarised.

1. Theoretical background

The effect of studying abroad on the individual's position in the labour market can be explained based on the human capital theory and the signalling theory. From the human capital theory perspective (Becker 1964), studying abroad can be considered as an investment in the human capital. Firstly, the student acquires knowledge and skills as a result of attending courses at a foreign higher education institution. Secondly, one may expect that the stay abroad will provide some extra-curricular competences, including linguistic and cultural competences, a combination of which Murphy-Lejeune (2002) refers to as mobility competences. Thirdly, travelling abroad can be an opportunity to improve such non-cognitive skills, as openness to new experience, resourcefulness or extraversion.

Based on the signalling theory (Spence 1973; Arrow 1973) one may assume that even if studying abroad does not provide any competences that are useful in the labour market, the very decision to undertake education abroad is a proof of having certain skills that are valued by employers. Firstly, the fact of attending a renowned university is an indication of high cognitive skills, these being needed at the recruitment stage as well as in the course of education itself. Secondly, studying abroad may testify high non-cognitive skills, such as openness to new experience, endurance, extraversion, emotional stability. Thirdly, the fact of having studied abroad signals the ability to communicate in a foreign language. Completing the planned course – be it one semester under an international exchange programme, or a complete cycle of studies – indicates that the individual demonstrated above-average skills even at the moment of going abroad. Obviously, these skills might have been improved during the stay abroad – in accordance with the human capital theory – but even if this is not the case, then, according to the signalling theory, the persons who studied abroad should be better perceived by employers. Consequently, their position in the labour market should be better than that of individuals who studied in their home country only.

2. Data

The analysis is based on data from a representative, nationwide tracer survey of Poles who graduated from secondary schools or higher education institutions over the period of 1998-2005.¹ The survey was carried out by

¹ The survey was carried out for the purpose of evaluation of a governmental active labour market programme addressed to graduates (the „First Job” programme).

the Central Statistical Office of Poland (GUS) in the years 2006-2007, for the Ministry of Labour and Social Policy. The survey was focused on the economic activity of graduates over the period of the first three years after the completion of formal education, with special attention to the first job after graduation. The nation-wide survey comprised a sample of 20 251 graduates who completed their schooling between 1 January 1998 and 31 December 2005 (at basic vocational schools, technical secondary schools, general secondary schools, post-secondary schools, universities). The study population was limited to individuals who did not exceed 27 years of age at the time when their schooling ended and the break between the next-to-last and the last stage of education was not longer than 12 months. The research sample consisted of 5433 university graduates, including 139 persons who studied abroad for at least one term.

3. The analytical method

The potential bias caused by endogeneity of participation in foreign education is the main methodological problem when analysing the effects of studying abroad. In order to reduce the bias, the Propensity Score Matching (PSM) was used. The method involves matching the treatment group (those studying abroad) to a control group which consists of individuals who did not study abroad, but their probability of undertaking education abroad was similar to that of the treated individuals. This probability (propensity score) is computed based on the observable characteristics of individuals at the moment of undertaking the university education, i.e. before going to study abroad. The effects of studying abroad are analysed by comparing the treatment group and the control group in terms of their position on the labour market after graduation. For this study, the employment rate was taken as a measure of the position in the labour market.

The probability of studying abroad for at least one semester was estimated using the following probit model:

$$(1) \quad SZ_i = X_i\beta + \varepsilon_i$$

where: dependent variable (SZ_i) is a discrete one and takes value 1 for those studying abroad for at least one semester in the course of university education and 0 otherwise, X_i is a vector of variables representing individual characteristics and the features of education they have undertaken, while ε_i is the random error. The probit model estimation results are presented in Table 1.

When matching the samples based on the propensity score value, the nearest neighbour method was used. We matched five individuals from the

control group to each individual from a study group, thereby reducing the standard error of estimations. The procedure of matching with replacement was used, i.e. an individual from the control group could be matched to only one individual from the treatment group.²

Table 1. Determinants of studying abroad

Independent variable	Coefficient	Standard error	Statistic z	Pr > z
Education programme: first cycle degree	0.488	0.218	2.23	0.025
Education programme: second cycle degree	0.506	0.202	2.51	0.012
Attending secondary school abroad	0.769	0.350	2.20	0.028
Opportunity to participate in an international exchange via the university: high	0.367	0.099	3.70	0.000
Opportunity to participate in an international exchange via the university: very high	0.934	0.101	9.21	0.000
Field of study chosen based on the wish to work abroad	0.527	0.177	2.97	0.003
Field of study: foreign languages (philology)	0.969	0.125	7.79	0.000
Field of study: engineering and technology	0.433	0.138	3.14	0.002
Field of study: agriculture, forestry, veterinary medicine	0.636	0.191	3.32	0.001
Extracurricular activities: foreign language	0.337	0.087	3.89	0.000
Extracurricular activities: sports and tourism	0.245	0.098	2.50	0.012
Place of residence: city	-0.205	0.082	-2.50	0.012
Constant	-2.872	0.208	-13.80	0.000
Pseudo R2	0.1893			
No of observations	5433			

Note: ***/**/* indicate a 1%, 5% and 10% significance level, respectively.

Source: Authors' own analyses based on unit data from the nationwide tracer survey of Polish graduates conducted in 2007.

The PSM method should allow for a balanced distribution of observable characteristics of individuals from the treatment and control group. Yet, the matching based on the propensity score did not result in a good balance of the variable which represents attending secondary school abroad. Furthermore, the dependent variable is the employment rate of graduates in the years 1998-2006, i.e. in the period of significant changes of the labour mar-

² The computations were performed in Stata/SE 13.0, using the psmatch2 command, version 4.0.11 22 oct2014.

ket in Poland.³ Hence, matching individuals who graduated in different years might result in a bias. Therefore, a mixed matching pattern was used – exact matching (1:1) based on two variables: year of graduation plus attending secondary school abroad, and nearest neighbour matching based on the probability of studying abroad (propensity score).

The analysis of matching quality shows that the control and the treatment groups are well matched. Without matching the mean values of almost all variables in the treatment group and the control pool are significantly different, while after matching these differences become statistically insignificant. This means that the individuals who did not study abroad but were included in the control group are very similar in terms of observable characteristics to those individuals who studied abroad.

In the second step of the PSM procedure, ATT was estimated to illustrate the effect of studying abroad on the employment rate, i.e. on the probability of finding any paid employment (including also assistance to a sole trader and performing paid work without any written contract) for at least one hour per week. Hence, the category of jobless persons includes not only the unemployed and non-active population, but also those who perform unpaid work, e.g. as volunteers or interns. In order to find out, how long after graduation – if ever – any effects of studying abroad can be observed, we estimated ATT for four time points: the moment of graduation and 6, 12 and 18 months after graduation. Standard errors were bootstrapped by performing 500 replications.

4. The findings

Table 2 summarises the results of estimating the effects of studying abroad on the graduates' employment rate. Columns (1) and (2) show the mean employment rate for the treatment group and the control pool. The first one includes graduates who studied abroad at least one semester, the other one – all respondents who studied in Poland only. Column (3) shows the difference between the employment rates from columns (1) and (2). The table shows that the employment rate is relatively high even at the moment of graduation – it amounts to 57% for those who studied abroad and 49% for those who studied in Poland. The employment rate grows relatively fast in both groups within the first 6 months after graduation, to achieve 82% and 72% respectively. The growth continues in the next year, although its

³ According to the BAEL survey, the employment rate decreased from 51.0% in 1998 to 44.0% in 2003, to grow to 46.5% in 2006. In the same periods, the unemployment rate was 10.6%, 19.6% and 13.8% respectively (GUS 2007).

progress is slower – up to the level of 88% and 79% respectively. Thus, irrespective of the time that expires after graduation, the persons who studied abroad are facing a higher probability of employment than those who studied in Poland. The difference of 7-10 percentage points between employment rates is statistically significant at 10% level (see: column (3)). Yet, this difference is a result of comparing unmatched groups, hence the result may be biased due to differences between the treatment group and the control pool in terms of their observable and unobservable characteristics that have an effect on the probability of studying abroad and on the probability of employment at the same time.

Table 2. The effect of studying abroad on the graduates' employment rate

Time after graduation	Not matched			ATT		
	treatment group	control pool	difference	treatment group	control group	difference
	(1)	(2)	(3)	(4)	(5)	(6)
0 months	0,568	0,494	0,074*	0,568	0,493	0,075
6 months	0,825	0,722	0,103***	0,825	0,785	0,039
12 months	0,848	0,766	0,082**	0,848	0,828	0,020
18 months	0,885	0,794	0,091**	0,885	0,850	0,035

Note: ***/**/* indicate a 1%, 5% and 10% significance level, respectively.

Source: Authors' own analyses based on unit data from the nationwide tracer survey of Polish graduates conducted in 2007.

After matching the difference between employment rates at the moment of graduation again amounts to 7% but it is not statistically significant any longer (see: column (6)). This difference clearly decreases within 6-18 months after graduation – from 8-10 percentage points before matching, to 2-4 percentage points after matching – and as a result it loses its statistical significance (see: columns (3) and (6)). This means that individuals choosing to study abroad have observable characteristics that are conducive to performing paid work. Yet, studying abroad itself does not determine the probability of employment, either at the moment of graduation, or within the next 18 months.

5. Conclusions

The results of the analysis show that Polish students who completed at least one semester of their studies abroad do not benefit in terms of a higher

employment rate after graduation. Although those who studied abroad are more likely to find paid employment after graduation than those who studied only in Poland, this difference can be explained by differences between both these groups in terms of their observable characteristics that determine studying abroad. To put it differently, individuals who study abroad have some skills that help them both undertake education abroad and find a job after graduation as well. But studying abroad itself does not have any impact on the probability of employment after graduation.

This finding contradicts the human capital theory, but it can be explained based on the signalling theory. Following the signalling theory, participation in an international exchange or even more – graduating from a university abroad – can be perceived by employers as a signal of candidate's high abilities and skills and thereby determine the employment decision.

The fact that there is no causal effect between studying abroad and employment after graduation may also indicate that there are other motivations behind taking part in international student exchanges than purely educational. Students may be choosing to participate an international exchange programmes just for the sake of travelling, which may negatively affect the educational effects.

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