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The Demand and Income Effect of Internal Educational Migration in Academic Centres – the Case of Opole

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In cities with large educational institutions, the inflow of educational migrants is important for consumption demand, and can trigger multiplier effects. The main aim of this article is to show the mechanism of the aggregate demand-income effect created by educational migration in the Polish city of Opole. An estimate of this effect is provided, based on questionnaire research among a sample of 1 075 students from all institutions of higher education located in the city. The estimated effects analysed concern the direct consumption impulse, as well as the indirect job creation and increase in income for providers of accommodation for students, in turn triggering increased consumption demand. While the results must be interpreted with care, an estimated 15 per cent of consumption demand created through expenditure of migrant students (about PLN 175 400 000) and 485 extra jobs show the significance of such expenditure for the local economy.

Keywords: educational migration; demand effect; income effect; the influx area

Introduction

Migration has become an important issue in the public debate, while remaining a subject of ongoing scientific research. In recent centuries, migration has played an important role in Polish history. During the Communist era, many people left the country for political reasons (Stola 2010). At the beginning of the 1990s, some former emigrants returned, causing a stimulus of investment in small and medium-sized enterprises (Jończy 2003). Poland's membership of the European Union and the opening of the labour markets of EU countries has resulted in an estimated 2.5 million Polish people living abroad (CSO 2017). This has reduced unemployment, while supporting consumption expenditure, construction of houses etc. by way of income transfers (Jończy 2010; Kaczmarczyk 2006; Solga 2013). Migration and its economic, social and demographic consequences have been widely discussed in literature on economic development (e.g., Herbst and Sobotka 2014; Jończy 2010; Okólski 2011; Solga 2014; Todaro 1997). Although it is easier (e.g. fewer bureaucratic barriers), internal

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migration follows the same logic as international migration. In the Polish context, educational migration related to higher education is a topic worth studying. When, say, 20 per cent of the population of a city consist of students, as in the city of Opole, this clearly must influence the cultural, social and demographic sphere. However, migration for educational reasons not only involves students moving to academic cities in order to live there. It also concerns the large numbers of extramural (weekend) students visiting the city during many weekends of the academic year.¹ When the share of students in the total population is large, and academic centres face an influx of students from its surrounding areas, this can have a serious impact on the local labour market, as well as the real estate market and markets for goods and services. This causes an increase in aggregate demand, and, depending on the available factors of production, can lead to multiplier effects.

This article focuses on the demand and income effect generated by internal educational migration.² The demand and income effect can occur when new consumers arrive to the city, increasing the demand for products and services as well as income in the local economy. The higher demand increases local households' incomes, and the rising incomes lead to an increase in the quantity of demand of good and services (Bodvarsson and Van den Berg 2009: 125).³ The aim of this article is to show the mechanism of the aggregate demand-income effect created by educational migration in the Polish city of Opole (approximately 120 000 inhabitants, including 25 000 students), and to provide an estimate of this effect based on questionnaire research among a sample of 1 075 students from all institutions of higher education located in the city. Based on the students' answers about expenditure and statistical data on household expenditure, the multiplier effect of these expenditures is examined.

This article is structured as follows. The first section presents a literature review concerning the impact of migration on the market of goods and services. This is followed by an elaboration with regard to the changes in the local markets for goods and services, after which the method and stages of the research are discussed. The final section presents the most important results of the research on the aggregate demand and income effect generated by educational migration in the Opole academic centre.

Before considering the results of the research, it is important to describe the situation of Opole. The city is the capital of the Opole Voivodeship (province), the smallest voivodeship in Poland in terms of population and area. Opole and the Opole voivodeship are characterized by their inter-metropolitan location and high number of residents with double citizenships (Polish and German). Opole's location between the two economically strong regions in the south-western part of Poland – the Lower Silesia Voivodeship in the west and the Silesia Voivodeship in the east – reduces its attractiveness for, broadly put, physical and human capital (Maj 2014: 137). As a consequence, effects identified for Opole may even be stronger for academic centres like Wrocław (the capital of Lower Silesia). The second characteristic – a large number of residents with double citizenship (an estimated 20–25 per cent of the population (Jończy, Rauziński and Rokita-Poskart 2014)) – is primarily the result of migration to Germany at the turn of the 21st century. As a consequence of Opole's location, the foreign migration (as well as other economically strong reasons) and the demographic situation in the area has deteriorated to the point of demographic crisis, characterised by depopulation and high variability in demographic structures (Rauziński 2012). Within this context, the inflow of students is an important issue for the urban development of Opole – all the more so because the city has one of the highest ratios of students to population in Poland.⁴

Literature review concerning the impact of migration on the receiving area

Internal educational migration is a process of influx of students into academic centres, which can be treated in a similar way as immigration. As the available literature on the impact of internal educational migration is limited, the theoretical background in this article relies on more general studies into international migration.

In the context of a declining and ageing population, immigration is an important factor in dealing with labour market shortages, as it affects the size, spatial distribution, age and gender structure of the population of the inflow area (Potrykowska and Śleszyński 1999: 15). Migration to a region results in a reduction of the average age of the population, as the vast majority of migrants are younger than the host population (Marchwica 2011: 8; Münch and Hoch 2013: 3; Okólski 2013: 21; Rakowska and Rakowski 2009: 365–367; Siddiq, Baroni, Lye and Nethercote 2010: 47–50; Thorsby 1998: 9).

In addition to its demographic impacts, migration affects the economy in different ways. This article focuses on local commodity and service markets and the labour market, as these are elementary in an initial assessment of the multiplier effects of migration. As migration increases the size of the population, this is likely to increase consumption demand and demand for housing, which in turn may lead to an increased demand for labour. When migration is permanent, labour supply increases, which reduces shortages (or increases excess supply) on the labour market (Bodvarsson and Van den Berg 2009: 296; Gordon 2007: 40; Saiz 2003: 19; Saiz 2007; Siddiq, Halterman, Nethercote, Sinclair and White 2009: 41). Many studies into the impact of migration on the labour market of the inflow area focus on the impact on labour supply from a macroeconomic perspective (Borjas 2004; Camarota 1997; Dustmann, Fabbri and Preston 2005; Gross 2002; Hsieh and Kohler 2007; Jean and Jimenez 2007; Kustec 2012; Nickell and Saleheen 2009). Less attention is paid to the mesoeconomic impact of migration on the local labour market (Jøensen 2007; Scott-Clayton 2012). The available literature with a mesoeconomic perspective examines the impact of influx of people on the size of local labour supply as well as unemployment rates (Galloway and Jozefowicz 2008), changes in remuneration levels (Boustan, Fishback and Canton 2010; Card 2005) and the impact on labour shortages in certain sectors (Akbar 2015; Kaczmarczyk, Stefańska and Tyrowicz 2008; Kubiciel-Lodzinska 2012). The lowest amount of attention is devoted to the impact of migration on the local demand for work. This mechanism relates to the influx of people who, through the increase in local consumer demand, can trigger an increase in the demand for labour and lead to the creation of jobs in the local economy (Bodvarsson and Van den Berg 2009; Constant 2014; Somerville and Sumption 2009).

Similar processes can be expected to occur where internal educational migration is concerned. The arrival of university students can be treated as an additional influx of people, increasing the number of consumers and creating a specific type of consumer demand. This mechanism has been discussed by the authors of *Economic Impact Studies* (Eesley and Miller 2012; Fletcher and Morakabati 2013; Fowler and Fuller 2005; Ruggs, Rhodes and Jones 2000; Russo, van den Berg and Lavanga 2003; Steinacker 2005). It must be mentioned that the migration of students to academic cities does not only have positive consequences. An example is the so-called studentification of cities, which can be defined as socio-economic, cultural and physical transformations that occur with the influx of students into academic centres (Kotus, Rzeszewski and Bajerski 2015). When large numbers of students take up permanent residence in a city, this can be expected to cause an increase in property prices and a restructuring of the available housing as a result of relocation of permanent residents from areas with increasing student populations to other parts of the city. Moreover, in places where students are concentrated, a large concentration of shops and pubs supplying student-oriented goods and services has been observed (Anderson 2013; Hatch, Marcotte, Posik, Stewart III, Thibodeau and Glove 2015; The Independent 2004).

The effect of internal educational migration on the inflow area: equilibrium models

The impact of the influx of students on the economy of an academic city is multidirectional. However, the analyses in this article focus on the theoretical aspects of the economic impact of the influx on the local market for goods and services. This issue is ‘virtually untouched in the literature’ (Bodvarsson and Van den Berg

2009: 125). The mechanism can be explained using the standard model of a commodity and service market. The initial market situation can be compared to a small economy where prices are set by interactions between demand and supply (Bodvarsson and Van den Berg 2009: 123; Jończy 2003). This model refers to a ‘typical’ basket of goods and services consumed by an average student. The basket consists of food, clothing, housing services, gastronomy services, entertainment and recreation services, and hairdressing and beauty services.⁵

When educational migration occurs, some important changes on the local market of goods and services can be observed. Firstly, the influx of new consumers stimulates local demand, as the arrival of students in the city temporarily increases the number of consumers. Secondly, educational migration can also have an impact on the supply on local labour market. Students finding employment contribute to the increase in the supplied quantity of different goods and services demanded by the incoming students.

The mechanism described can be compared to one of the elements of the Rybczynski Theorem, which assumes that the inflow of one factor of endowment, in this case labour, leads to an increase in production of the good that uses this factor intensively (Bodvarsson and Van den Berg 2009: 123). Nevertheless, it should be emphasized that the increase in supply cannot be equally applied to all products and services available in the local economy, but primarily to those in whose production or consumption migrants are involved. The increase in supply is expected to be observed almost exclusively in the production of goods and services in the university students’ consumer basket. An explanation is that students are mostly involved in low-skilled work, mainly in the trade and service sectors,⁶ and the increase in consumption demand is directed at goods and services typically bought by students.

The increased consumption demand from students is likely to lead to an increase in employment, not only of students, but also of non-student residents. The newly employed will see an increase in their income. When this additional income is spent on locally produced goods and services, the volume of consumer demand increases once more. This first step in the multiplier effect is likely to increase production and local income, as prices are unlikely to increase. While this fundamentally depends on the availability of unused factors of production, the Rybczynski Theorem implies that with an influx of student labour, production possibilities increase. This may eventually lead to lower production costs, reducing or eliminating pressure on prices to change, even if a strong increase in local demand is observed.

In reality, the changes on the goods and services market in Opole and other academic centres will undoubtedly differ slightly from the changes presented above. First of all, it is unlikely that there existed, in reality, an initial local market equilibrium. In addition, it is questionable whether supply and demand curves will shift equally. Furthermore, the slope of the demand and supply curves provide analytical challenges, especially with regard to student housing. Supply on the real estate market tends to be very inelastic in the short run. The slopes of the demand and supply curves depend on many factors. As a consequence of the influx of educational migrants, an increase in demand can be observed in the local market for goods and services, as well as an increase in the number of employees, which in turn leads to an increase in supply, changing the market equilibrium. This effect is not taken into consideration. Finally, it should be noted that with regard to the analysis of the economic consequences of migration for the goods and services market, there are still ‘big missing pieces to the theoretical puzzle’ (Bodvarsson and Van den Berg 2013: 132).

Method of research and estimates

The calculation the effects generated by educational migration for the local economy of Opole was based on the results of quantitative research conducted in the period 2013–2015. A survey using paper questionnaires of 23 questions was carried out among students from selected field of study at all universities located in Opole.

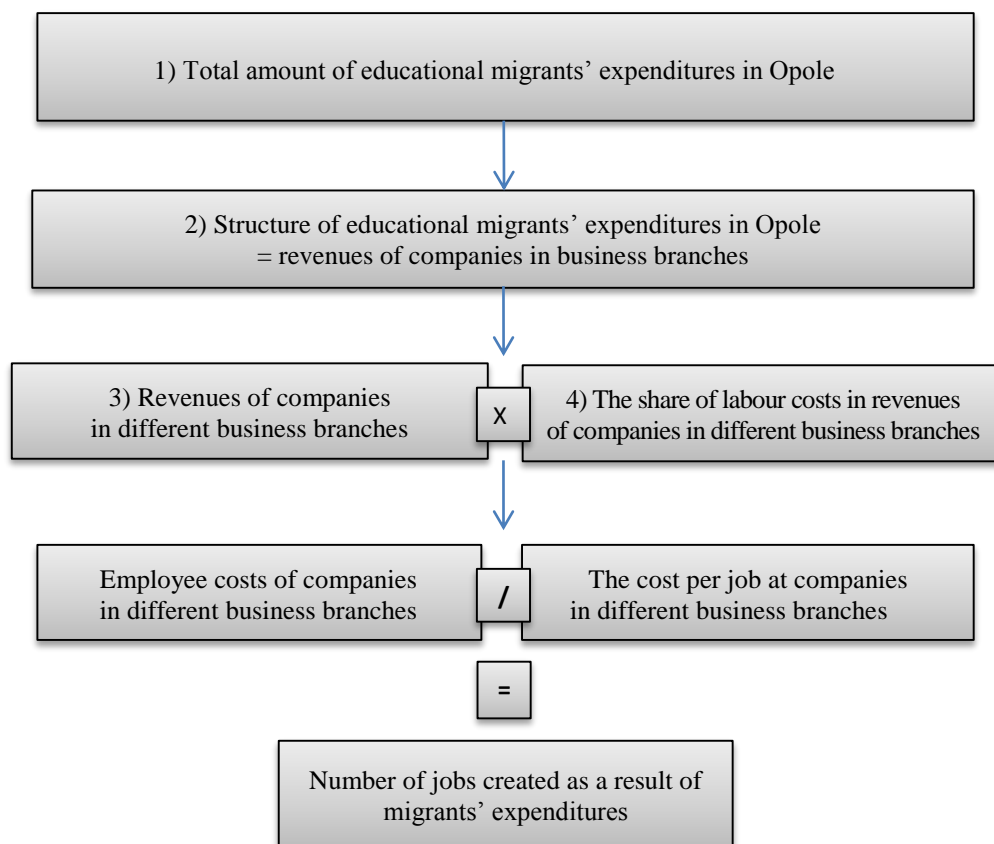
The first step in the research process was to select the fields of study according to the framework of the International Standard Classification of Education (ISCED) for the Opole academic centre.⁷ The next step was to conduct research among students in the selected areas of study. The data were gathered at moments when the class attendance was relatively high and the students' presence had been verified by the lecturers. All students were asked to complete a paper questionnaire. A total of 1 400 questionnaires were collected. Subsequently, 1 075 properly completed questionnaires were selected in such a way as to adjust the sample structure for the studied population (according to the Central Statistical Office data for Opole city) with regard to gender and areas of study. Consequently, the characteristics of the sample of researched students corresponded very closely to the characteristics of the Opole city population. It consisted of 61 per cent women and 39 per cent men; 65 per cent were full-time students, 35 per cent part-time students. According to the study results, migrants account for around 90 per cent⁸ of all young people studying in Opole. Of these 61 per cent were women and 39 per cent were men. The majority were studying full-time (64 per cent), and 36 per cent were part-time students. Migrants include both persons residing temporarily in Opole during their studies and persons commuting to the academic city from their place of residence. According to the study results, three sub-groups could be distinguished: commuters (47.6 per cent), tenants renting flats and rooms in Opole (36.4 per cent) and students living in dormitories (16 per cent). In the further analysis, only the group of students classified as migrants was taken into consideration: 967 cases.

The demand and income effects on the market for goods and services were determined as follows (Rokita-Poskart 2016b). First, a question was asked about the average monthly expenses in Opole, including expenditure for accommodation, food and soft drinks, alcoholic beverages, clothing and cosmetics, as well as entertainment and other services. This allowed the estimation of the total demand effect generated by total migrant spending.

Next, based on Wiedermann's (2008) concept of multiplier effects, the total number of new jobs created was estimated (Diagram 1). Following Wiedermann's concept, it was assumed that the main share of consumption expenditure contributes to increased sales and revenues for enterprises, and increases the demand for labour (see points 2 and 3 in Diagram 1). This assumption was confirmed by the questionnaire outcomes. However, this assumption has its limitations. Firstly, even when only expenditures that seem to become revenue for enterprises are taken into consideration, classifying these revenues remains a subjective issue. Secondly, respondents may not indicate the exact amount of expenditure in the city where they study.

Subsequently, labour costs as a percentage of enterprise revenues were estimated based on statistical data (CSO 2015b). The result was multiplied by the enterprises' revenue generated by migrant expenditures. The next step was to divide the results of the previous calculation by the unit cost of labour in given branches (CSO 2013). In this manner, the number of jobs created by the expenditures of the educational migrants in the Opole academic centre was estimated (Rokita-Poskart 2016a, b).

The next step was to estimate the additional income for two groups of beneficiaries of migrant expenditure: persons finding new employment and households providing rental services for students. The incomes for the first group were estimated using data from the Central Statistical Office about levels of remuneration in different branches of the national economy for the Opole Voivodeship. For the second group, total income was estimated based on the average expenditure on private accommodation by the migrants who declared to rent accommodations in Opole. The last step was the calculation of demand reported by the newly employed, who have gained income due to student expenditure, as well as the households gaining income by providing rental services for students. This estimation is based on data from the Central Statistical Office about the share of consumption expenditure in the disposable income of an average household member in the Opole Voivodeship (CSO 2015a). These steps enabled estimation of the increase in demand resulting from the consumption expenditure of educational migrants.

Diagram 1. Calculation concept for multiplier effect

Source: own elaboration based on Wiedermann (2008).

Some difficulties and simplifications are associated with the model applied in this paper (Domański and Gwosdz 2010). In accordance with the assumptions of the Keynesian multiplier model, it is assumed that the prices of goods and services in the local economy are fixed (or very sticky). Even if prices were assumed to be flexible, this would be very difficult to measure. One reason for this is that the influx of migrant students may result in two opposing effects. An increase in consumption demand may lead to an increase in price level when factors of production become increasingly scarce. On the other hand, the increase in labour supply may reduce the cost of labour, reducing the pressure on prices. Furthermore, it is assumed that there is no migration outflow from the area. In reality, an outflow of migrants has been observed in Opole (Jończy 2010, 2017), which reduces consumer demand and the available labour resources. Finally, a simplifying assumption is that all consumption demand from migrant students is satisfied within the city of Opole, and not outside the city.

Research data and outcomes

The transmission mechanism from the moment of a migrant student's arrival to the city through the redistribution of their income on the local market is associated with an immediate demand impulse. The research results showed that about 90 per cent of the sample consisted of migrants. Therefore, to calculate the total impact, it was assumed that 90 per cent of the total Opole student population (22 500 out of 25 000, using 2015 as a base year (Local Data Bank n.d.)) are migrants. The average expenditure per student was a reported PLN 705 per month. As the academic year lasts nine months, this creates an additional customer demand of more than PLN 142 000 000. According to the research, the largest share of expenditure concerns food, chemicals

and clothing (more than PLN 61 000 000). Other expenses include flat rent (PLN 29 000 000), payment for student dormitories (more than PLN 12 000 000), entertainment and recreation (about PLN 11 000 000), transport (more than PLN 10 000 000), gastronomic services (more than PLN 8 500 000), and expenditure on other goods and services.

While analysing the impact of migrant expenses on the local enterprises, attention should be paid to the effect of additional labour demand, especially in locations near student campuses as well as in the inner city, due to the higher revenue of local enterprises generated by the demand from migrants. This effect was estimated based on the Wiedermann approach, using the discussed student expenditure, statistical data about the relation of labour cost to total enterprise revenues (CSO 2015b), and the monthly cost per employee per month (CSO 2013). These data are presented in Table 1. Based on these data, it was estimated that 485 additional jobs were created in the first step of the consumption demand impulse given by educational migrants. The greatest share of employment was created in retail trade (about 250) and gastronomy (about 180).

The 485 jobs created trigger multiplier effects. Based on statistical data about the level of remuneration in various sectors of the local economy (see columns C and D in Table 1; CSO 2013), it was estimated that an extra net annual net income of ca. PLN 11 000 000 has been created.⁹ Furthermore, it was estimated that the annual net income of the second group of beneficiaries of the consumption demand impulse, the providers of rental services for educational migrants, was increased by PLN 29 000 000.¹⁰ The extra demand created by this additional income is lower than this total of PLN 40 000 000. When assuming, using data from a survey of Polish households' budgets, that 84.3 per cent of income is spent (and 15.7 per cent saved (CSO 2015a)), the extra expenditure is PLN 33 400 000. Therefore, the total demand effect in the first two stages of the multiplier effect is ca. PLN 175 400 000 annually (PLN 142 000 000 consumption expenditure by educational migrants plus PLN 33 400 000 expenditure by the beneficiaries of these migrant expenditures). The total increase in consumption demand is about 15 per cent of the total consumption demand generated by inhabitants from Opole.¹¹

Table 1. Estimation of the number of new jobs created as a result of educational migrants' expenditures in Opole

	A	B	C	D
	Estimated revenue of local companies deriving from expenditure made by educational migrants in Opole	The proportion of labour costs to revenue of enterprises (based on CSO 2015b)	Monthly labour cost per employee (based on CSO 2013)	Number of new jobs created as a result of educational migrants' expenditures in Opole ((A*B)/C)
Trading enterprises	PLN 7 991 294	8.0%	2 550.12	251
Gastronomic enterprises	PLN 1 869 134	22.0%	2 330.39	176
Enterprises providing services related to sports, arts and recreation	PLN 433 357	25.0%	4 908.38	22
Enterprises providing transportation	PLN 280 623	13.0%	3 232.80	16
Enterprises providing photocopying services	PLN 285 746	15.1%	4 391.31	10
Other service enterprises	PLN 404 993	9.0%	2 612.64	10
			Total number of created jobs	485

Source: Rokita-Poskart (2016b), own calculation based on empirical research and data provided by the Central Statistical Office (CSO 2013, 2015b).

As long as the multiplier effect continues to play out within the city of Opole – i.e. the additional profit generated in each step in the chain of income and demand is spent locally, not in other cities – the economic importance of educational migrants increases with each subsequent steps. However, the multiplier effect may be reduced due to the fact that migrant students are part of the 485 extra jobs created. This extra income is in fact the basis for their consumption expenditure calculated in the first step. On the other hand, no data are available about the extra income for entrepreneurs generated by the extra revenue caused by the initial consumption impulse. An issue for which the calculation of the multiplier effects does not provide evidence is the impact of educational migrants on the survival of local companies, and the increasing resilience of the local economy due to the strengthening of relations with other companies in local supply chains.

Concluding remarks

In cities with large educational institutions, educational migrants may create significant demand effects as well as indirect multiplier effects. In this article, the importance of this mechanism was shown. In the city of Opole, the capital of the Opole Voivodeship in Poland, the total effect of initial consumption demand and indirect effects increase through the employment created and increased income of providers of rental services was an estimated PLN 175 400 000. This is about 15 per cent of the total consumption demand in the city. Although this estimate should be treated with caution, it is a practical example of the importance of the multiplier effect of student migrants in academic centres.

In the specific case of Opole, the student inflow is of particular importance for the local economy. While the described effects appear in all large academic centres, in the case of intermetropolitan cities like Opole, the presence of students and the redistribution of their income is especially highly desirable as a main source of economic and demographic development (Platje, Poskart and Rokita-Poskart 2016). This is an issue which may require deeper research: to what extent does a large student population and educational migration stabilize an urban economy, or create threats should the student numbers stagnate?

Notes

¹ The term ‘educational migration’ refers to the population movements related to higher education. The author defines the category of educational migration as both the movement of population associated with temporary change of residence during the study, as well as persons commuting from their place of residence to the academic city. More about terminology and definitional issues in Rokita-Poskart (2016b: 207–208).

² The analysis presented in the paper omits the international students. This is for two reasons; first, the proportion of international students in Opole in relation to the total number of students is quite low. Second, the intention was to focus only on internal educational migration.

³ The terms: the income effect and indirect multiplier are used interchangeably (Micek 2011).

⁴ Opole has one of the highest student-to-population ratios among all capitals of voivodeships in Poland, and the highest one among all non-metropolitan capitals (own calculations based on Local Data Bank n.d.).

⁵ The presented basket of goods and services of the average student of Opole was constructed based on empirical research conducted in Opole (Rokita-Poskart 2016b).

⁶ The results of the conducted research show that educational migrants mainly work in trade and service enterprises. Their work therefore is likely to mostly affect the volume of service supply in the local market.

⁷ The sample consisted of 66 per cent bachelor students and 34 per cent master students.

⁸ With small deviations (about 2–3 per cent) the result coincides with the information about the share of educational migrants from the two largest public universities located in Opole. According to these data, the

share of educational migrants among the total number of students enrolled in these higher institutions was about 87–88 per cent.

⁹ This estimation was calculated for the academic year, using the data from Table 1. The monthly net income (column C minus the labour costs) was multiplied by the extra jobs created in each branch that was taken into consideration (column D). The monthly net wage was estimated based on data from table 1, column C, assuming that the average net income amounts to 74 per cent of gross income.


¹⁰ See the structure of migrant expenditures at the beginning of the section.

¹¹ These calculations were made by comparing the value of the income and demand effect, estimated at approximately PLN 175 400 000, and the estimated PLN 1.2 billion demand reported by the residents of the city of Opole. The demand of the Opole residents was calculated by multiplying the monthly level of spending of an average household member in the Opole Voivodeship (PLN 1 102.99) by 9 months (the length of the academic year), and then multiplying this by the total population of Opole (CSO 2015; Local Data Bank n.d.).

Conflict of interest statement

No potential conflict of interest was reported by the author.

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