Arkadiusz Żabiński
Wroclaw University of Economics and Business
e-mail: arkadiusz.zabinski@ue.wroc.pl
ORCID: 0000-0002-0352-688X

DOI: 10.15290/oes.2025.04.122.15

DETERMINANTS OF INTERNAL MIGRATION IN POLAND AND DEVELOPMENT DISPARITIES BETWEEN VOIVODESHIPS

Summary

Purpose | The article provides a further contribution to the discussion on the causes of developmental disparities among Poland's voivodeships. It analyses the impact of foreign investment, income disparities and the size of EU structural funds on the internal migration, which is one of the factors shaping the development disparities between voivodships.

Research method | The aim of the article is to determine the significance of the internal migration as a determinant shaping the developmental potential of the Polish voivodeships. The article analyses statistical data using Pearson's correlation and a critical review of the literature. The time frame of the analysis covers the years 2016–2022. Statistical data from the Central Statistical Office (GUS) were used for the research.

Results | The Polish voivodeships exhibit significant developmental disparities. During the studied period, these disparities did not decrease despite EU funds flowing into the poorest voivodeships. The internal migration in Poland is characterised by the movement of people from less developed voivodeships to the most developed ones. Foreign investments are concentrated in Poland's voivodeships with the highest developmental potential, strongly shaping the labour market. The directions of the internal migration are strongly influenced by the directions and volume of foreign investments as well as by the income levels in individual voivodeships.

Originality/value/implications/recommendations | The value of the study lies in demonstrating the ineffectiveness of fiscal policy tools used in Poland to equalise the development differences between provinces in the context of the internal migration patterns and volumes.

Keywords: labour market, migration, foreign investments, regional policy

JEL classification: J08, J61, L00, H70

1. Introduction

Poland is a country characterised by diverse development potential across its individual voivodeships, shaped by a range of geographical, historical, demographic, and economic factors. Potential development disparities arise from internal regional resources and external influences, such as regional policy and domestic and foreign investment. Concurrently, there is an ongoing debate regarding the effectiveness of regional, national, and EU policies in substantially enhancing the development potential of poorer regions. A critical challenge faced by individual voivodeships regards the rapid dynamics of change in the labour market, which outpace the adjustments in the regional policy tools. Among the key factors influencing Poland's labour market there are demographic shifts and the rate of internal migration.

This article aims to assess the significance of internal migration as a determinant shaping the development potential of the Polish voivodeships. The study examines the influence of factors such as the allocation of pro-development EU funds, the level of wages, and investment outlays from foreign sources on migration patterns to achieve its objective.

The research hypothesis was adopted that the internal migration fundamentally shapes the development potential of voivodships. Negative trends in this area are not changed by the EU funds or by foreign investment.

The article analyses statistical data using Pearson's correlation and a critical review of the literature. The time frame of the analysis covers the years 2016–2022. Statistical data from the Central Statistical Office (GUS) were used for the research.

2. Migration as an economic phenomenon

The economic analysis of migration considers a variety of motives, including the economic, personal, and political factors. A key aspect of analysing the internal migration is understanding the transaction costs that influence migration decisions [Borjas, 1989, pp. 457–485], [Adamowicz, Siedlanowski, 2021, pp. 24–47]. These costs include the following:

1. Differences in wages: the expected differences in earnings between the region of origin and the region of destination, factoring in the probability of securing employment.
2. Mobility costs: the expenses associated with relocation, including transportation and accommodation costs.
3. Differences in the cost of living: This is particularly significant in the housing market and it encompasses other aspects of daily life.
4. Information-seeking and employment costs: the time and resources required to locate suitable job opportunities and gather information about working conditions in the new location.

If the transaction costs exceed the anticipated benefits, migration does not occur. Therefore, a comprehensive cost-benefit analysis is essential for understanding the determinants of migration decisions.

From the perspective of neoclassical equilibrium theory, employee migration is viewed as a mechanism for optimising the allocation of labour resources. Assuming a homogeneous labour supply, perfect competition, and full employment, migration from low-wage to high-wage regions is expected to equalise wage differences. Under ideal conditions, where all the factors of production are mobile, and information is perfect, migration should result in a labour market equilibrium, with the value of the marginal product of labour equalised across regions [Borjas, 1989, pp. 457–485].

In practice, however, migration does not always adhere to the principles of neoclassical theory. Various factors influence the migration process, including:

1. Imperfect information: Migrants often lack complete information about the working and living conditions in the destination region.
2. Migration costs and barriers: financial, social, and emotional costs associated with relocation.
3. Migration policies: policy decisions and regulatory frameworks can significantly shape the direction and intensity of migration.
4. Cultural and social factors: cultural differences, language barriers, and the influence of social networks play a critical role in migration decisions.

This theoretical perspective does not align with actual conditions. Under realistic assumptions, migration often produces effects that do not result in parallel increases and decreases in earnings. Consequently, an interregional equalisation of per capita income cannot be expected [Dumeignil, 2020], [Tassinopoulos, Werner, 1999, pp. 245–279].

In Polish literature, research on internal migration focuses on the depopulation of rural areas. Migration in rural areas varies spatially, but in some places it tends to be spatially dependent. The most important are rural areas located near large agglomerations, primarily the so-called big five cities and smaller provincial cities – these are the hot spots of the internal migration system in rural areas [Śleszyński, 2016]. Rural areas in the eastern and south-eastern Poland are significantly less mobile. There is little migration turnover observed there, and these areas lose out on migration due to negative migration efficiency. They can be described as the migration cold spots [Długosz, Szmytkie, 2022], [Kiniorska, 2017].

Employees frequently lack full awareness of the true potential of their education, training, and skills. Enterprises are also unable to determine the actual productivity of their prospective employees a priori. As a result of this asymmetric information, the allocation of employees and enterprises is not efficient in practice. Alternative allocations could lead to an increase in the domestic product.

Studies on migration repeatedly highlight the key role of age [Tassinopoulos, Werner, 1999, pp. 245–279]. All other factors being equal, older individuals are less likely to migrate. Several reasons explain this tendency. Firstly, older migrants have fewer years left to recover their investment costs. Migration constitutes an investment in human capital. The net income from migration is age-dependent, as older workers have a shorter period to realise the returns on this investment. A reduced repayment period diminishes net profits from migration, thereby lowering the likelihood of migration. Secondly, older individuals typically possess higher levels of employer-specific human capital, which, by its nature, is not transferable to other jobs. Lastly, older individuals often face higher migration costs than younger people, and the psychological costs of migration tend to increase with age [McConnell, Brue, 1995, pp. 312–334].

Furthermore, the probability of migration decreases. Greater distances to future employment regions make obtaining adequate information about the destination more difficult. In addition to the psychological costs, which also increase with distance, transportation costs directly correlate with the distance to be travelled. However, these challenges can be mitigated to some extent. Migrants often follow the established paths previously taken by the family, friends, or relatives. Through multiplier effects, this phenomenon can occasionally result in unexpectedly large migration movements of specific population groups from particular regions to specific target areas.

All the factors determining the scale of migration contribute to its significant impact on regional development. The attraction of highly skilled workers can enhance innovation and productivity in the destination region. Conversely, regions experiencing an outflow of workers may face challenges such as labour shortages and diminished development potential.

3. The effectiveness of the use of EU funds in counteracting the negative effects of internal migration

To assess the impact of internal migration on the development potential of the labour market in the Polish voivodeships, Table 1 analyses the net internal migration of working-age people between 2016 and 2022. Net migration is defined as the difference between the number of people permanently arriving in a region and the number of people permanently leaving the region. A characteristic feature of the data is the persistence of migration trends in individual voivodeships.

The voivodeships with the highest positive migration balances include the Masovian, the Lesser Poland, and the Lower Silesian. The Masovian Voivodeship consistently recorded the highest positive balance throughout the analysed period, peaking in 2018 with 12.306 people. A decrease in dynamics was observed in 2020, with the balance falling to 8.971 people, potentially due to the COVID-19 pandemic. However, the migration balance began to stabilise in the subsequent years. The Lesser Poland recorded steady growth in its migration balance from 2016 to 2019, reaching a peak in 2019 with 5.191 people.

TABLE 1

The balance of the internal migration in Poland of people of working age in 2016–2022 divided by voivodeships

Voivodeship	2016	2017	2018	2019	2020	2021	2022
Lower Silesian	2 454	2 393	2 904	3 941	3 126	3 110	3 402
Kuyavian-Pomeranian	-1 363	-1 341	-2 152	-2 337	-1 811	-1 819	-1 587
Lublin	-3 666	-4 125	-4 794	-5 383	-3 913	-4 248	-3 976
Lubusz	-665	-639	-821	-1 080	-666	-897	-724
Łódź	-1 365	-1 565	-1 780	-2 295	-1 472	-1 860	-1 412
Lesser Poland	2 685	3 039	4 049	5 191	3 026	3 651	3 218
Masovian	9 234	9 970	12 306	13 103	8 971	9 226	8 069
Opole	-633	-678	-658	-1 022	-746	-769	-698
Subcarpathian	-1 841	-1 997	-2 800	-3 267	-2 114	-2 221	-2 102
Podlaskie	-1 337	-1 539	-1 965	-2 137	-1 534	-1 493	-1 326
Pomeranian	2 701	2 901	3 882	4 632	3 025	3 510	3 161
Silesian	-2 520	-2 359	-3 055	-3 140	-2 420	-2 416	-2 485
Świętokrzyskie	-1 763	-2 026	-2 300	-3 159	-1 964	-2 250	-2 129
Warmian-Masurian	-2 241	-2 146	-2 909	-3 245	-1 901	-2 056	-1 799
Greater Poland	831	778	947	978	1 002	1 319	899
West Pomeranian	-511	-666	-854	-780	-609	-787	-511

Source: the author's own elaboration based on the Central Statistical Office [date of access: 25.02.2025].

Although the voivodeship experienced declines in 2020 and 2021, it maintained a positive balance in 2022, recording 3.218 people. The Lower Silesian Voivodeship also demonstrated a stable increase in migration balance, with the highest value recorded in 2019 at 3.941 people. After a slight decline in 2020, the voivodeship's migration balance increased again in 2022 to 3.402 people.

Other voivodeships with consistently positive internal migration balances include the Pomorskie and the Greater Poland.

In contrast, among the voivodeships with the highest negative migration balances, Lublin, the Subcarpathian, and the Silesian stand out. The Lublin Voivodeship consistently recorded one of the highest negative migration balances, with the largest outflow occurring in 2019 (-5.383 people). Despite some fluctuations, the migration balance in 2022 remained negative at -3.976 people.

Similarly, Subcarpathian experienced a substantial outflow of the working-age population, with the highest negative balance in 2018 (-2.800 people). Although there was a slight improvement by 2022, the migration balance remained negative at -2.102 people.

The Silesian Voivodeship also regularly exhibited a negative migration balance, with the worst result recorded in 2018 (-3.055 people). Despite some fluctuations over the years, the balance in 2022 remained negative at -2.485 people. The negative internal migration balances are characteristic of all the other voivodeships.

When analysing the scale and directions of internal migration (Table 2), it is important to consider the effectiveness of EU funds in mitigating the negative impact of market and demographic factors on regional labour markets.

TABLE 2
The value of contracts/decisions for co-financing from EU funds per capita, Poland=100 in the financial perspective 2016–2022 by voivodeship

Voivodeship	2016	2017	2018	2019	2020	2021	2022
Lower Silesian	105.5	91.1	97.4	92.0	90.0	89.1	86.2
Kuyavian-Pomeranian	32.8	75.3	79.9	82.8	87.8	91.4	89.3
Lublin	109.4	102.4	95.8	108.1	108.2	107.0	108.0
Lubusz	115.4	98.8	90.9	85.5	87.8	87.3	84.9
Łódź	64.4	79.8	84.3	83.3	87.2	94.2	95.3
Lesser Poland	61.3	82.4	80.5	84.1	84.5	83.2	85.8
Masovian	112.9	107.9	101.4	95.5	88.3	84.3	83.4
Opole	97.8	90.3	83.6	81.7	88.2	84.3	89.6

Voivodeship	2016	2017	2018	2019	2020	2021	2022
Subcarpathian	84.0	90.6	87.7	94.8	94.0	95.6	96.9
Podlaskie	90.4	94.4	92.4	106.1	105.9	106.6	103.1
Pomeranian	105.4	92.9	104.8	99.1	93.8	91.1	87.4
Silesian	66.5	70.9	76.7	75.7	82.3	81.9	81.8
Świętokrzyskie	77.6	84.8	92.8	93.4	93.2	92.9	96.3
Warmian-Masurian	196.2	130.0	126.4	133.1	132.4	132.9	131.7
Greater Poland	69.3	78.1	71.5	71.6	69.3	69.9	67.3
West Pomeranian	36.6	102.6	104.3	109.1	115.7	118.2	121.7

Source: the author's own elaboration based on the Central Statistical Office [date of access: 25.02.2025].

When analysing the per capita distribution of the EU funds transferred to individual voivodeships, it is evident that the largest beneficiaries are the Warmian-Masurian, Lublin, the West Pomeranian, and the Podlaskie, while the Greater Poland, the Silesian, and the Masovian received the lowest levels of funding.

Pearson's linear correlation coefficient is used to evaluate the strength and direction of the linear relationship between two variables. Table 3 examines the relationship between the value of contracts or decisions for the EU co-financing per capita and the balance of internal migration in the Polish voivodeships during the years 2016–2022.

TABLE 3

Pearson's linear correlation coefficient between the value of contracts/decisions for co-financing from the EU funds per capita and the migration balance in voivodships

	2016	2017	2018	2019	2020	2021	2022
Correlation coefficient	0.0546473	0.1224989	0.1055665	-0.1392710	-0.3068255	-0.4019627	-0.4124433

Source: the author's elaboration based on BDL data [date of access: 25.02.2025].

Analysing the relationship between the funds allocated for the pro-development policies of voivodeships and migration trends in these regions reveals no significant correlation. Furthermore, since 2019, the correlation coefficients have been negative and increasing in magnitude, indicating a growing negative dependence and suggesting that higher funding only marginally accelerates the outflow of the working-age population. The level of statistical significance was set at 0.5.

Similar findings were reported in the studies examining the development changes in voivodeships over the period 2010–2019 [Bożek et al., 2021, pp. 11–24]. During this period, the economic situation significantly improved across all voivodeships, as evidenced by a substantial increase in the value of the development level indicator. However, the scale of growth was uneven. The most significant economic development occurred in the voivodeships with the highest initial level of development, while the smallest growth was observed in the voivodeships ranking lowest.

This led to a widening gap between the less developed voivodeships, such as the Świętokrzyskie, the Podlaskie, and Lublin, and the most developed ones, such as the Masovian, the Lower Silesian, the Silesian, and the Pomeranian. This divergence is unfavourable in the context of policies aimed at reducing the regional development disparities. Although all voivodeships experienced development, the more developed regions advanced much faster than those with lower levels of development. Consequently, despite the inflow of the EU funds across all regions, disparities between voivodeships have deepened.

4. Wage differences as a determinant of internal migration

The impact of average wages in voivodeships on the balance of internal migration constitutes another phenomenon to be examined.

Table 4 presents an analysis of average salaries in the Polish provinces in 2014–2022, revealing trends and regional differences in salaries.

TABLE 4
Average wages 2016–2022 broken down by voivodship

Voivodeship	2016	2017	2018	2019	2020	2021	2022
Lower Silesian	4 455.69	4 722.44	4 993.63	5 388.46	5 712.08	6 271.47	6 964.36
Kuyavian-Pomeranian	3 764.58	4 001.06	4 263.53	4 621.05	4 933.89	5 424.38	6 006.01
Lublin	3 917.35	4 079.84	4 327.42	4 627.78	4 948.09	5 403.55	5 961.68
Lubusz	3 823.27	4 036.21	4 348.69	4 632.37	4 876.10	5 373.26	6 071.83
Łódź	4 007.60	4 218.80	4 538.01	4 883.33	5 209.46	5 738.76	6 311.57
Lesser Poland	4 178.64	4 454.93	4 761.08	5 207.93	5 577.41	6 107.85	6 906.02
Masovian	5 300.71	5 568.33	5 938.41	6 270.31	6 562.23	7 088.99	7 908.51
Opole	4 015.60	4 228.88	4 477.43	4 799.97	5 130.23	5 601.71	6 251.64
Subcarpathian	3 750.43	3 920.08	4 190.18	4 487.03	4 769.69	5 241.23	5 760.79
Podlaskie	3 871.97	4 101.80	4 354.63	4 665.49	5 004.18	5 485.72	6 058.40
Pomeranian	4 411.37	4 630.76	4 919.94	5 291.60	5 585.24	6 105.36	6 847.09
Silesian	4 355.27	4 556.51	4 907.27	5 262.42	5 509.09	5 967.00	6 769.88
Świętokrzyskie	3 795.73	4 006.63	4 280.87	4 583.57	4 861.76	5 318.88	5 833.39
Warmian-Masurian	3 728.92	3 895.63	4 128.68	4 410.91	4 763.06	5 230.66	5 699.42
Greater Poland	3 976.22	4 230.99	4 506.73	4 819.12	5 055.92	5 479.49	6 109.33
West Pomeranian	4 075.55	4 273.99	4 538.73	4 882.00	5 200.50	5 670.88	6 261.19

Source: the author's o elaboration based on the Central Statistical Office [date of access: 25.02.2025].

The data show an overall increase in wages across all voivodeships. However, the pace and magnitude of these increases varied, which is significant for the economic and sociological analysis of the country.

All voivodeships recorded a clear increase in the average salaries between 2014 and 2022. The highest average wages in 2022 were observed in the Masovian Voivodeship (PLN 7.908.51), while the lowest ones were recorded in the Warmian-Masurian Voivodeship (PLN 5.699.42), reflecting the economic diversity and potential of individual regions. The Masovian Voivodeship consistently showed the highest average salaries throughout the analysed period, rising from PLN 4.980.99 in 2014 to PLN 7.908.51 in 2022. High salary levels were also recorded in the Lower Silesian, the Silesian, the Pomeranian, and the Greater Poland voivodeships.

Despite the overall wage increase across the country, which reflects Poland's economic development and an improved standard of living, there remains a persistent disparity between the poorest and richest economic regions.

TABLE 5

Pearson's linear correlation coefficient between average wages and migration balance in voivodships

	2016	2017	2018	2019	2020	2021	2022
Correlation coefficient	0.865274	0.8875508	0.8845553	0.8895440	0.8807357	0.8776403	0.8680636

Source: the author's own elaboration based on BDL data [date of access: 25.02.2025].

The analysis of the Pearson's linear correlation coefficient between the average wages and the migration balance in the Polish voivodeships for the years 2016–2022 indicates a strong positive relationship between these variables. Higher wages attract migrants, emphasising the significance of wage policies in demographic and economic contexts. The stability of the high correlation coefficient values over the analysed period confirms the durability of this relationship, suggesting that regions offering higher wages are likely to continue experiencing an influx of people.

This trend may have far-reaching implications for the regional development in Poland, potentially reinforcing the economic strength of voivodeships with significant development potential while further weakening those with less robust economies. The level of statistical significance was set at 0.5.

Consequently, it is necessary to analyse the role of foreign investments in shaping Poland's migration processes.

5. Foreign investment as a factor determining the internal migration

Foreign investment, both direct and portfolio, plays a pivotal role in shaping labour markets globally. It serves as a critical source of capital, technology, and knowledge, influencing the structure of the labour market, employment levels, work quality, and employee skills development. In the context of globalisation and economic integration, understanding the impact of foreign investment on the labour market is essential for the effective management of employment policies and regional development strategies.

Mesoeconomic analysis indicates that foreign direct investment (FDI) in highly developed countries often occurs at the industry level. High expenditures on research and development (R&D), employment of specialists, production of innovative products, and high product diversity are defining characteristics of industries where FDI plays a significant role [Cieślik, 2017, pp. 171–189].

FDI impacts the labour market in the following ways:

1. creating new jobs: The establishment of new manufacturing plants and offices as a result of FDI generates direct employment opportunities in both the manufacturing and service sectors.
2. increasing employment in related sectors: Business expansion through FDI attracts suppliers and service providers, leading to job creation in the related industries.
3. improving the qualifications of employees: FDI often involves transferring technology and knowledge, enhancing employees' skills and contributing to their professional development.

The high quality of the workforce, often measured by education and skill levels, is a key factor influencing investment decisions. This factor is particularly significant in the context of the capital-intensive FDI, which involves advanced technologies and requires highly skilled labour. [Qian, Wilson, Qiao, 2001, pp. 339–365] observed that regions with a higher quality workforce, measured by the share of the secondary school students in the population, attract more significant FDI inflows. These findings underscore the importance of education and skills as investment drivers, particularly in developing countries. Kinoshita and Campos [2003] highlight that an educated workforce can absorb and adapt to new technologies faster, thereby reducing the training costs for the investing companies. A high-quality workforce not only enhances production efficiency but also enables companies to effectively utilise advanced technologies, which is critical for the capital-intensive investments. Carstensen and Toubal [2004, pp. 307–326] also confirmed that education and skills are significant determinants of FDI in Central and Eastern European countries. Their research demonstrates that the proportion of workers with secondary or higher education in the population substantially impacts FDI attraction.

For policymakers, investing in education and vocational training is essential to enhance the quality of the workforce and attract more foreign investment. Effective education policies and support for highly skilled sectors can increase the attractiveness of regions to foreign investors. However, such strategies do not address the negative effects associated with internal migration. Poorer regions may fail to attract sufficient investment within a short enough timeframe to absorb available labour resources, even after improving workforce quality. As previously discussed, the forces driving internal migration act earlier and more strongly in favour of the regions that already possess advantages in other aspects of development potential. This dynamic further strengthens already prosperous regions, leaving poorer regions without sufficient time to benefit from the regional development policies.

TABLE 6

Direct investment outlays with financing from abroad in Poland in the years 2016 – 2022 (in thousand PLN)

Voivodeship	2016	2017	2018	2019	2020	2021	2022
Lower Silesian	354 615	369 420	232 048	4 738 407	2 100 783	1 448 489	949 800
Kuyavian-Pomeranian	382 451	339 162	232 698	232 726	164 038	168 236	228 933
Lublin	59 796	75 013	120 393	201 390	222 291	289 867	102 090
Lubusz	176 151	115 162	190 345	54 321	43 682	48 228	99 624
Łódź	136 194	344 025	496 352	469 080	108 408	145 825	185 173

Voivodeship	2016	2017	2018	2019	2020	2021	2022
Lesser Poland	292 353	418 118	366 706	525 722	475 054	380 764	607 013
Masovian	4 942 086	4 707 581	7 154 240	9 674 068	9 964 006	11 001 538	11 374 738
Opole	26 681	108 406	158 713	146 821	141 431	141 902	102 538
Subcarpathian	66 623	81 061	398 690	557 943	289 526	159 353	117 180
Podlaskie	3 063	160 000	175 436	378 684	326 751	130 552	79 505
Pomeranian	248 803	67 095	188 531	405 663	444 933	406 293	210 164
Silesian	224 590	322 893	531 301	830 405	976 011	1 150 990	573 549
Świętokrzyskie	2 423	8 041	59 765	71 866	117 092	93 623	58 720
Warmian-Masurian	8 072	22 864	973 937	235 666	162 787	326 895	336 902
Greater Poland	1 353 100	298 474	448 387	472 152	411 420	1 027 898	432 445
West Pomeranian	82 456	73 662	325 090	215 789	182 460	62 701	163 789

Source: the author's own elaboration based on the Central Statistical Office [date of access: 25.02.2025].

Foreign direct investment (FDI) is a crucial indicator of economic activity, reflecting the interest of foreign investors in specific regions. In Poland, the inflow of FDI to individual voivodeships experienced significant changes between 2016 and 2022. An analysis of the direct investment outlays financed from abroad during this period highlights the Masovian, the Lower Silesian, the Lesser Poland, and the Silesian voivodeships as clear leaders in terms of the value of the attracted investments.

The Masovian Voivodeship stands out as the dominant region, with the investment values significantly surpassing those of other regions. Between 2016 and 2022, foreign investments in Masovian increased from PLN 4.942.086 thousand to PLN 11.374.738 thousand, making it the most stable and dynamically growing region in terms of foreign investment. The Lower Silesian Voivodeship ranks second in the volume of foreign investment. However, it experienced significant fluctuations during the analysed period, with an exceptional peak in 2019, when investment values reached PLN 4.738.407 thousand. Following this peak, the values declined, reaching PLN 949.800 thousand in 2022. The Lesser Poland Voivodeship also stands out due to its variable investment dynamics. Starting from PLN 292.576 thousand in 2016, it reached its highest investment level of PLN 607.013 thousand in 2022.

Other voivodeships, such as the Silesian, Łódź, the Greater Poland, and the Pomeranian, also recorded significant foreign investments, though not to the same extent as the leading regions mentioned earlier. In contrast, the Lubusz, the Świętokrzyskie, and the Opole voivodeships had much smaller and more variable investment values. These voivodeships also have the smallest populations, which may influence their ability to attract foreign investment.

The analysis of the dynamics of the foreign-financed direct investment outlays in Poland during 2016–2022 highlights substantial differences between voivodeships. Direct investment outlays in Poland demonstrated significant dynamics during the analysed period. The Masovian Voivodeship plays a key role as the region attracting the largest foreign investments, which may be related to its central location, developed infrastructure, and availability of qualified labour. The Lower Silesian Voivodeship also stands out, with a marked increase in 2019, suggesting episodic but significant capital inflows, probably resulting from large investment projects.

Despite fluctuations, the Lesser Poland and the Silesian voivodeships maintain relatively high levels of investment, which may reflect the impact of long-term development strategies and their attractiveness to investors in the technology and industrial sectors. Notably, in some years, the value of investments in the Lover Silesian and the Lesser Poland exceeded those in other regions, highlighting their significance on Poland's investment map.

The Kuyavian-Pomeranian, Lublin, and the Subcarpathian voivodeships exhibit smaller but stable investment inflows, indicating their growing attractiveness, albeit on a smaller scale compared to the more developed regions. Significant fluctuations in the Lubusz and the Opole voivodeships may be attributed to local economic conditions and regional policies.

The dynamics of investments during the analysed period highlights various factors influencing capital inflows, including the availability of qualified labour, infrastructure, local economic policies, and specific economic conditions. In the future, achieving sustainable development of foreign investments across Poland will require greater integration of regional policies, enhanced support for innovation, and the creation of investor-friendly conditions.

The direct investment outlays with foreign financing per capita serve as a key indicator of a region's effectiveness in attracting foreign capital. Analysing the average investment outlays per capita in Poland during 2016–2022 highlights the regional diversity in foreign investment inflows and their potential impact on local economic development.

TABLE 7

Average direct investment outlays with foreign financing per capita of Polish voivodship in the years 2016 – 2022 (in thousand PLN)

Voivodeship	2016–2022
Masovian	2.06
Lower Silesian	0.33
Warmian-Masurian	0.25
Lesser Poland	0.18
Silesian	0.13
Greater Poland	0.12
Kuyavian-Pomeranian	0.11
Opole	0.11
Lubusz	0.10
West Pomeranian	0.10
Pomeranian	0.09
Łódź	0.08
Podlaskie	0.07
Subcarpathian	0.06
Lublin	0.05
Świętokrzyskie	0.05

Source: the author's own elaboration based on data from the Local Data Bank (BDL) [date of access: 25.02.2025].

In the analysed period, the average investment outlays with foreign financing per capita in the Polish voivodeships exhibited significant variation. The data indicate that the Masovian Voivodeship recorded the highest value, amounting to PLN 2.06 thousand per capita, underscoring its dominant position as a hub for foreign capital. This prominence is likely attributed to its central location, well-developed infrastructure, and the concentration of key economic institutions in Warsaw, factors that collectively enhance its attractiveness to foreign investors.

The Lower Silesian Voivodeship (PLN 0.33 thousand), the Warmian-Masurian (PLN 0.25 thousand), the Lesser Poland (PLN 0.18 thousand), and the Silesian Voivodeship (PLN 0.13 thousand) voivodeships also recorded notable investment values per capita. These regions are characterised by the rapidly developing infrastructure, proximity to international borders, and strategic investments in sectors such as industry, tourism, and services, which enhance their appeal to foreign investors.

Despite significant disparities in the inflow of foreign investments between voivodeships, there remains considerable potential for growth in the regions with lower investment rates. Regional policies should prioritise leveraging local strengths, such as enhancing human capital, modernising infrastructure, and fostering favourable conditions for investors. Such measures could include support for the education sector, investment in information and communication technologies, and initiatives to improve quality of life, all aimed at increasing regional attractiveness to foreign capital. However, considering the influence of internal migration, these efforts alone may be insufficient to enhance the development potential of the poorest voivodeships sustainably.

TABLE 8

Pearson's linear correlation coefficient between the direct investment outlays with foreign financing and the migration balance in voivodships

	2016	2017	2018	2019	2020	2021	2022
Correlation coefficient	0.83068	0.82192	0.77088	0.80291	0.80326	0.76387	0.74002

Source: the author's own elaboration based on BDL data [date of access: 25.02.2025].

Between 2016 and 2022, the Pearson's linear correlation coefficients between direct investment outlays with foreign financing, and the migration balance in voivodeships indicated a strong positive correlation. These coefficients ranged from 0.74002 in 2022 to 0.85068 in 2016. The consistently high correlation values throughout the analysis suggest that the foreign direct investment increases are strongly associated with a positive migration balance. This trend underscores the significant impact of the foreign investment on the economic development of regions. However, it also highlights a concerning dynamic: investment and migration patterns tend to reinforce the advantages of already economically strong regions at the expense of the poorer ones. The level of statistical significance was set at 0.5.

5. Conclusions

The internal migration, through its influence on labour markets in individual voivodeships, significantly impacts their development potential. The flow of the working-age population tends to reinforce the position of the economically stronger regions at the expense of poorer ones. This unfavourable trend has proven resistant to state economic policies and to the European Union funds intended to mitigate the developmental disparities. The analysis indicates that differences in income levels and the volume of foreign investments in individual voivodeships substantially influence internal migration. To address these developmental imbalances, the state should place greater emphasis on tailoring fiscal policy tools to the specific development levels of each region. Without such adjustments, the internal migration of the working-age population will continue to reshape regional labour markets, further weakening voivodeships with the lowest potential and strengthening the most developed regions.

References

Adamowicz M., Siedlanowski P., 2021, *Migracja jako uwarunkowanie rynku pracy w Polsce,* [in:] *Rynek pracy wobec wyzwań przyszłości–ujęcie interdyscyplinarne*, Siedlecka A., Guzal-Dec D. (eds), Wydawnictwo PSW, Biała Podlaska.

Borjas G.J., 1989, *Economic Theory and International Migration*, [in]: *International Migration,* Review, no. 3, pp. 457–485.

Bożek J., Szewczyk J., Jaworska M., 2021, *Poziom rozwoju gospodarczego województw w ujęciu dynamicznym*, "Rozwój Regionalny i Polityka Regionalna", no. 57, pp. 11–24, DOI: 10.14746/rrpr.2021.57.02, 2021.

Carstensen K., Touba F., 2004, *Foreign Direct Investment in Eastern European Countries: A Dynamic Panel Analysis*, "Economics of Transition", vol. 12(2), pp. 3–22.

Cieślik A., 2017, *Ewolucja teorii bezpośrednich inwestycji zagranicznych: przegląd wybranej literatury przedmiotu*", "International Entrepreneurship Review", no. 3(3) pp. 171–189.

Długosz M., Szmytkie R., 2022, *Obszary wiejskie w systemie migracji wewnętrznych w Polsce*, "Studia Regionalne i Lokalne", vol. 3(89), pp. 86–100.

Dumeignil C., 2020, *Determinants and Impacts of Cross-border Labour Mobility,* PhD Thesis, Université Savoie Mont Blanc, Jacob-Bellecombette.

Kinoshita Y., Campos N.F., 2003, *Why Does FDI Go Where It Goes? New Evidence from the Transition Economies*, IMF Working Paper, WP/03/228.

Kiniorska I., 2017, *Mobilność przestrzenna na obszarach Polski Wschodniej*, "Biuletyn KPZK PAN", no. 267, pp. 102–120.

Mcconnell C.R., Brue S.L., 1995, *Mobility, Migration and Efficiency*, [in:] *Contemporary, Labor Economics*, 4th ed., a.o. McGraw-Hill, New York.

Tassinopoulos A., Heinz W., 1999, *To Move or Not to Move: Migration of Labour in the European Union*, vol. 35, Institut für Arbeitsmarkt-und Berufsforschung der Bundesanstalt für Arbeit.

Śleszyński P., 2016, *Współczesne i prognozowane uwarunkowania demograficzno-migracyjne w rozwoju miejskiego systemu osadniczego Polski*, "Konwersatorium Wiedzy o Mieście", vol. 29, no. 1, pp. 97–106.

Unctad 2017, World Investment Report 2017, *Investment and the Digital Economy*, United Nations, Geneva.

Qian S., Wilson T., Qiao Y, 2001, *Determinants of Foreign Direct Investment across China*, "Journal of International Money and Finance", vol. 21(1), pp. 79–113, DOI: 10.1016/S0261-5606(01)00032-8.