ECONOMIC SITUATION OF EASTERN POLAND AND POPULATION MIGRATION MOVEMENT

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Abstract: The aim of this paper is to examine population migration flows in relation to the eastern Poland and its economic situation. The empirical study refers to the period 2008-2010 corresponding to global financial and economic crisis which affected the intensity and directions of internal migrations in Poland. Ratio analysis, as well as taxonomical analysis was applied in the research

Keywords: economic situation, internal migration, synthetic measure, ratio analysis

INTRODUCTION

A host of modern economic theories indicate that regional development is conditioned by the occurrence of regional networks. Among various regional development theories the centre-periphery theory deserves special attention (see: Hryniewicz (2010); Baldwin (2001)). It assumes the dependence of development

between the central and peripheral areas taking into account also the semi-periphery condition. The central region supports the development of peripheral areas. The centre is usually created by a small, though dynamically developing, territorial area where both economic activity and social life is concentrated. Peripheral areas, in turn, are less developed and are exploited by the core. As a result, the development of the peripheral area is totally dependent on the centre (see [Pain 2008], [Kauppila 2011], [Wojnicka et al. 2005]).

Polish regions (NUTS 2) that form the so-called eastern bloc (the Podkarpackie, Lubelskie, Podlaskie and Świętokrzyskie provinces) constitute the periphery of the Polish economic space and are referred to as 'Poland B'. Such a situation results in the main from historical conditions and peripheral location. The social and economic backwardness of eastern Poland necessitates undertaking activity that would stimulate both economic and social development of that region. For that reason the provinces are of special interest to the national developmental policies [Jakubowska 2012], [Małkowski 2011], [Celińska-Janowicz et al. 2010]. Provincial capital cities of eastern Poland function as important regional centers. The major functions they play are administrational, transgenic, and educational[2]. Despite the significant contribution of capital cities to the settlement network, an increase in negative social and economic phenomena can be observed. These phenomena include mass migrations which may result in depopulation of that area[3].

ECONOMIC SITUATION OF EASTERN POLAND

Eastern Poland's macro region comprises the area of approximately 75,000 km^2, which constitutes almost 25% of the country's total area. That area is inhabited by almost 6.8 million people which is about 17.5% of the total population. More than a half of eastern Poland's dwellers live in rural areas. The Podkarpackie, Lubelskie, Podlaskie and Świętokrzyskie provinces belong to the poorest regions within the European Union. Their gross domestic product *per capita* is much below the national average and the unemployment rate is much above the national average. These areas are the least competitive and the problems they are facing include attracting specialists and retaining the best educated inhabitants. The major impediments to the development of the area include poor infrastructure, an ineffective employment structure, an ineffective agricultural

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[2] See, for instance, Dziemianowicz, Szlachta and Szmigiel-Rawska (2011), pp. 37-38.
[3] The content of the paper is the continuation of the author's studies of the problem of migrations and the findings of the studies are presented in the works Bal-Domańska, Wilk (2011), Matusik, Pietrzak, Wilk (2012), Pietrzak, Drzewoszewska, Wilk (2012), Pietrzak, Żurek, Matusik, Wilk (2012), Wilk, Pietrzak, Matusik (2013), Pietrzak, Wilk, Matusik (2013), Pietrzak, Wilk (2013), Wilk, Pietrzak (2013).

sector, which dominates in that area, poorly developed services and industry, and poor quality of human resources [Korcelli P. et al. 2008].

A typical feature of the macroregion is the low level of entrepreneurship. The lowest one can be seen in the Podkarpackie while the highest in the Świętokrzyskie province. The low level of the development of the industrial sector can be explained by both weak internal demand and transport network.

Despite the general poor economic situation of the macroregion, if compared with the rest of the country, eastern Poland's area is not economically homogeneous. In order to take a closer look at the economic situation of eastern Poland, the taxonomic development measure (TDM) has been applied (see, for instance [Zeliaś 2000, 2004]). The values of the measure have been designated by means of Hellwig's method (1968). The study comprised Poland's 66 subregions (NUTS 3) and focused on their situation in 2008 which was described by a set of diagnostic characteristics (see Table 1).

Table 1. Values of selected statistics of diagnostic characteristics

No	Variable	Minimum	Maximum	Arithmetic mean	Coefficient of variation (%)
1	Gross value added per employed person (PLN)	48712,00	136953,00	73434,34	22,71
2	Natural person conducting economic activity per 100 working-age persons (number of person)	7,00	19,00	11,22	22,29
3	Share of commercial companies with foreign capital per 100 national economy entities in the private sector (REGON – private sector) (%)	0,28	5,97	1,25	77,22
4	Investment outlays in enterprises per capita (PLN)	1053,00	12024,00	3157,64	60,64
5	Share of persons employed in the service sector (market and non-market) in employed persons (%)	27,01	83,31	46,78	26,60
6	Average monthly gross wages and salaries (PLN)	2401,06	4504,85	2827,96	14,23
7	Share of registered unemployed persons in working-age persons (%)	1,50	13,20	6,27	42,58

Source: own calculations based on data from LDB of CSO of Poland.

Subregions were grouped in four classes based on the values of the TDM using the 3-means method. The defined classes illustrate relatively high (over 0.4), moderate (0.3, 0.4], low [0.2, 0.3] and very low (under 0.2) levels of economic development (see Figure 1).

The highest value of the measure (0.99) was found for the capital city of Warsaw while the lowest value (0.09) was obtained by the Chełmsko–Zamojski subregion of the Lubelskie province. The highest level of economic development within eastern Poland was observed in the Lubelski subregion. The value of the calculated measure (0.29) allowed the determination of the development level for that area as moderate. A slightly lower value of the TDM was obtained for the Białostocki subregion (0.28), which was classified in a group of subregions characterized by a low level of economic development. The Rzeszowski and Kielecki subregions were also included in that group with the measure value

amounting to 0.23. Other subregions of eastern Poland were included in the group with the lowest level of economic development.

A factor that 'stigmatizes' the area of eastern Poland is the significant migration outflow. As was presented in the Social and Economic Strategy for the Development of Eastern Poland, the area that is most susceptible to the depopulation processes is Lubelszczyzna and the prediction is that as many as 80,000 people will have abandoned it by 2020.

Figure 1. The level of economic development by TDM value classes
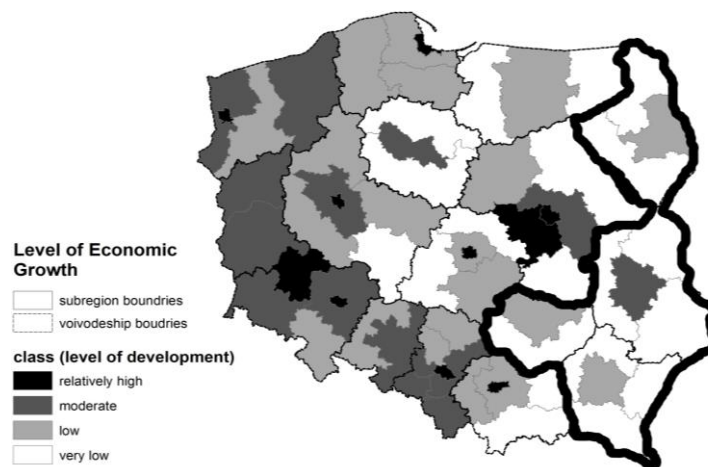
Source: elaborated by the authors based on data from LDB of CSO of Poland.

MIGRATION FLOWS OF EASTERN POLAND

Data on internal migration flows in Poland (registered inflows and outflows for permanent residence) were taken from the Local Data Bank of the Central Statistical Office (BDL GUS). The data aggregated for the period 2008-2010 were used to compute the inflow, outflow and migration ratios for districts as well as the net migration ratio for districts situated in the area of eastern Poland[4]. The values of the ratios were divided into five classes following the natural division method. The classes were respectively named as 'very low', 'low', 'medium', 'high', and 'very high' values of the ratio.

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[4] The ratios of inflows (outflows) were computed as the share of persons registered (deregistered) in the years 2008-2010 in the average population size for that period. Net migration ratio, in turn, determines the relation of the net migration ratio to the average population size in the period of 2008-2010.

Analysis of interregional (within subregions) migration flows and intraregional (between subregions) migration flows was also made[5]. Values of the interregional flows ratio were divided into three equally numerous classes[6]. Relative to the size of flows, classes were named as 'weak', 'medium' and 'strong'[7]. In the case of the intraregional flows ratio, five groups of flows were marked on the map and these are as follows: 'very strong flows', 'strong flows', '1st class medium flows', '2nd class medium flows' and '3rd class medium flows'[8]. Figure 2 shows the values of the inflows and outflows ratios, and also net migration ratio.

Figure 2. The size of the migration inflow and outflow by districts in the period 2008-2010
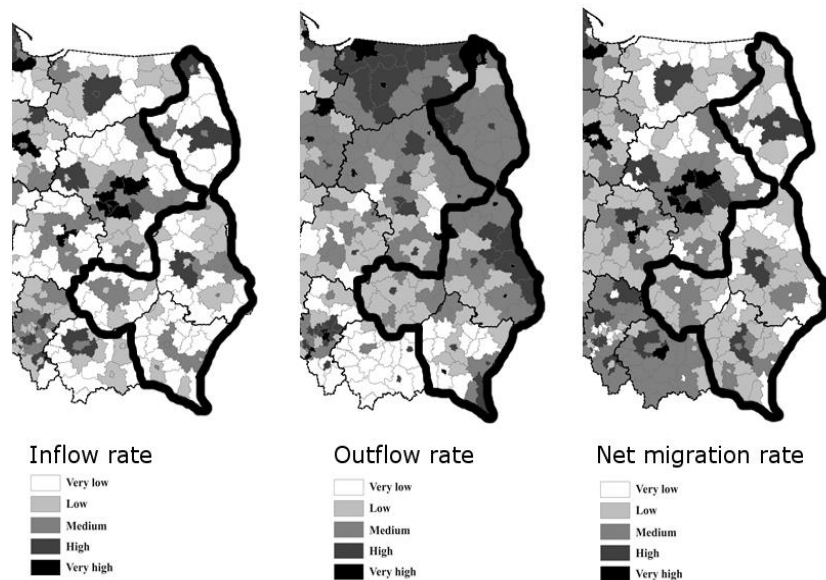
Source: elaborated by the authors based on data from LDB of CSO of Poland.

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[5] The basis for calculations for the 66 subregions was 66 interregional flows and 4,290 intraregional flows. The values of the ratios were computed as the aggregated value of migrations flows in the years 2008-2010 in relation to the average population size in a destination subregion (the current place of residence).

[6] Classes were created based on specific values of centiles (min, C_{33}), (C_{34}, C_{66}), (C_{67}, max).

[7] The values of interregional flows are not provided for cities with district rights since population flows between districts of those cities are not treated as migration flows.

[8] The classes were distinguished based on the largest values of the ratios with a view to illustrating the directions of the largest migration flows. Specified centiles were taken for the purpose of the creation of the following classes: 'very strong flows' which represent 2% of the most intensive flows within the country and their values belonged to the (C_{98}, max) interval. The 'strong flows' represent (C_{96}, C_{98}), '1st class medium flows' (C_{94}, C_{96}), '2nd class medium flows' (C_{92}, C_{94}), and '3rd class medium flows' (C_{90}, C_{92}).

A high value of the inflow ratio was noted merely within the area of the Białostocki district. This is related to a strong population migration from rural areas primarily caused by economic reasons. In the city of Białystok the value of the ratio was determined on the average level since city dwellers move to the city outskirts, to the adjacent districts. A similar level was noted in the Łomżyński district. Other districts had very low values of the ratio.

The majority of districts of the Podlaskie province noted average levels of the outflows ratio. A high value of the measure can be observed in the city of Białystok and in the Łomżyński and Kolneński districts. The latter is also characterized by a high negative value of the net migration ratio. The same group (with very low values of the ratio) includes the following districts: Grajewski, Sejnerski, Sokólski, Wysokomazowiecki, Siematycki, and Hajnowski.

A high (positive) value of the net migration ratio was noted only in the Białostocki district. The Łomżyński district had a medium value of the ratio. A low level of the net migration ratio was observed in the following districts: Suwalski, Augustowski, Moniecki and in Bielski. Other districts were characterized by very low values of the ratio.

A high level of the inflows ratio was noted in the Lubelski district. However, the city of Lublin undergoes the suburbanization process and in that area the level of the measure is defined as low. The same group (with a low inflows ratio) includes the Łęczycki, Włodawski, Parczewski, Bielski, Rycki and Zamojski districts. In the Lubelskie province, two districts (the Świdnicki and Chełmski districts) reached average levels of the ratio. The value of the analysed measure in the remaining districts (Łukowski, Radzyński, Lubartowski, Puławski, Opolski, Kraśnicki, Janowski, Biłgorajski, and Hrubieszowski) was determined at very low level.

It must be noted that the Lubelskie province is deprived of districts with the outflows ratio on very low level. A low level of the ratio can be observed in the following districts: Lubartowski, Puławski, Kraśnicki, Biłgorajski, Janowski and Krasnystawski. The average value of the measure was ascribed to the Łukowski, Bialski, Opolski, Lubelski, Zamojski and Tomaszowski districts.

High values of the ratio can be noted in the districts situated within the border-line area: Włodawski, Chełmski, Hrubieszowski and Łęczyński. The only district with very high value of the outflows ratio was the Rycki district, which is also characterized by very low value of the net migration ratio. Similar level of the latter ratio was noted in the following districts: Łukowski, Radzyński, Parczewski, Włodawski, Hrubieszowski, Tomaszowski and Opolski.

None of the districts of the Podkarpackie province could boast an inflows ratio at a high level. Medium values of the ratio held for the Przemyski and Rzeszowski districts, and low values can be seen in the Krośnieński, Leski and Tarnobrzeski districts. The remaining districts were characterized by very low value of the inflows ratio.

The Bieszczadzki district is undergoing the depopulation process. The district has very high level of the outflows ratio and, at the same time, very low inflows ratio. As a result the number of dwellers in that area is falling. Similar to other provinces of the eastern part of Poland under scrutiny, the Podkarpackie province is facing the depopulation process of urban areas and moving to peripheral areas. Such cities as Rzeszów, Przemyśl, Tarnobrzeg and Krosno noted very high value of the outflows ratio.

At the same time in those districts (excluding the urban area) the value of the ratio is determined as medium (the Tarnobrzeski and Przemyski districts), very low (the Krośnieński and Tarnobrzeski districts) and low (the Rzeszowski district). The group of districts with low values is formed by the Stalowolski and Przeworski districts. The Leski district had a low value. The level of the ratio for the remaining districts (Mielecki, Kolbuszewski, Dębicki, Jasielski, Sanocki, Ropczycko-Sędziszowski, Strzyżowski) was very low.

As concerns the Świętokrzyskie province, the only province with a high ratio value was the Kielecki district. Medium values were noted in the Buski and Ostrowiecki districts. The level of inflows ratio for other districts is classified as low. The whole of the Świętokrzyskie province is characterised by a significantly high level of the outflows ratio.

In the city of Kielce that level is classified as high, while in the Opatowski, Sandomierski, Kazimierski and Starachowicki districts the outflows level was determined as low. Very low value of the ratio was identified in the Sandomierski and Skarżyski districts. The whole of the region is characterized by a low net migration ratio. The Kielecki and Buski districts are the only ones where the ratio was on the average level.

Figure 3 presents the directions of the largest migration flows (outflows and inflows) in eastern Poland and the size of flows within subregions in that part of the country. In the Podlaskie province one can see a significantly high level of interregional flows in the Białostocki subregion and a medium level in the remaining subregions. The level of intraregional flows for the subregions of the Podlaskie province was estimated as strong. Strong migration flows were noted in the Chełmsko–Zamojski subregion, while the remaining subregions (Puławski, Lubelski and Bialski) were characterized by a medium level of the phenomenon.

All subregions in the Podkarpackie province had intraregional flows of medium intensity and very strong interregional flows directed to the centre of the province – the Rzeszowski subregion. No major migration flows were noted in the Świętokrzyskie province. Also, slight changes can be observed while analysing intraregional flows. In that region they were classified in the medium-class group.

The major destination for the emigration from the Podlaskie province is the capital city of Warsaw; in the case of the Podkarpackie province the main migration flow is directed towards Cracow. Dwellers from the Lubelskie and Świętokrzyskie provinces migrate to both Warsaw and Cracow.

Figure 3. The size of interregional and intraregional migration flows by subregions in the period 2008-2010
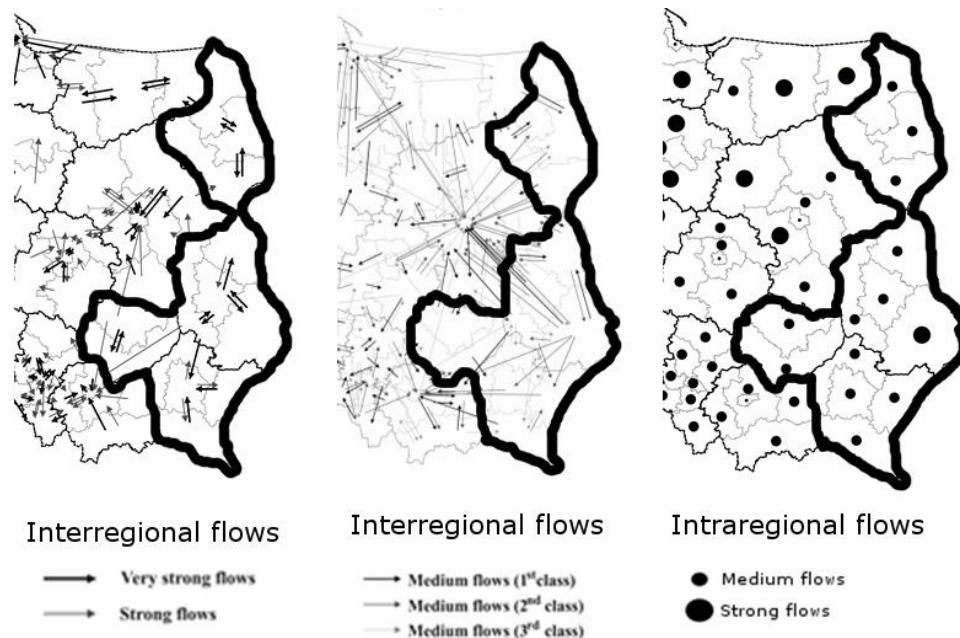
Source: elaborated by the authors based on DL GUS data

CONCLUSIONS

In the contemporary world the following become increasingly important factors of economic growth: entrepreneurship, innovation, and the adaptive capability to changing conditions. The role of migrations in those processes cannot be underestimated. Migrations, however, may lead to a permanent change in the place of residence in another region, or country. If emigration occurs on a mass scale and encompasses the most active, talented and well-educated people, then it may threaten both the development of a region as well as of the whole country (see [Grabowski 2005]).

Poland belongs to a group of EU states with regional bipolarity of demographic processes. On the one hand, one can identify areas with intense migration inflows, while on the other hand, there are areas characterized by mass migration outflows. Migration outflows can be observed mainly in peripheral areas (peripheral refers to both the spatial and socio-economic context), including the macroregion of eastern Poland. However, the region is significantly internally differentiated. The demographically active areas are ones situated in the near vicinity of provincial cities and almost the whole of the Podkarpackie province. The remaining areas of the region are characterized by migration outflows.

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