

# 6. The geography of consumer goods logistics in Poland—a diagnosis of the period since the COVID-19 pandemic



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## Abstract

**Purpose:** The aim of the work is to find answers to four research questions. What is the geography of: 1) consumer goods production centers in Poland? 2) centers of consumption of consumer goods in Poland? 3) transport corridors used to move consumer goods? 4) what is the location system of logistics hubs supporting the movement of goods?

**Design/methodology/approach:** The study used quantitative data mainly from public statistics Statistics Poland—LOCAL DATA BANK, supplemented with information from consulting companies on the logistics real estate market. The analysed locations are urban complexes. The time scope of the study covers the year: 2020 to indicate GDP and average expenditure per person; 2021 for the number and size of logistics facilities. The analysis used: desk research, web research, simple statistical indicators, cartographic methods and deductive logical reasoning.

**Findings:** As the analysis shows, there are very large economic inequalities in Poland, which are deepened by the concentration of production. The best developed regions are voivodeships with the greatest socio-economic potential concentrated in its main center, i.e. in the agglomerations of Warsaw, Poznań, Wrocław, Kraków, Łódź, Tricity and the Silesian conurbation. The share in consumption of the seven largest urbanised areas in Poland is 41.8%, which is much less than the total share in GDP generation (50.8%). The activities of production centers are closely related to broadly understood warehouse management.

### Suggested citation

Banaszyk, P., & Budner, W. (2024). The geography of consumer goods logistics in Poland—a diagnosis of the period since the COVID-19 pandemic. In E. Mińska-Struzik & B. Jankowska (Eds.), *Is there any “new normal”? Economics of the turmoil* (pp. 113–128). Poznań University of Economics and Business Press. <https://doi.org/10.18559/978-83-8211-217-7/6>



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**Originality and value:** The existing spatial economic and demographic pattern influenced the formation of consumption centres. The share of the designated 16 metropolitan centres in household expenditure was 57.0%, correspondingly less than GDP (65.6%). The factors determining the location of major hubs are primarily: geographical location near the urban agglomeration, transport accessibility, which is determined by the transport infrastructure (road and rail, but also proximity to airports and seaports) and the absorptive capacity of the local market in terms of the services offered.

**Keywords:** geography, logistics, consumer goods, Poland, COVID-19.

## Introduction

In recent years, the so-called TFL (transport, forwarding, logistics) sector has been developing dynamically all over the world, including Poland (Zysińska, 2019). This process should not come as a surprise if one takes into account the evolution of contemporary economic conditions, especially the advancing globalisation and digital transformation. The accelerating factor was undoubtedly the COVID-19 pandemic, which saw a surge in e-commerce sales volumes and the spread of IT infrastructure to facilitate them. Consumers' shopping habits changed in a revolutionary way (Olszowy et al., 2022). The pandemic has completely changed the picture of e-commerce in the world, also in Poland. For example, the value of the Polish e-commerce market increased from PLN 50 billion in May 2019, already surpassing PLN 100 billion in the pandemic year 2020, and 77% of internet users were shopping online, i.e. 15 percentage points more than even a year earlier. At the same time, the number of online sellers has almost doubled from 30,000 (in 2019) to more than 55,000 (end of 2022) (Cushman & Wakefield, 2022). The consequence of this transformation is the growing importance of the logistics industry. There is a growing assessment of the progressive logisticsisation of the economy globally and in Poland (Fabbe-Costes & Rouquet, 2019; Gołemska, 2022).

In the most general terms, the task of logistics is to connect producers (sellers) of various goods with users (consumers) in an economically efficient, reliable and practically effective manner. In addition to traditional distribution channels (single channel), increasingly sophisticated electronic channels are gaining in importance. So-called omnichannel distribution channels are currently gaining the most popularity among retailers (Hickman et al., 2020). Omnichannel is a combination of the previous supply chain models: multichannel and crosschannel, i.e. blurring the boundaries between sales channels. In addition to the need to move goods from manufacturers to retailers, there is an increasing need to move them from retailers to final consumers. Undoubtedly, these practices positively influence the degree of competitiveness of modern markets. This process sometimes prompts assessments that markets are now hyper-competitive (Obłój, 2005), which influences the

intensity of the search for sources of sustaining and increasing competitiveness by managers of manufacturing enterprises.

In Poland, demand for consumer goods is regionally differentiated. The main factors creating it are the size of the population and its wealth. Cultural factors do not significantly influence the content of the shopping basket, as Poland is a relatively homogenous country from this point of view. Empirical studies show that the geographic variation in Poles' wealth creates centres of higher consumption. As in the case of production areas, the general conclusion concerning consumption centres is that large cities and the metropolitan areas surrounding them are the centres of this concentration. Areas of the so-called eastern wall are positioned below the average (Domański, 2018; Laskowska & Darska-Borsiak, 2018).

In view of the above, this study poses the following research questions:

- What is the geography of the centres of production of consumer goods in Poland?
- What is the geography of the centres of consumption of these goods in Poland?
- What is the geography of the transport corridors used to move these goods and the location pattern of the logistics hubs serving this movement?

Finding answers to these questions is the research objective. Establishing the regularity of the flow of goods, will allow to build of a spatial model of consumer goods logistics in Poland. The realisation of the objectives will be achieved by using methods such as literature studies (*desk research*, *web research*), statistical data analysis, cartographic methods and deductive logical reasoning.

The study uses quantitative data mainly from the GUS's system of public statistics—the Local Data Bank—supplemented by data and information from other sources. Primarily data from logistics real estate consultancies were used: Newmark, Cushman & Wakefield, Colliers International and Jones Lang Lasalle. The data obtained can be considered complete and allowing to draw reliable inferences.

All analysed locations are treated as urban complexes—large agglomerations or the Silesian and Tricity (Trójmiasto) conurbations. From the statistical point of view, they are made up of cities with their surrounding counties. Simplifying and due to the availability of data, the study refers to them as NUTS3 sub-regions (as at 1.01.2018). Average monthly household expenditure, as a measure of wealth, was collected on regional basis (NUTS2) and converted to the number of inhabitants of the NUTS3 territorial units analysed. The temporal scope of the study is determined by the availability of the most recent data possible. Data from the years: 2020 to indicate GDP and average expenditure per person; 2021 for the number and size of logistical facilities.

The study consists of several parts. The first is the diagnosis of the concentration of production centres of consumer goods and of the demand for them in

Poland. Against this background, we aim at the identification of the main transport corridors taking into account the dominant modes of transport and then identification of key logistic hubs with expediting, absorbing and intermediary functions<sup>1</sup>. The last part contains the conclusions and final findings.

## **6.1. Diagnosis of the concentration of production and purchasing centres for consumer goods**

The geographical diversity of production centres in Poland will be considered first. Naturally, the most synthetic possible measure of this production will be used for this purpose. It is the achieved level of gross domestic product (GDP). According to the Central Statistical Office (GUS, 2022), one of the definitions of GDP—formulated from the production side—indicates that it is the sum of gross value added of individual institutional sectors or individual branches increased by taxes on products and decreased by subsidies on products. Put differently, GDP is “the total monetary value of what has been produced (...) over a specified period of time. GDP is measured by the value added of output, i.e. its value less intermediate inputs used” (Chang, 2015, p. 180).

According to the latest data on the development of GDP in Poland by region, only four voivodeships: Lower Silesia, Warsaw (the Capital Region), Wielkopolskie and Silesia have achieved GDP above the national average. More than 90% of the national average was produced in Łódzkie, Małopolskie and Pomoranie. In total, these seven regions produced 67.9% of the value added, or more than 2/3 of the GDP of the Polish economy in general. It can therefore be assumed that these seven regions are the main production areas in Poland and that key expediting hubs to other regions and abroad should be located in these areas.

Even greater economic inequalities and concentration of production can be observed looking deeper into the relationship between a province and its main city. The best developed regions are those with the greatest socio-economic potential concentrated in their main centers, i.e. in agglomerations: Warsaw, Poznań, Wrocław, Cracow, Łódź, the Tricity and the Silesian conurbation. These seven centres alone account for more than 50% of Poland’s GDP. These centres are the main poles of national and regional growth (Table 6.1).

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<sup>1</sup> A logistics dispatch hub is a link in the supply chain responsible for the dispatch of goods. An absorption hub is a link in the supply chain responsible for the final distribution of goods to retail units or directly to final consumers. An intermediary hub is a link in the supply chain responsible for the consolidation transshipment of goods.

**Table 6.1. Gross domestic production by region in Poland in 2020**

Voivodeships	Total			Per capita	
	PLN million	in percent- age terms	previous year = 100	in PLN	Poland = 100
Poland	2 337 672	100.0	102.1	61 231	100.0
Lower Silesia	195 646	8.4	103.5	67 104	109.6
Kujawsko-pomorskie	102 446	4.4	104.1	50 246	82.1
Lubelskie	87 493	3.7	101.5	42 370	69.2
Lubuskie	50 026	2.1	102.1	50 209	82.0
Łódzkie	144 450	6.2	104.6	59 529	97.2
Małopolskie	189 463	8.1	102.3	55 138	90.0
Mazovia Region	121 968	5.2	101.0	53 288	87.0
Opolskie	46 872	2.0	101.0	48 834	79.8
Podkarpackie	89 287	3.8	99.8	42 501	69.4
Podlaskie	52 595	2.2	103.5	45 345	74.1
Pomeranian	136 028	5.8	100.3	57 680	94.2
Silesia	272 936	11.7	98.7	61 641	100.7
Świętokrzyskie	53 970	2.3	102.3	44 789	73.1
Warmińsko-mazurskie	60 675	2.6	104.3	43 662	71.3
Warsaw Capital Region	414 048	17.7	103.1	128 118	209.2
Wielkopolskie	233 474	10.0	103.1	66 499	108.6
Zachodniopomorskie	86 294	3.7	102.5	51 790	84.6

Source: (GUS, 2022).

In turn, the main centres of consumption can be identified as the regions generating the highest demand. If household expenditure per capita is taken as a synthetic indicator, it developed as in Table 6.2.

As can be seen in Table 6.2, expenditure above the national average is realised in seven regions, i.e. Warsaw (capital region), Lower Silesian, Pomeranian, Łódź, Opole, Silesian and West Pomeranian.

However a different picture emerges, when we take into account the overall share of households in expenditure calculated in each metropolitan centre. The

**Table 6.2. Value of average monthly expenditure per person in households in relation to the national average in 2020**

Voivodeships	Value in PLN	Value in %
Poland	1 210.00	100.0
Lower Silesia	1 355.29	112.0
Kujawsko-pomorskie	1 168.59	96.6
Lubelskie	1 132.57	93.6
Lubuskie	1 157.30	95.7
Łódzkie	1 225.52	101.3
Małopolskie	1 041.52	86.1
Mazovia Region	1 066.65	88.2
Opolskie	1 287.33	106.4
Podkarpackie	930.94	77.0
Podlaskie	1 020.37	84.4
Pomeranian	1 328.72	109.8
Silesia	1 270.85	105.1
Świętokrzyskie	994.00	82.2
Warmińsko-mazurskie	1 073.42	88.7
Warsaw Capital Region	1703.86	140.9
Wielkopolskie	1 123.35	92.9
Zachodniopomorskie	1 242.53	102.7

Source: (GUS, 2022; Local Data Bank).

two largest consumption centres in Poland are the Silesia and Warsaw regions (including the capital). Their share of total expenditure is 12.7% and 12.0% respectively. This is a result of the highest population concentration (total population of nearly 7,650 million) and above-average spending resulting from the higher affluence of these citizens. The combined share of the other five urban agglomerations (Poznań, Cracow, Wrocław, Łódź and the Tricity) is slightly above 17%. This means that the share in household expenditure of the seven largest urbanised areas in Poland is 41.8%. This is significantly less than the total share in GDP generation (50.8%) (Table 6.3).

**Table 6.3. Household expenditure and GDP in Poland in 2020; selected areas (share in %)**

Agglomerations/conurbations (NUTS3)	Share of household expenditure in total expenditure in Poland	Share in Poland's GDP
Silesia	12.7	11.7
Warsaw Capital Region	12.0	17.7
Tricity	4.0	3.9
Wrocław	3.8	4.6
Cracow	3.5	4.8
Poznań	3.0	4.9
Łódź	2.8	3.1
Lubuskie Region	2.5	2.1
Szczecin	2.4	2.3
Bydgoszcz-Toruń	2.0	2.1
Lublin	1.7	1.7
Olsztyn	1.7	1.2
Kielce District	1.6	1.5
Rzeszów	1.3	1.4
Białystok	1.1	1.1
Opole District	0.7	1.4
Total:	57.0%	65.6%

Source: based on (GUS, 2022; Local Data Bank).

The branch structure of transport in Poland in 2020 is illustrated in Table 6.4. Data in Table 6.4 clearly show that road transport is dominant in Poland. Its implementation requires a developed logistics infrastructure, both linear and point-to-point. The state of this infrastructure in September 2022 is illustrated in Figure 6.1.

The green colour indicates existing automotive transport corridors – dark green are roads that have been completely built and light green are roads that have not yet been completed. When confronted with the expected freight flows resulting from the spatial gap between production and consumption centres, a kind of infrastructural white spot can be identified in Wielkopolska at the interface between this voivodship and the Pomeranian voivodship and towards the Silesian voivodship.

**Table 6.4. Transport work by mode in Poland in 2020  
(in million tonne-kilometres)**

Specification	Value in PLN	Share in %
Total	540 515	100.0
Rail transport	51 096	9.5
Road transport	461 582	85.4
Pipeline transport	20 435	3.8
Maritime transport	6 658	1.2
Inland waterway transport	517	0.1
Air transport	227	0.0

Source: (GUS, 2022).



**Figure 6.1. Current and target state of the main motorway network in Poland (in September 2022)**

Explanation: red line – under construction, green line – existing, pink line – projected.

Source: (Wikipedia, n.d.).



The activities of production centres are strongly linked to warehouse management in the broadest sense. On the one hand, the concept of warehouse management refers to the construction of functional storage facilities, equipped with the necessary machinery and equipment and in accordance with accepted standards. This activity thus forms the stock of the warehousing market, also referred to as warehousing. On the other hand, the concept of warehousing management includes a number of mainly operational, technical, economic and organisational issues implemented on an enterprise scale. In this sense, warehouse space is used for the temporary storage of material goods, necessary for all phases of the economic process carried out in the enterprise: procurement, production, distribution and sales (Rożej et al., 2014, p. 70), but also for the implementation of such logistical processes as ordering, receipt/release of inventory, packaging, parcel sorting, completion and intermodal handling, forwarding, administrative processes. Warehouses are thus an essential link in the chain and in the supply network, and the functions performed by warehouse facilities influence the technologies and organisation of work used in them as well as their locations (Majchrzak-Lepczyk & Maryniak, 2020; Szymonik & Chudzik, 2018).

In warehousing and logistics companies, transport accessibility is the most typical location factor. Transport should even be considered prior over other factors. However, the fact that the entire logistics chain is important for manufacturing companies must also be taken into account. Often logistics and manufacturing companies operate in close proximity, forming clusters. Hence, typical location factors for most companies in the logistics sector are, in addition to transport, the proximity and size of the sales market, as well as stocks and labour costs.

The analysis of supply chain operating costs allows to conclude that transport is the largest component of logistics costs (about 50%). It is understood as the sum of all expenses incurred to make a good or service available on the market, mainly to the final consumer. The share of other cost factors is much lower and is as follows: 22%: *inventory carrying costs*, including the maintenance of goods in inventory (e.g., capital costs, storage, depreciation, insurance); 10%: *labour costs*, including the physical handling of goods, packaging and labelling, etc.; 8%: customer service, includes the receipt and delivery of goods and services. 8%: customer service, which includes taking and processing customer orders; 4%: rent, which is determined by the location and type of warehouse, but is also a function of supply and demand in the warehouse market as well as land price and construction costs (Exchange, n.d.).

Such a high share of transport costs in total costs means that, despite the significant reduction in transport costs, the role of transport as a location factor is even determinant with regard to the logistics industry. Transport costs depend on

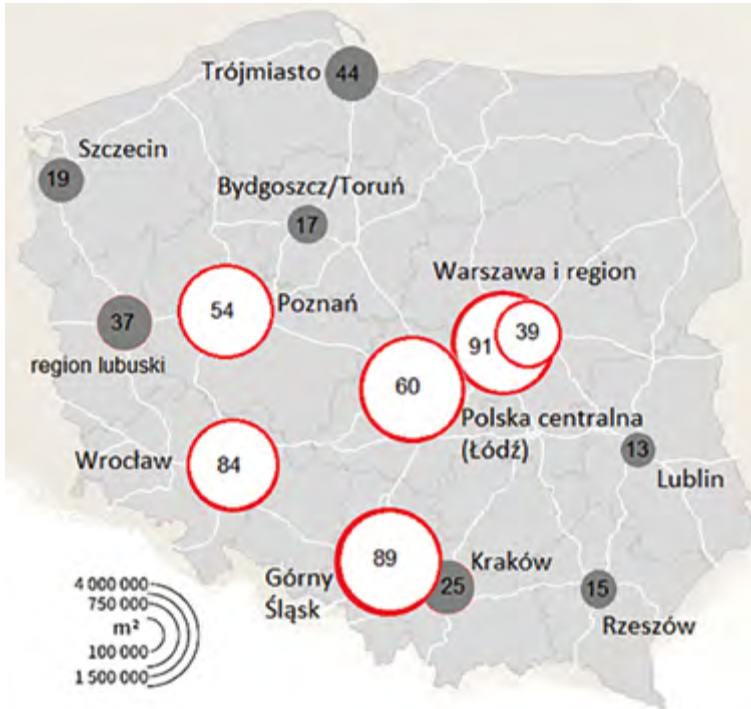
the length of transport routes, which determines the location of warehouses. Their location, as transport hubs in relation to production and distribution sites, aims to increase the utility of time and space in the supply of products. The increase in utility is mainly influenced by the (previously mentioned) costs of transport, storage, labour and service levels.

The warehouse market in Poland has been developing very dynamically since the beginning of the 21st century, especially since 2004, the year of Poland's accession to the European Union (Budner, 2020). The most noticeable and unprecedented growth in the dynamics of warehouse facilities and space has been recorded since 2017. The development dynamics of the warehouse market in Poland is not inferior to, and even exceeds, that of e-commerce. The high demand for warehouse space is due to both the need to diversify the logistics network adapted to the needs of the e-commerce market and the congestion still evident in global supply chains, which is prompting many companies to increase their inventory levels (Cushman & Wakefield, 2022, p.11). Demand for different types of warehouses is reported by companies in the following sectors: retail and e-commerce (distribution and returns centres, urban warehouses), logistics and courier (courier hubs), manufacturing and automotive (large distribution centres).

Without going into detail about the range of functions of individual logistics facilities, it is important to note certain regularities related to their location. These facilities rarely operate in isolation. They often operate in close proximity, in groups referred to as parks. At the end of 2019 there were 386 such parks offering commercial warehouse space. They were created and successively developed by developers (Cresa, 2019). Their number is steadily increasing reaching 615 in 2021. (Cushman & Wakefield, 2022).

Although Poland's settlement structure is characterised by a polycentric moderate concentration, the demand for warehouse space is highly concentrated. The analysis of the distribution of warehouse and industrial parks shows that as much as 75% of them (i.e. 461) are located in five main locations. These are: Warsaw and the region (39 and 91), the Silesian conurbation (89), the Wrocław agglomeration (84), Łódź (60) and Poznań (54). These five locations are complemented by several emerging markets: Tricity, the Lubuskie Region concentrated mainly along the S3 route, the Cracow and Szczecin agglomerations (Figure 6.2).

The layout of the distribution of warehousing facilities in the dominant Big 5 corresponds to the concentration of warehouse space. The scale of the concentration of space is even higher in this case—slightly over 80%. A common feature of all areas with a high concentration of warehousing space is the considerable potential demand for warehousing services. For this reason, the most favourable locations for this type of facility are usually large urban agglomerations, where economic services justify the operation of large warehouses.



**Figure 6.2. The most important warehouse markets in Poland (2021)**

Notes: light circles: major warehouse markets (the so-called 'big five'); dark circles: emerging warehouse markets; the numbers in the circles indicate the number of warehouse parks.

Source: based on (Cushman & Wakefield, 2022).

The COVID-19 pandemic revealed the dangers of long-term global expansion and excessive concentration of production in just one country. The dependence of the global economy (partly also of Poland) on the situation in China has triggered a reflection on the security of countries,<sup>2</sup> as it may lead to decrease in the resilience of the economy. As a consequence, in the long term there may be a tendency to move production to new, closer locations. This is in line with a shift in the supply chain strategy of some companies moving their operations back to their home country (*backshoring, reshoring*) or locating their new manufacturing investment there (*onshoring*). In 2022, the latest term *friendshoring*, a variant of

<sup>2</sup> A similar reflection was triggered by Russia's invasion of Ukraine in 2022, which, together with sanctions on Russia, caused a collapse of the fuel market (oil, gas and coal) in the European Union and the rest of Europe.

offshore outsourcing involving locating orders in politically friendly countries with low economic risk, emerged.<sup>3</sup> Such moves will primarily aim to minimise liquidity risks in supply chains by shortening them. The expansion of manufacturers through supplier networks and the consumer market will further increased demand for logistics real estate.

## 6.2. Regional dynamics influenced by the demands and constraints of logistics geography

Although the development gap between Poland and the EU average is systematically decreasing, the internal differentiation in Poland is becoming more and more noticeable (a process of regional divergence is clearly emerging). This state is sustained by regional economic system that is characterised by a high degree of permanence (this is due to its structural nature). In Poland, there is a significant and increasing divergence of socio-economic development (measured by GDP/inhabitant on a regional [NUTS2] and sub-regional [NUTS3] scale), and what is related to this, a divergence of wealth. The regional spread of GDP per capita (in 2019) is as high as 209.2 in the Warsaw Capital Region to 69.2 in the Lublin Region, i.e. 140 pp. In comparison, this ratio in 2007 was as: 160.1 to 67.5 respectively, i.e. 92.6 pp. In the case of sub-regional units [NUTS3], the scale of differences is even greater and amounts to 284.0 to 51.7, i.e. as much as 232.3 pp. (Table 6.5).

**Table 6.5. The scale of regional disparities in Poland [GDP per capita, Poland = 100]**

Statistical units	Year	Minimum	Maximum	Difference pp
NUTS 2	2007	67,5	160,1	92,6
NUTS 2	2019	69,2	209,2	140,0
NUTS 3	2019	51,7	284,0	232,3

Source: (GUS, 2022; Local Data Bank).

Wealth differentials are accompanied by different levels of wealth consumption (measured by household expenditure per person). The expenditure spread on a regional scale is not as significant as in the case of differences in GDP. In 2020, it amounted to PLN 772.92, or 83 pp.

<sup>3</sup> The term was introduced by Janet Yellen in April 2022 (Kollewe, 2022).

In the existing spatial economic and productive system, the main role is played by 7 agglomerations (metropolitan centres): Warsaw, the Silesian conurbation, Poznań, Wrocław, Cracow, the Tricity and Łódź, concentrating 51% of the Polish GDP share. The key importance should be attributed to the capital region of Warsaw and the Silesian conurbations (together almost 30% of GDP). The centres and areas (regions) of eastern Poland have by far the smallest share. All (16) metropolitan centres distinguished in the analysis jointly produce nearly 2/3 of GDP (65.6%).

The existing spatial economic and demographic pattern influenced the formation of consumption centres. The share of the designated 16 metropolitan centres in household expenditure was 57.0%, correspondingly less than GDP (65.6%). What is more, the share of the seven key economic areas in expenditure is correspondingly even lower (41.8%) than GDP (50.8%). This demonstrates, on the one hand, the greater affluence of metropolitan residents and, on the other hand, the fairly even satisfaction of consumption needs across the country.

The share of the value of goods and services produced in each centre is mostly similar to the share of consumer spending. A significant discrepancy was recorded in the Warsaw Capital Region (share ratio: 17.7 / 12.0); the Poznań subregion (4.9 / 3.0) and the Cracow subregion (4.8 / 3.5). This may indicate a strongly export-oriented production in these areas.

Poland's dynamic GDP growth (up to 2021) is encouraging the growth of even more dynamic warehouse space resources. They constitute logistics hubs serving the distribution of goods. Their location pattern largely corresponds to the distribution of the main production centres. These are therefore (in descending order of share): Warsaw and its region (21.6%), the Silesian conurbation (18.2%), Central Poland–Łódź (15.8%), the Wrocław agglomeration (14.3%) and Poznań (11.0%). These five locations (referred to in the language of the industry as the «big five») account for approximately 80% of the total stock of modern warehouse space in Poland. They are supplemented by emerging markets: the Tricity, Szczecin, the Bydgoszcz–Toruń duopoly and the Lubuskie region.

The factors determining the location of major hubs are primarily: geographical location near the urban agglomeration, transport accessibility, which is determined by the transport infrastructure (road and rail, but also proximity to airports and seaports) and the absorptive capacity of the local market in terms of the services offered. These factors prove to be the key role of the opportunities created by operating in the vicinity of an urban agglomeration. The attractiveness of the infrastructure, the large and absorbent market and the services offered attract new investment, thus acting as an investment multiplier in the area. The creation of a logistics property such as a warehouse/logistics park is usually associated with the city's investment in transport infrastructure (e.g., expansion or reconstruction

of roads, construction of ring roads, expressways, bridges, tunnels). In addition, logistics parks, as new forms of urban development, themselves increase the investment attractiveness of the area, strengthen its competitiveness and improve the image and logistic efficiency of the region.

## Conclusions

Key factors for building competitiveness are usually derived from economies of scale and agglomeration effects. The importance of economies of scale was raised as early as the 1960s by the Boston Consulting Group (Stern & Deimler, 2012). The essence is that any economic activity results in both variable costs and fixed costs. An increase in scale of operation does not affect unit variable costs, but it does affect unit fixed costs. The latter decrease in proportion to the increase in the volume of production (the numerator remains constant and the denominator increases, i.e. the value of the fraction decreases). As a result, lowering the unit cost makes it possible to reduce the unit price of the good and thus make it more competitively attractive in the eyes of final buyers. The winners are therefore those producers who are able to rapidly increase the scale of their business. This means that a process of production concentration is set in motion, i.e. there emerge relatively few production centres which are locationally (geographically) concentrated and supply vast market areas.

The agglomeration effect, is mainly based on appearance of the benefits of geographically concentrated and highly skilled labour resources (Budner, 2022, p. 11). These aspects were already pointed out by the precursor of industrial location theory, A. Weber (1909). These ideas were later developed by, among others: Lösch (1940), Hoover (1948), Isard (1956). Agglomeration advantages and the existence of a large producer induce the location of other enterprises oriented towards cooperation with this producer nearby. In this way, a so-called business cluster is formed, which becomes an autonomous driver of regional development in both the economic and socio-cultural system (Budner, 2022, pp. 35–38). Thus, over time, relatively geographically compact production centres develop, which, with their large production capacities, supply goods to area-wide markets. These are usually large urban centres together with metropolitan areas. As a measure of the potential of these centres, the value of GDP can be taken as the main macroeconomic aggregate and the main measure in the system of national accounts depicting the final result of the activities of all entities in the national economy. This text points to the changes taking place in the Polish economy and highlights further potential developments in this area.

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