

## Changes in the distribution of economic activity in Wrocław and its suburban area, 2008–2016

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**Abstract.** This article presents changes in the distribution of economic activity in Wrocław and its suburbs in the period 2008–2016. The study is based on the analysis of data from the REGON database. Additionally, the article presents the impact of migration of economic entities attributed to suburbanisation of economic entities on the changes noted in the distribution of economic entities in the Wrocław agglomeration. The article also presents the characteristics of migrating economic entities as part of the suburbanisation of economic entities in terms of numbers and types, as well as legal and capital status. Suburbanisation of economic entities was demonstrated to have a significant impact on the distribution of economic entities, both in Wrocław and in its suburban area, throughout the period of analysis.

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## 1. Introduction

The transformation of the Polish economic system that was initiated in the late 1980s and early 1990s increased the importance of entrepreneurship as a social and economic phenomenon (Baran, 2010; Zbierowski, 2014). In less than three decades since the transformation, Poles have demonstrated the entrepreneurial spirit, which significantly contributed to improving their financial status and quality of life (Baran, 2010). However, economic development and the growth in economic activity were not uniformly distributed. Large urban agglomerations and their close vicinities are certainly characterised by higher dynamics of change and greater economic activity (Kuciński, 1990; Pacione, 2009; Szymańska, 2009, 2013; Brezdeń & Szmytkie, 2019).

Urban agglomerations, consisting of a central city and suburban zone, are complex settlement systems that arrange the space around them. This induces significant changes, especially in the suburban area surrounding a large city (Musil, 1993; Pacione, 2009; Sýkora & Stanilov, 2014; Runge, 2016). A large city may stimulate, drive or inhibit the development of smaller centres in its neighbouring area by establishing more or less significant ties with the agglomeration (Szymańska, 2009; Runge, 2016). In such a system, a large city gradually transfers some of its housing functions and some specialised forms of services and industrial activities to other cities, while the main city itself maintains management and control functions, providing higher-tier services to the suburbs (Markowski & Marszał, 2006; Runge, 2016). Gradual urbanisation weakens the development of the central city and causes a slow demographic and economic transfer to the immediate surroundings (suburbanisation), and then to distant areas of the agglomeration (Runge, 2016).

In the world literature, and especially for Europe, studies of changes in the distribution of population and economic activity in cities are focused mainly on the impact of suburbanisation on agglomerations, on the core (central city) and the suburban area (the area surrounding the core, which has various definitions and designations). A characteristic feature discussed in many scientific publications is that the underlying conditions of this process differ

considerably in the cities of Western Europe and Central and Eastern Europe (e.g., Sýkora, 1999; Tosics, 2003; Couch et al., 2007; Kubeš, 2013; Sýkora & Stanilov, 2014). The contemporary stage of suburbanisation in Central and Eastern Europe started with the collapse of socialism in the early 1990s. In the cities of Central and Eastern Europe, suburbanisation first emerged in the capital cities, and then spread to larger cities, and continued in increasingly smaller urban cities at the regional level. This process differed from suburbanisation in Western European cities, mainly in terms of its momentum and intensity, as it was much faster and more intensive in post-socialist cities than in Western Europe. These specific features of suburbanisation in the post-socialist CEE countries were discussed in works on the case studies of: Budapest (Kovács, 1994; Kiss, 2002, 2004), cities in Czech Republic and Hungary (Nagy, 2001), Moscow (Kolosso et al., 2002; Rudolph & Brade, 2005), Tirana (Nae & Turnock, 2011; Pojani, 2011) and other cities in this region.

In Poland, the course and assessment of suburbanisation is well presented in the literature (Lisowski, 2005; Zborowski, 2008, Runge & Kłossowski, 2011; Runge, 2016), particularly its demographic aspect (e.g., Kajdanek, 2012; Szmytkie & Sikorski, 2020). Only a few studies indicate an increase in the number of economic entities in the suburban area (e.g., Zathay, 2005; Kurek et al., 2014, Łuków, 2016), but they do not examine the process of business relocation from the core. Apparently, there are still no studies that analyse suburbanisation in terms of economic transformations taking place in the urban agglomeration, understood as the impact of the transfer of economic entities from the central city to the neighbouring areas (suburban zone), which significantly affects the distribution of economic entities in the agglomeration.

The distribution of economic entities offering jobs to hundreds of thousands of people determines the directions and size of population movements. Areas with high population density may provide favourable conditions for business activities, but may also involve potential problems with communication, parking spaces, traffic congestion and quality of public spaces. For all these reasons, research and analysis of the locations where

companies and institutions operate are much needed (Cacko et al., 2019).

The aim of this article is to analyse changes in the distribution of economic entities in Wrocław and its suburban area in the period 2008–2016. In addition, in the course of this research, an attempt was made to estimate the impact of the suburbanisation of economic entities on the analysed phenomenon. Based on data from the REGON database, it was also possible to trace and examine the suburbanisation of economic entities in terms of the numbers, types and legal and capital status of economic entities that migrated within the analysed area during the period of analysis. It was hypothesised that changes in the distribution of economic entities in Wrocław and its suburban area in 2008–2016 point to suburbanisation of economic entities, which can be seen as a consequence of residential suburbanisation and an increase in population in the suburban area.

This article also attempts to answer a few fundamental research questions:

1. What is the scale of changes in the distribution of economic entities in Wrocław and its suburban area in the period 2008–2016?
2. Does suburbanisation of economic entities change the distribution of economic entities inside the Wrocław agglomeration? What are the characteristics and specificity of this process?
3. Are the observed changes in the distribution of economic entities in the studied area analogous to the observed changes in other cities and their suburban zones? What are these areas characterised by?
4. Are there any noticeable spatial and/or location regularities in the changes in distribution of economic activity in the Wrocław agglomeration?

## 2. Study area

With nearly a million inhabitants, Wrocław and its suburban area constitute the most important urban agglomeration of south-west Poland (Książek & Szuszczyk, 2017). Throughout its history, this area has been characterised by numerous changes

of a political, social and economic nature (Szmytkie, 2019). The key phenomena and factors determining the development of this area over the centuries include: numerous changes in nationality of the local population, convenient location (not far away from Berlin and Prague, on the Odra River), a huge scale of destruction after World War II (over 70% of Wrocław was destroyed), the socialist system which prevailed from 1945 to 1989, and the socio-economic and political transformation after 1989 (Książek & Szuszczyk, 2017)

Despite its turbulent history, this area has been experiencing intensive socio-economic revival in the recent years, and the Wrocław agglomeration itself underwent transformation processes typical for similar agglomerations of Western Europe after World War II. Currently, suburbanisation is one of the most important processes modelling the socio-economic characteristics of this agglomeration (Brezdeń & Szmytkie, 2019; Szmytkie & Sikorski, 2020). Several basic phases of suburbanisation can be distinguished based on changes taking place in recent years in the suburban zone surrounding Wrocław (Brezdeń & Szmytkie, 2019):

1. settling of migrants from city in the suburban zone, low intensity of construction traffic, mainly individual, construction of villa housing estates, a slight increase in the number of economic entities, especially small service activities (1989–2002);
2. more intensive construction traffic in the suburban zone, especially of private individuals, emergence of housing estate developers, further development of service activities in suburbs and transformation of their social structures (2003–2007);
3. further increase in construction traffic in the suburban zone and diversification of its housing development (intensive growth of developer housing estates), development of large-format facilities (commerce, industry) in the suburban zone (since 2008).

Wrocław has over 640,000 inhabitants, and there are nearly 125,000 economic entities (Statistics Poland 2019). In administrative terms, it is divided into 48 residential districts of various sizes and socio-economic potential (Fig. 1). The suburban zone of the Wrocław agglomeration is made up of nine municipalities surrounding the city (Fig.

2), where almost 180,000 people live, and 27,000 economic entities operate (Statistics Poland 2019). In total, 235 statistical localities of different specificity and level of development were demarcated in the suburbs of Wrocław.

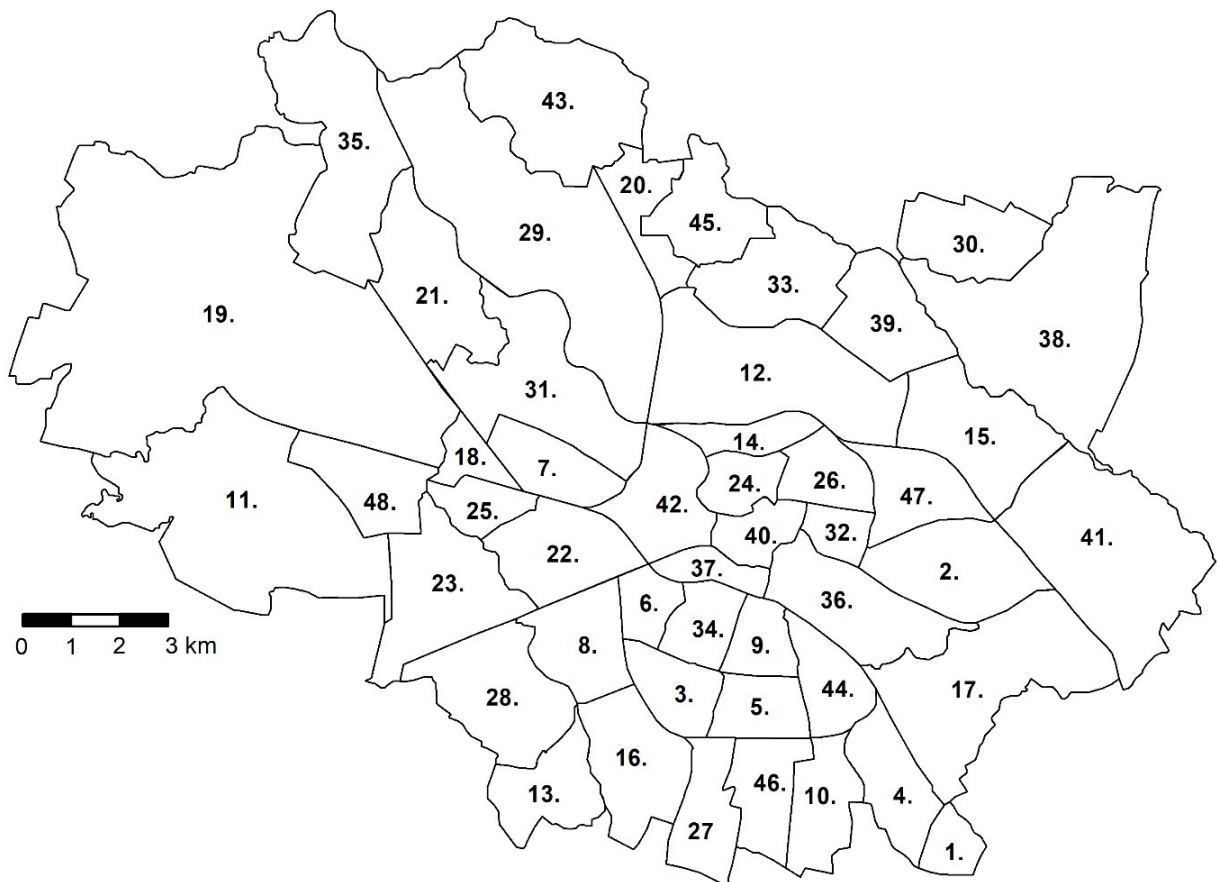
### 3. Data and methods

The change and growth rate of the number of economic entities in Wrocław and its suburban area for the period 2008–2016 were examined on the basis of the REGON (Register of National Economy) database of Statistics Poland (Główny Urząd Statystyczny). In this database, the economic

entities were analysed in terms of registered office, employment structure, ownership structure and legal form.

The identified changes were visualised and mapped onto 48 residential districts of Wrocław. The city was divided into 48 residential districts in accordance with the provisions of the Resolution of the Wrocław City Council No.XX/419/16 on the division of Wrocław into residential districts as of 2016.

The area of direct impact (suburban zone) is the so-called first ring of municipalities surrounding the city of Wrocław, and the data are presented for statistical localities located in these local



**Fig. 1.** Settlement units within Wrocław city

Names of settlement units: 1. Bienkowice 2. Biskupin – Sępolno – Dąbie – Bartoszowice 3. Borek 4. Brochów 5. Gaj 6. Gajowice 7. Gądów – Popowice Płd. 8. Grabiszyn – Grabiszynek 9. Huby 10. Jagodno 11. Jerzmanowo – Jarnołtów – Strachowice – Osiniec 12. Karłowice – Różanka 13. Klecina 14. Kleczków 15. Kowale 16. Krzyki – Partynice 17. Księż 18. Kuźniki 19. Leśnica 20. Lipa Piotrowska 21. Maślice 22. Muchobór Mały 23. Muchobór Wielki 24. Nadodrże 25. Nowy Dwór 26. Olbin 27. Ołtaszyn 28. Oporów 29. Osobowice – Rędzin 30. Pawłowice 31. Pilczyce – Kozanów – Popowice Płn. 32. Plac Grunwaldzki 33. Polanowice – Poświętne – Ligota 34. Powstańców Śląskich 35. Prace Odrzańskie 36. Przedmieście Oławskie 37. Przedmieście Świdnickie 38. Psie Pole – Zawidawie 39. Sołtysowice 40. Stare Miasto 41. Strachocin – Swojczyce – Wojnów 42. Szczepin 43. Świniary 44. Tarnogaj 45. Widawa 46. Wojszyce 47. Zacisze – Zalesie – Szczytniki 48. Żerniki

Source: Elaborated by the authors based on Resolution of Wrocław City Council No.XX/419/16 on the division of Wrocław into residential districts as of 2016





**Fig. 2.** City districts of Wrocław city and municipalities in suburban area

City districts of Wrocław: A. – Fabryczna B. – Krzyki C. – Psie Pole D. – Stare Miasto E. – Śródmieście.

Suburban municipalities: 1. – Czernica 2. – Długołęka 3. – Kąty Wrocławskie 4. – Kobierzyce 5. – Miękinia 6. – Oborniki Śląskie 7. – Siechnice 8. – Wisznia Mała 9. – Żórawina

Source: Elaborated by the authors

government units. The spatial scope of this analysis draws on the definition of a suburban zone adopted by Straszewicz (1985), who defined it as an area directly surrounding or adjacent to a large city. This approach was adopted to standardise the spatial scope of the study, in order to address the ambiguity of the spatial scope of functional urban areas as defined by various authors (compare with Smętkowski et al., 2009; Szmytkie, 2013; Śleszyński, 2013, 2015).

Moreover, this level of detail in the reference units make it possible to better define local conditions and indicate specific areas of economic success vs. regress, which is increasingly postulated in domestic and foreign literature (Strijker, 2005; Sørensen, 2018; Śleszyński & Komornicki, 2016; Chand et al., 2017; Sikorski et al., 2020).

To compare the changes in Wrocław with analogous changes in its suburban area, relative data per 1000 inhabitants were used in the analysis and visualisation (Fig. 3 and Fig. 4).

Additionally, to be able to determine the impact of suburbanisation of economic entities in Wrocław – within its administrative borders (from the city centre to peripheral residential districts located outside the compact urban development zone) and from the city to the suburban area – the registered offices of economic entities in 2008 were compared with their official places of business in 2016 (the comparison was made using the REGON number, which presumably did not change) (Table 3, Fig. 5, Fig. 6a, 6b).

By using the concept of suburbanisation of economic entities in the article, the authors mean the change in the actual address of the seat of the business entity from the central districts of the city to peripheral city districts or the suburban zone of the agglomeration under study in 2008–2016.

The credibility of data in the REGON database (Sokołowski, 2006; Śleszyński, 2007, 2010; Raczyk, 2009; Celińska-Janowicz, 2016; Kłosowski, 2014) is another issue. The most common problems with this database include:

1. frequent failure by economic entities to report the closure of a business (according to Raczyk's estimates (2009), this problem accounts for even 30–40% of entities in the register);
2. numerous changes in defining, naming and creating the REGON database itself (e.g. throughout the past 20 years, economic entities in the database have been classified according to five different business classifications: EDG 1998, PKD 2000, PKD 2004, PKD 2007, PKD 2010);
3. the wide range of business activities assigned to individual economic entities, which makes it difficult to clearly define the area and scope of their business activity;
4. absence of specific categories of service and commercial establishments in the registers, such as bank branches or chain stores;

Therefore, the data are presented for illustration purposes only to validate the specific trends in the distribution of economic entities in Wrocław and its

suburban area in recent years, rather than to render a real and statistical picture of this phenomenon.

#### 4. Changes in the distribution of economic activities in Wrocław

In 2008–2016, the number of economic entities in Wrocław increased from 99,432 to 120,577 (an increase of 21.3%). This increase in economic activity in Wrocław was mainly due to a rise in the number of economic entities in the service sector, where 9,530 new economic entities were established during the analysed period (an increase of 25.6%). In the division of the city into central and peripheral districts, a significant difference was noticeable in the change in the number of economic entities in 2008–2016. In absolute terms, there were more economic entities in the so-called central (internal) districts of the city, but in terms of the dynamics of changes (relative values), the peripheral districts were characterised by a much faster growth in the number of economic entities (Table 1).

Per 1,000 inhabitants, Wrocław had an average of 189.1 economic entities in 2016, i.e. 31.8 more than in 2008 (an increase of 20.2%). The geographic

distribution of economic entities in Wrocław in 2016 was uneven. They were more concentrated in some central city districts (e.g. Stare Miasto – 1,095.5 entities per 1,000 inhabitants; Grabiszyn-Grabiszynek – 336.5, Plac Grunwaldzki – 323.1) or peripheral city districts (e.g. Kowale – 499.1, Jerzmanowo-Jarnołtów-Strachowice-Osiniec – 268.0, Książę – 266.8). Peripheral districts, such as Prace Odrzańskie (75.2), Brochów (109.6) and Pawłowice (118.3), had a low level of economic activity (Fig. 3a).

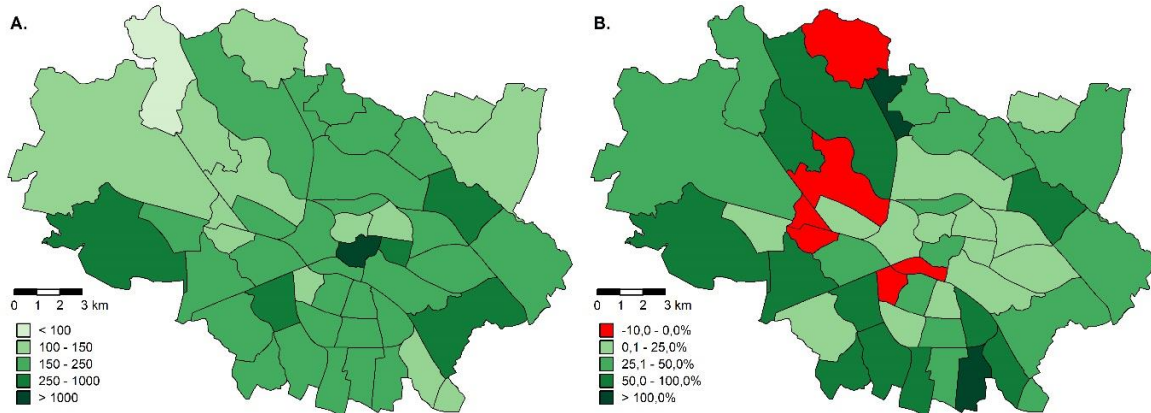
The highest dynamics of changes in the number of economic entities per 1,000 inhabitants in 2008–2016 was reported for:

- positive dynamics: peripheral residential districts, especially in the south-western part of the city, e.g. Jagodno (an increase of 149.6%), Lipa Piotrowska (+100.6%) and Jerzmanowo-Jarnołtów-Strachowice-Osiniec (+81.0%)
- negative dynamics: central residential districts and those located around the historic city centre, such as Kuźniki (a decrease of 8.5%), Przedmieście Świdnickie (-5.0%), Nowy Dwór (-4.1%), Gajowice (-4.1%), or peripheral residential districts, e.g. Świniary (-9.5%) (Fig. 3b).

**Table 1.** Characteristics of changes in number and share of economic entities within Wrocław, 2008–2016

Area	Changes in number of economic entities				Changes in share of economic entities			
	A	I	S	total	A	I	S	total
Central districts	-284	+645	+11,254	+11,615	-10.4%	+5.0%	+17.8%	+14.7%
Peripheral districts	-220	+1,076	+8,674	+9,530	-15.8%	+25.0%	+58.2%	+46.2%
Wrocław city	-504	+1,721	+19,928	+21,145	-12.2%	+9.9%	+25.6%	+21.3%

Source: Elaborated by the authors based on the REGON database



**Fig. 3.** Number of economic entities in 2016 (A), and change in number of economic entities in the years 2008–2016 (B), per 1,000 inhabitants in Wrocław by settlement units

Source: Elaborated by the authors based on Resolution of Wrocław City Council No.XX/419/16 on the division of Wrocław into residential districts as of 2016

**Table 2.** Characteristics of changes in number and share of economic entities in the suburban area of Wrocław, 2008–2016

Municipality	Changes in number of economic entities				Changes in share of economic entities			
	A	I	S	total	A	I	S	total
Czernica	-66	+54	+698	+686	-15.4%	+47.8%	+91.4%	+52.6%
Długołęka	-146	+118	+1,456	+1,428	-10.1%	+46.6%	+83.4%	+41.2%
Kąty Wrocławskie	-137	+66	+996	+925	-14.5%	+41.8%	+65.7%	+35.5%
Kobierzyce	-93	+93	+1,282	+1,282	-12.8%	+67.9%	+88.8%	+55.6%
Miękinia	-135	+74	+498	+437	-20.9%	+46.8%	+61.4%	+27.1%
Oborniki Śląskie	-117	+26	+348	+257	-15.9%	+10.9%	+19.9%	+9.4%
Siechnice	-75	+70	+1,138	+1,133	-12.2%	+38.3%	+89.5%	+54.7%
Wisznia Mała	-85	+28	+276	+219	-15.5%	+24.6%	+36.8%	+15.5%
Żórawina	-74	+40	+432	+398	-12.2%	+47.6%	+68.0%	+30.0%
Suburban zone	-928	+569	+7,124	+6,765	-13.8%	+39.5%	+66.7%	+35.9%

Source: Elaborated by the authors based on the REGON database

## 5. Changes in the distribution of economic activity in the suburban area of Wrocław

In the analysed period, the number of economic entities in the suburbs of Wrocław increased from 18,828 to 25,593 (an increase of 35.9%). Likewise, the increase in economic activity in the analysed region is mainly due to the increase in the number of business in the service sector (an increase of 7,124 entities; +66.7%). The largest number of economic entities was established in statistical localities of municipalities: Długołęka (+1,428 entities), Kobierzyce (+1,282) and Siechnice (+1,133). The municipalities of: Kobierzyce (an increase of 55.6%), Siechnice (+54.7%) and Czernica (+52.6%) were characterised by the highest growth dynamics.

There were 166.6 economic entities in the suburban area of Wrocław per 1,000 inhabitants in 2016, i.e. 16.1 more than in 2008 (an increase of 10.7%). The distribution of economic entities in the suburbs of Wrocław clearly exhibits the highest concentration of economic entities around the city centre and near the southern edge of the city (Fig. 4a).

The highest dynamics of change in the number of economic entities per 1,000 inhabitants of the suburban area in 2008–16 was recorded:

- positive dynamics: in statistical localities near the southern and eastern edge of the city, e.g. in Brzeście (Żórawina

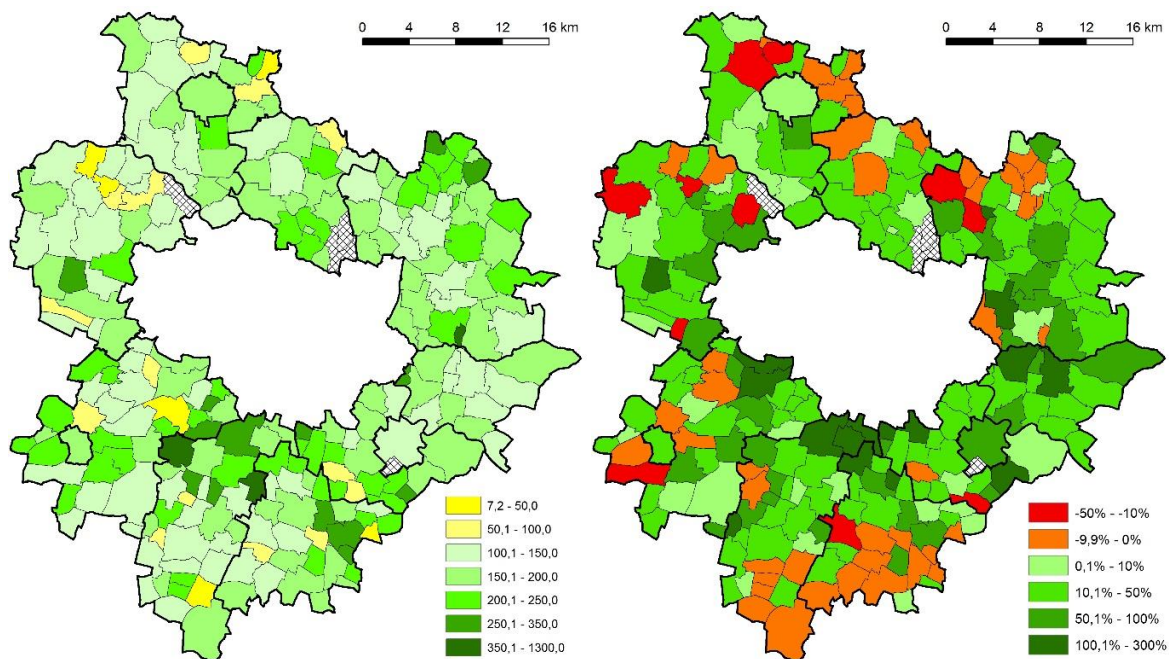
municipality, +349.6%, Biskupice Podgórne (Kobierzyce municipality; +87.6%), Górzycza (Kąty Wrocławskie municipality; +76.7%), Krobielowice (Kąty Wrocławskie municipality; +72.2%) and in other villages,

- negative dynamics: mainly in statistical localities on the outskirts of the suburban zone, far from the city borders, such as: Czerna (Miękinia municipality; -51.9%), Bratowice (Żórawina municipality; -46.7%), Pisarzowice (Miękinia municipality; -33.9%), Skała (Długołęka municipality; -32.5%), Zakrzyce (Miękinia municipality; -31.1%) and in other villages (Fig. 4b).

## 6. Suburbanisation of economic entities in the Wrocław agglomeration

In 2008–2016, more than 10,791 economic entities in Wrocław and its suburbs changed their registered office. The vast majority of migrations of economic entities took place within the city borders: as many as 8,667 entities changes their official place of business in 2016, compared to their 2008 status. Interestingly, as many as 6,310 out of 8,667 entities (+72.8%) moved to the peripheral districts of Wrocław. Economic entities migrating from Wrocław to the suburban area numbered 1,618. Only 506 entities migrated from the suburban area to Wrocław in 2008–2016.





**Fig. 4.** Number of economic entities in 2016 (A), and change in number of economic entities in the years 2008–2016 (B), per 1,000 inhabitants in the suburban zone of Wrocław by statistical localities

Source: Elaborated by the authors based on the REGON database

The share of migrating economic entities in the overall business sector in 2016 was most prominent in peripheral residential districts of the city of Wrocław, where they constituted as much as 11.9% of all economic entities based here. Migrating economic entities also accounted for 41.0% of all new economic entities in Wrocław that were established in 2008–2016 and 23.9% of entities that were registered in the suburban area of the city. Migrating economic entities had the most profound impact on the increase in the number of economic entities in the outskirts of Wrocław, where they constituted as many as 66.2% of all new entities established there in the analysed period (Table 3).

As already mentioned, the directions of migration of economic entities in 2008–2016 in Wrocław and its suburban area varied in size and intensity. In the city itself, economic entities in the southern districts of the city were much more likely to change their registered place of business (Krzyki district – 1,147 entities; Fabryczna district – 1,019) (Fig. 5).

On the other hand, economic entities migrating from Wrocław to the suburban area mostly moved to the municipalities of: Długołęka (330 entities), Kobierzyce (253) and Siechnice (240). The distribution of economic entities that migrated

from the city to the suburban zone resulted in their increased concentration in statistical localities located near the city border, and particularly the southern and south-eastern border of Wrocław (Fig. 6a). Similar patterns can be identified when analysing the spatial visualisation of the share of migrating entities among all economic entities registered in individual statistical units of the suburban area (Fig. 6b).

When analysing the type, legal form and capital structure of the economic entities that migrated in 2008–2016 in all of the above-mentioned directions (sections of PKD 2007), it can be concluded that:

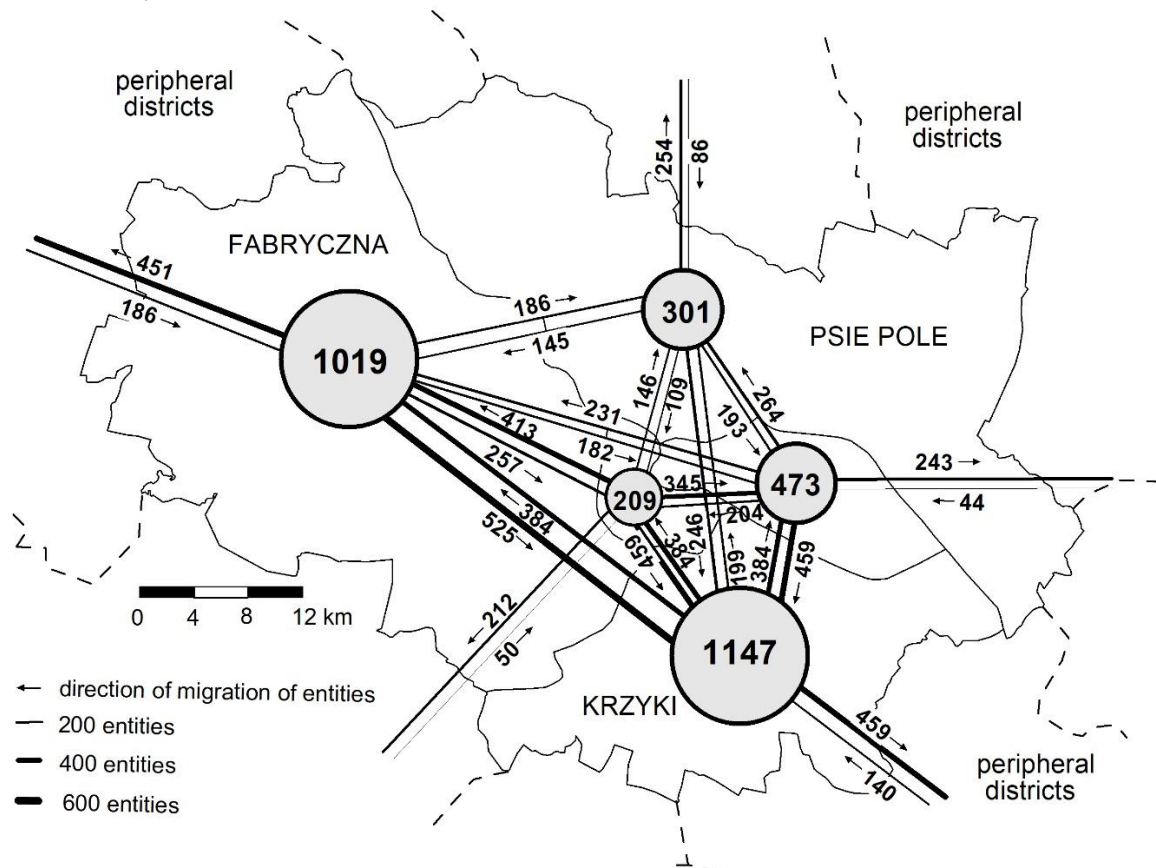
- the most frequently migrating economic entities in the studied area are commercial entities (section G), entities offering real-estate services (section L) and entities conducting professional, research and technical activities (section M),
- the migrating economic entities are mainly natural persons running a business activity (sole proprietorships), although other legal forms are also common in specific directions of business migration (e.g. migrations within the inner districts in Wrocław),



**Table 3.** Directions of migration of economic entities in Wrocław and its suburban zone, 2008–2016

Directions of migration		Number of migrating economic entities in 2008–2016	Share of migrating economic entities in total entities in 2016	Share of migrating economic entities in the growth of entities in 2008–2016
Within Wrocław	Central districts	2,357	3.5%	20.3%
	Peripheral districts	6,310	11.9%	66.2%
	Total	8,667	7.2%	41.0%
From Wrocław city to the suburban zone		1,618	6.3%	23.9%
From the suburban zone to the Wrocław city		506	0.4%	2.4%

Source: Elaborated by the authors based on the REGON database



**Fig. 3.** Scheme and intensity of migration of economic entities in Wrocław and its suburban zone, 2008–2016

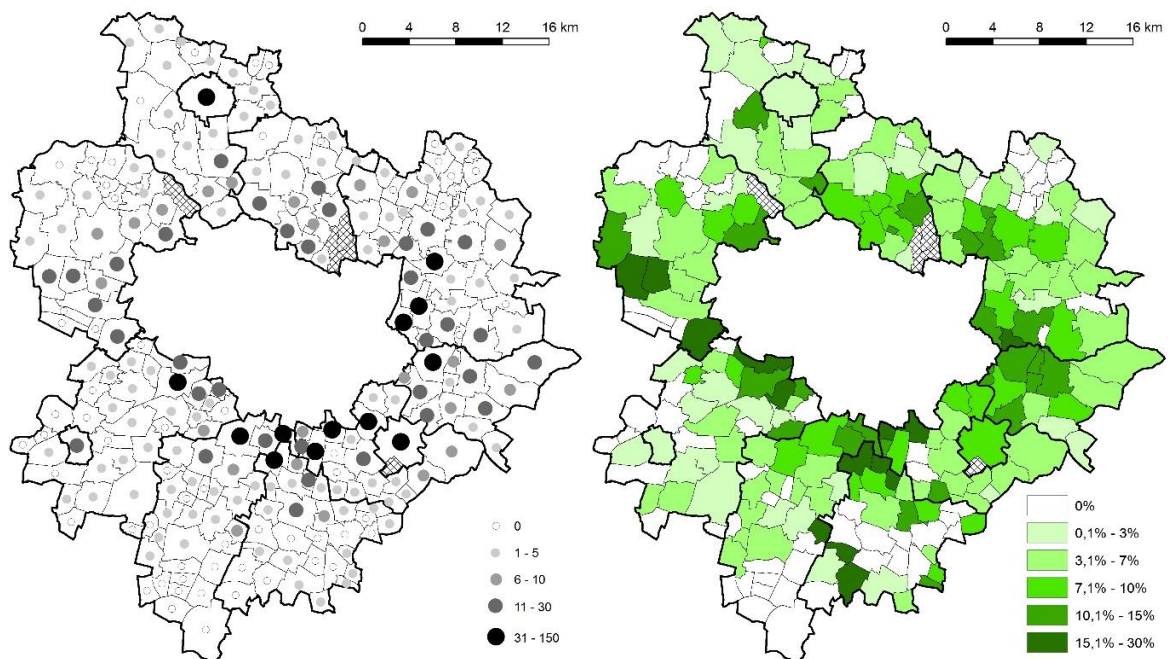
Source: Elaborated by the authors based on the REGON database

- the vast majority of migrating economic entities are entities with domestic capital (Table 4).

### 7. Discussion

The research and analyses carried out demonstrate the high dynamics of changes in the number and distribution of economic entities in the Wrocław agglomeration, despite nearly three decades having passed since the political transformation in Poland.

The dynamic changes can largely be attributed to the fact that the development pattern of Eastern European cities during the socialism era (until 1989) differed significantly from their Western counterparts (Hamilton, 1979; Sheppard, 2000; Kubeš, 2013; Stanilov & Sýkora, 2014, Sýkora & Stanilov, 2014). One of the most striking differences was that the socialist cities lacked a suburban periphery and suburbanisation processes were very limited (Tammaru, 2001; Logan, 2019). Instead of the extensive suburban residential districts



**Fig. 6.** Number of economic entities migrating from Wrocław to the suburban zone in the years 2008–2016 (A), and share of migrating economic entities from Wrocław in overall structure of entities in the suburban zone in 2016 (B), by statistical localities

Source: Elaborated by the authors based on the REGON database

**Table 4.** Characteristics of migration of economic entities in Wrocław and its suburban zone, 2008–2016

Directions of migration	Most frequent:			
	section of PKD 2007	legal form of entities	form of capital	
Within the Wrocław	Central districts	24.3% - section L 15.6% - section M 15.1% - section G	54.7% - natural person 45.3% - other forms	96.6% - domestic 3.4% - foreign
	Peripheral districts	21.0% - section G 18.6% - section M	70.6% - natural person 29.4% - other forms	96.1% - domestic 3.9% - foreign
	Total	20.1% - section L 16.7% - section G 16.4% - section M	59.0% - natural person 41.0% - other forms	96.5% - domestic 3.5% - foreign
	From Wrocław city to the suburban zone	19.3% - section G 18.3% - section M	85.4% - natural person 14.6% - other forms	97.0% - domestic 3.0% - foreign
	From the suburban zone to the Wrocław city	21.6% - section G 12.8% - section M 10.9% - section L	76.7% - natural person 23.3% - other forms	86.5% - domestic 13.5% - foreign

Source: Elaborated by the authors based on the REGON database

surrounding cities in capitalist countries, socialist cities had a distinct urban perimeter dotted with state-built, large-scale, high-density residential districts (Hirt, 2007). Political changes paved the way for the revitalisation and commercialisation of buildings in city centres, the privatisation of housing stock, the construction of shopping centres and new residential districts on the outskirts of cities, suburbanisation, the diversification of social space, and other processes that have changed the

spatial structure of cities and their surroundings (Kubeš, 2013). The nature, form and dynamics of changes in the Wrocław agglomeration are similar to changes taking place in other Eastern European cities, such as Sofia (Hirt, 2007), Budapest (Kiss, 2002, 2004) or Prague (Kubeš, 2013; Stanilov & Sýkora, 2014; Sýkora & Stanilov, 2014). Those transformations have changed the functional and spatial structures in the post-communist city, which consists of three, and up to four rings: these imply

the compact city/inner-city areas, the communist-era housing districts and the suburban periphery (Sýkora, 1999; Hirt & Stanilov, 2007) caused by the market economy, which is already changing the behaviour of four groups of urban actors: shops and services; industry; house-owners; and private households (Musil, 1993). The transformations of spatial structures of these cities were several dozen years quicker than in Western European cities.

Therefore, it makes complete sense that, as a consequence of striving to establish a similar operating model of urban agglomerations as in Western Europe, the pace of changes in the distribution of economic entities in the Wrocław agglomeration was higher than in the city itself. This is largely attributable to the progressive urbanisation of Poland, and in principle to the transition from urbanisation to suburbanisation and deurbanisation (van den Berg et al., 1982), and the resulting changes in the number of inhabitants and the business activity in the suburbs.

Based on the studies and analyses carried out, it can be concluded that the Wrocław agglomeration is currently in the process of suburbanisation of economic entities, which is characterised by an increase in the number of economic entities in the suburban area, a change in the employment structure in three sectors of the economy, and the transfer of economic activity to outside the city centre.

Similar phenomena are also observed in other large cities and urban agglomerations in Poland, such as: Warsaw agglomeration (Śleszyński, 2015; Solarek, 2017), Poznań agglomeration (Jancz, 2016. Kaczmarek, 2017), Cracow agglomeration (Kurek et al., 2014), Katowice conurbation (Runge & Kłosowski, 2011) or Rzeszów agglomeration (Łuków, 2016). Agricultural activity is increasingly being driven out of the suburban area and non-agricultural sectors are becoming more prevalent in this area. One of the aspects of economic suburbanisation is the transformation of socio-professional structures consisting in an increase in the share of people living off non-agricultural activities in the total population, but also in a significant diversification of the employment structure. The progress of economic suburbanisation is associated with the transition from agriculture to non-agricultural activities, from a traditional society to a modern,

urban society (Łuków, 2016). Examples of economic suburbanisation in Polish cities are similar to those of other post-socialist cities of Central and Eastern Europe (Sýkora & Ouředníček, 2007; Kubeš, 2013).

In Wrocław and its suburban area, suburbanisation of economic entities has a dual dimension: internal and external. Internal suburbanisation of economic entities consists in the transfer of economic entities from central city districts to peripheral districts. External suburbanisation of economic entities involves the migration of economic entities from Wrocław to the suburban zone. While suburbanisation of economic entities along the city–suburbs axis in post-socialist CEE cities are well known in the literature (Kubeš, 2013), analyses describing the migrations of economic entities within the city are scarce. Moreover, papers concerning internal suburbanisation in essence restrict themselves to recognising this phenomenon, focusing on the residential form of the process (Sýkora & Ouředníček, 2007; Sýkora & Stanilov, 2014; Spórna, 2018; Kovács et al., 2019; Szafrńska et al., 2019; Spórna & Krzysztofik, 2020).

The fact that suburbanisation of economic entities has a crucial impact on the distribution of economic entities in the city and its suburban area is evidenced by the significant share of migrating entities in the growing number of economic entities established in peripheral districts of Wrocław and its suburban area in 2008–2016, and by the structure and characteristics of the migrating economic entities. In the analysed period, the migrating entities were mainly natural persons running a business activity (sole proprietorships), mainly involved in trade, real-estate management or in professional, research and technical activities. These economic entities are usually highly mobile, and it is highly probable that the migration resulted from the change in place of residence of their owners. Thus, it can be concluded that the suburbanisation of economic entities is, in a sense, a consequence of residential suburbanisation. However, to clearly state the relationship between economic suburbanisation and demographic suburbanisation (especially residential), this issue should be further investigated.

The direction of migration of economic entities from the centre of Wrocław to the peripheral city districts and the suburban zone is also related to the gradual process of commercialisation of the

city centre. As research has shown (Miszevska, Szmytkie, 2009) the city centre of Wrocław was gradually commercialised after 1989, in connection with the operation of the land rent mechanism. This manifested itself in the locating of headquarters of companies providing higher-level services (e.g. banks, law firms, insurance and investment companies, etc.). This process was analogous to other examples of post-socialist cities in Central and Eastern Europe (see Musil, 1993; Stanilov, 2007; Musiaka et al., 2021).

In the light of the research carried out, it can be concluded that suburbanisation is currently one of the key processes that transform post-socialist cities (Ouredniček, 2007). However, the pace of changes and their duration varies across different cities of Central and Eastern Europe and largely depends on the local and regional conditions of a given agglomeration (Kubeš, 2013).

The preferred locations for migrating or new economic entities constitute another issue that can be analysed in the context of changes in the distribution of economic entities in Wrocław and its suburbs. The research and analyses carried out clearly indicate that, in the analysed period, the dynamics of changes were much higher:

- as for Wrocław: in peripheral districts characterised by a rapid population growth (e.g. Jagodno) and in peripheral districts with important transport infrastructure (e.g. Jerzmanowo-Jarnołtów-Strachowice-Osiniec, in which the Wrocław Airport is located),
- as for municipalities in the suburban zone: in localities that have already achieved economic success and are additionally conveniently located (Długołęka and Kobierzyce municipalities),
- as for specific statistical localities in the suburban zone: in localities near the city border along the main communication arteries (Biskupice Podgórne, located at the Bielany Wrocławskie motorway junction).

The impact of transport infrastructure on economic development, including the distribution of economic activities, has already been extensively discussed (e.g. Ratajczak, 2000; Lechowski, 2019). As pointed out by Lechowski (2019), it is commonly accepted

that the construction and operation of higher-tier communication routes has a positive impact on economic growth and regional development (Komornicki et al., 2015) and attracts existing and newly emerging economic entities. Empirical studies show, however, that this relationship is much more complex (Lechowski, 2019). The relationship between economic growth and the development of transport infrastructure can be compared to a feedback loop rather than a simple one-way correlation (Jiwattanakupaisarn et al., 2009). Both the development and the existing higher-tier transport infrastructure stimulate the economic activity in a given area, and a region with high economic activity stimulates the development of infrastructure and transport facilities (Domański, 2006; Lechowski, 2019).

The changes in the distribution of economic entities in Wrocław and its suburbs confirm these assumptions. The migrations and the growing number of new economic entities in the Wrocław agglomeration largely correlated with the location of a higher-tier transport infrastructure in a given area (e.g. an airport, motorway, national road or main rail line) or with areas already associated with economic success. The functions of the suburban zone are not limited merely to the development of housing or minor services in suburban rural areas. Nowadays, the suburban zone is also a place where industrial activity and large-scale trade are concentrated (Brezdeń & Szmytkie, 2019).

## 8. Conclusion

The distribution of economic activities in a large city and its suburbs varies with time. This is due to many factors, which include: the land rent mechanism, the profile of business activity, the capital for purchasing or renting business premises, the communication system, and the spatial development policy in the city, etc. The following patterns can be identified in the area under analysis:

- the period 2008–2016 witnesses significant changes in the distribution of economic entities within the city borders. The highest increase in the number of economic entities was reported in the peripheral districts of the city. Declines in both parameters were observed in the residen-



tial districts surrounding the Old Town (central residential districts),

- there was a significant increase in the number of economic entities in municipalities located in the first ring of the suburban zone (which was highest in Kobierzyce and Długołęka municipalities),
- the nature and scale of changes in the number of economic entities in relation to statistical localities is, however, very diverse. The greatest increase occurred in the localities directly adjacent to the city,
- the directions of migration of economic entities in Wrocław and the suburban area were centrifugal (from the city centre to peripheral districts, from the city to the suburban area), which is typical for suburbanisation of economic entities,
- the share of economic entities migrating from Wrocław in statistical localities of the suburban municipalities varies, but the highest was reported in localities directly adjacent to the city.

This study proves that the spatial and functional structures of Wrocław and its suburban area are currently undergoing significant transformations, which is manifested in the observed changes in the distribution of economic entities, which are largely attributed to suburbanisation. Suburbanisation is no longer a purely demographic phenomenon (population migration from the city centre to the suburban zone), but with each year it is more and more economic (migration of entities from the city centre to the suburban zone). It can also be concluded that the suburbanisation of economic entities is a consequence of residential suburbanisation, which results from the fact that most entities migrating to the suburban area are natural persons running a business activity, in which case a change of place of residence also entails a change of place of business. The distribution of economic entities also affected the gradual commercialisation of the city centre, consisting in the gentrification of its space and the dedication of its space to a higher-level service company (e.g. banks, law firms, insurance and investment companies, etc.) with a high degree of capitalisation.

The analysis of data on the transfer of economic activity from Wrocław to its suburban area in the period 2008–2016 confirms the research hypothesis that changes in the distribution of economic en-

tities in the analysed urban complex are indicative of economic suburbanisation, which can be seen as a consequence of residential suburbanisation and population growth in the suburban area. The changes observed in Wrocław and its suburbs are very similar to changes taking place in other cities of the post-socialist states of Central and Eastern Europe, but – due to the historical background – are clearly different from the changes identified in Western European cities.

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