Regional and Local Studies
special issue 2010
ISSN 1509-4995

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Structural, Spatial and Functional Changes in the Development of Enterprise Following Poland's Accession to the European Union

The article provides a comparison of the dynamic increase in the number of enterprises relative to the working-age population in the private sector in the years 2001–2004 (the immediate pre-accession period) and 2004–2007 (the immediate post-accession period). The study was conducted with regard to the main sectors of economic activity (agriculture, industry, lower-order services and higher-order services), as well as the functional diversity of municipalities, or *gminas* (urban and suburban categories, transportation corridors, tourism, etc., for a total of 16 categories). The study indicates a decline, inertia, spatial polarisation and tessellated spatial structure of the development dynamic of private enterprises.

Introduction. Issues covered, goals and assumptions

Poland's accession to the EU structures brought about a transformation in the organisation of socio-economic life, which resulted in changes of the spatial structures. It is particularly interesting to see whether the formal moment of accession proved to be a clear landmark in these processes. It is believed that far-reaching legislative changes associated with the dismantling of many barriers and the introduction of new regulations lead to disparities in the development and intensity of various types of human activity. However, the formal act of accession is of significance not for political or socio-economic reasons alone. Cultural and psychological factors, not easily measurable, also matter as they determine the attitudes of different categories of citizens to the transition in progress, decision making patterns, elections, etc.

This paper focuses on changes caused by the increasing number of enterprises, a choice which was made owing to the role that this factor plays in the development of the national economy. At the same time, fluctuations in the number of emerging business entities can serve as a good indicator of the overall socio-economic situation.

Post 1990, enterprise development in the context of regional development has been discussed in Poland in a number of studies (Dolata 2004; Kamińska 2006; Kłodziński, Fedyszak-Radziejowska 2002; Pałka 2004; Śleszyński 2005, 2006; Zioło, Rachwał 2006, 2008). Divided by their impact zone, the most frequently

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listed factors which have a bearing on the development of small enterprises (micro-enterprises) are the following (Kamińska 2006):

a) International, e.g. geographical location, opening of the borders and customs regulations;
b) National, e.g. economic stability, legislation;
c) Regional, e.g. location vis-à-vis rapidly developing domestic centres;
d) Local, e.g. demographic potential and market absorption, entrepreneurship traditions, local government's supportive actions.

An increase in the number of business entities in a given territory may be analysed within three basic thematic and problem areas relating to:

1) Enterprise development. It is usually believed that setting up a business reflects such factors as: the natural or forced propensity to undertake economic initiatives, economic risk, market attitudes, individual and social resourcefulness, etc. In other words, increasing or decreasing numbers of companies in a given area serve as an indirect indication of either growing or shrinking innovation, and expansiveness and flexibility of those areas in market terms;

2) Economic urbanisation. An increasing number of businesses in a given area can be seen to reflect employment outside agriculture. Therefore, conclusions can be drawn on this basis about the pace of transformation in rural areas, leading to the change of their role in the socio-economic system, particularly in the context of multi-functional development. This is of significance mainly for studies conducted in Poland, since neither statistical offices in the regions nor the central statistical office (GUS) have been able to provide reliable data on the number of employees in smaller spatial units, i.e. municipalities (*gminas*) and districts (*poviats*). Of necessity, therefore, the figures showing the number of businesses (both larger enterprises and sole entrepreneurs), must be directly used in studies on economic urbanisation;

3) Changes in the socio-economic system and its territorial organisation in different spatial scales. The majority of businesses are small and usually very mobile in terms of socio-economic stratification. This makes it possible to record changes in the socio-spatial and economic-spatial structures in different configurations and their mutual interactions, and such entities are relatively reliable indicators of the transition in progress. The main goal of this study is to analyse the pace at which the number and structure of enterprises are changing in areas with dissimilar functional characteristics, and thereby to gain knowledge about the ongoing changes in the context of the aforementioned problem areas. This also helps identify processes of concentration and deconcentration of economic functions depending on the administrative and settlement hierarchy, as well as location vis-à-vis basic development zones or other structural and functional units which are defined in terms of specific features of the intensity of spatial development. Furthermore, analyses help to find the answer to the question whether, in the socio-economic space, some economic functions are concentrated (or deconcentrated) in comparison with other functions. In this

context, research not only has a cognitive role but can also be directly translated into practical applications.

The paper comes as a follow-up to the studies which were initially carried out for typically farming gminas, for a similar period of time and topical scope, and using similar methodologies and source data (Śleszyński 2009a).

Methodological issues

For attaining the goals set, delimitation of entities for further analysis is of crucial importance. Owing to the functional nature of the socio-economic space, it is not practical to analyse changes broken down into types of areas such as administrative categories. Instead, we used a delimitation that had been done earlier, for the purposes of a study on spatial planning developments at the local level, published by T. Komornicki and P. Śleszyński (2008). It identified 16 categories of municipalities, of which some were associated with urban centres and their suburban zones; municipalities with industrial, tourist, communication (two categories – those under intensive and extensive development), rural, ecological, and rural-ecological functions, as well as a separate category of municipalities without any specific functional specialisation. These categories of municipalities were used for comparisons.

This study uses the data on the number and structure of business entities accumulated in the Regional Data Bank of the Central Statistical Office, or GUS (the KRUPGN-REGON register). Even though the statistical services make efforts to verify these data, they are fraught with serious errors. This is because many of the entities in fact do not conduct any activity, which the register fails to report[1]. However, this is not of much relevance for our analysis because we investigated the differences in the number and density of enterprises, as a result of which increases of the indicator of inactive entities were largely offset.

From the analysis, we excluded entities registered in the public sector. In 2007, the share of such entities in Poland was 3.8%. They were mostly located in larger cities. In this study, we used two time intervals: pre-accession (2001–2004) and post-accession (2004–2007). We chose three-year periods for reasons of data comparability. The data on the number of enterprises were related to the number of the working-age population as this comparison more fittingly encapsulates the essence of enterprise and, in general terms, the relationships between enterprises and the socio-economic system than it is the case with the total number of the population. The three following synthetic indicators were used:

1) Index of changes in the density of business entities in 2001–2004:

[1] E. Nowosielska (2000) assessed this percentage as 20–30%, and P. Śleszyński (2007) as 20%. For this reason, data from tax offices, generally inaccessible to researchers, are much more reliable. One exception is provided in W. Kamińska's works, which offer the most realistic picture of businesses operating in Poland (see especially Kamińska 2006).

$$A = (\frac{N_{2004}}{Lp_{2004}} - \frac{N_{2001}}{Lp_{2001}}) \times 1000$$

2) Index of changes in the density of business entities in 2004–2007:

$$B = (\frac{N_{2007}}{Lp_{2007}} - \frac{N_{2004}}{Lp_{2004}}) \times 1000$$

3) Index of changes in the dynamic of the density of business entities in 2004–2007:

$$C = \frac{B}{A}$$

where: N – number of private sector businesses in a given municipality at the end of a given year; Lp – number of working-age population in a given municipality at the end of a given year; for all municipalities, formulas 1 and 2 are generalised (subscripts in the annotations Rmax and Rmin denote the beginning and end of a given period):

$$A \vee B = \sum_{j=1}^{n=2478} (\frac{N_j^{R\max}}{Lp_j^{R\max}} - \frac{N_j^{R\min}}{Lp_j^{R\min}}) \times 1000$$

In this study, we adopted the following values of indicators showing the density of businesses per 1000 working-age population: low – under 50, average – 50–70, high – over 70, in all of these cases the median was similar and reached: M_{2001} = 61.6; M_{2004} = 62.8; M_{2007} = 63.9. On the other hand, the values of the indicators for the dynamic of the density of enterprises were the following: decrease – under 95, stagnation – 95–105, increase – over 105, with the initial value for the period = 100.

In comparative analyses, we used the division into four basic sectors of activity: agricultural, industrial, as well as lower-order and higher-order services, which is explained in detail in Table 1. We did not focus our analysis on the farming sector because it was done elsewhere (Śleszyński 2009a) and, secondly, this is not a numerous group of enterprises (less than 3% of all businesses).

It should be noted that owing to the construction of the Polish Classification of Activities (*Polska Klasyfikacja Działalności*, or PKD), its division into sectors is in some cases only tentative. Firstly, some of the small business entities registered in Section D (industrial processing) in fact provide services, e.g. in the form of various equipment repairs. Secondly, in the case of two sections, the PKD classification does not reflect the degree of the activity's sophistication. Section D has division 22 comprising publishing houses, whereas Section O includes divisions with simple personal services (beauty treatments, laundering),

alongside higher-order services (entertainment, culture, associations and professional organisations)[2].

Finally, to complete the recapitulation of the methodology, we would like to discuss the measures used and the measurement methods. The density of business entities is best defined as the ratio of their number and the number of households, as this accurately reflects the level of entrepreneurship. This, however, was not possible in our analysis, which was partly offset by using the number of the working-age population. There is a widely supported view that farms, especially market-oriented ones, operate as small enterprises, and therefore the number of such farms should be included in enterprise indicators, by the same token as 'normal' business entities.

Furthermore, due to tax considerations and in order to obviate the need to observe labour code regulations, self-employment is quite popular in Poland. In order to restrict the (pathological) scale of pseudo-self-employment, on 1 January 2007 the personal income tax legislation was amended. Consequently, the definition of business activity does not apply to persons who fulfil the following concurrent conditions (1) working under supervision, at a place and time as instructed by the orderer, (2) not incurring economic risk associated with their activity, and (3) performing tasks commissioned by the entity which is liable to third parties for the results of such activities and their delivery (excluding liability for tort). According to different estimates (National Labour Inspectorate, or PIP, trade unions), about 1 million people in Poland could work under the fictitious self-employment scheme. For obvious reasons, these estimations are called to question by employers' organisations.

Aggregate results for sectors

In the period 2001–2007, the number of registered business entities increased from 3.2 to 3.5 million, and these values, referred to the number of working-age population, were, respectively, 134.4 and 144.5 per 1000 of this population (Table 1). Both of the periods under comparison reported uneven growth. In 2001–2004, the rate of dynamic reached 105.7 (A), and in 2004–2007 – 101.7 (B). Overall, in 2004 the trend changed from falling to slightly increasing (Fig. 1). The existing division into sectors of activity revealed more disparities: the rate at which the number of enterprises operating in the service sector decreased came to a standstill and there was an increase in the number of enterprises in industry and agriculture. At the same time, the pace of changes grew weaker in the category of sole entrepreneurs. This alone exemplifies the existence of differences as regards the rate of increase in the number of enterprises, meaning that further, more detailed analyses, are necessary.

[2] In addition, new letter symbols were inttroduced into the PKD as of 1 January 2008. The previous nomenclature was used in 2004–2007.

Table 1. Changes in the entrepreneurship index in Poland in 2001–2007

Category	Value per 1000 working-age population			Index change initial period = 100)		$C = \frac{B}{A}$
	2001	2004	2007	A (2001–2004)	B (2004–2007)	
Business entities In private sector total	134.4	142.0	144.5	105.7	101.7	0.96
Including the following sectors*:						
– agricultural	3.5	3.5	3.8	100.3	108.5	1.08
– industrial (with construction)	30.2	30.3	31.4	100.2	103.6	1.03
– lower-order services	70.4	73.6	72.4	104.6	98.3	0.94
– higher-order services	30.2	34.6	36.9	114.3	106.7	0.93
Sole entrepreneurs	108.7	114.0	113.6	104.9	99.6	0.95

* Agricultural sector – Sections A (agriculture) and B (forestry, hunting, fishing, fishery); industrial sector – Sections C (mining), D (industrial processing), E (electrical power engineering, gas and water provision) and F (construction); lower-order services sector – Sections G (trade and repairs), H (hotels and restaurants), I (transport) and O (personal services); higher-order services sector – Sections J (financial intermediation), K (business and professional services), L (public administration – excluded due to lack of such entities outside the public sector), M (education), N (health care and social welfare) – with the reservations described above.

Source: based on GUS data.

The changes in the density and dynamic of enterprises in different municipalities are presented in Figure 2 and 3, using the well-known methodology which shows the initial value of the index and its later changes. Three levels of density of enterprises relative to the population were distinguished: low, medium and high, along with three types of dynamics: increase, stagnation and decrease. The typological map built on the basis of the initial values and changes in time shows a considerable spatial mosaic, which nevertheless makes it possible to identify basic regularities. What is striking above all is the considerable similarity of the spatial structures in both maps. Additional calculations indicate that in as many as 815 municipalities (out of 2478 in total), the type observed for the period of 2004–2007 was the same as in 2001–2004. This points out to significant spatial inertia concerning the increase in the number of enterprises across regions.

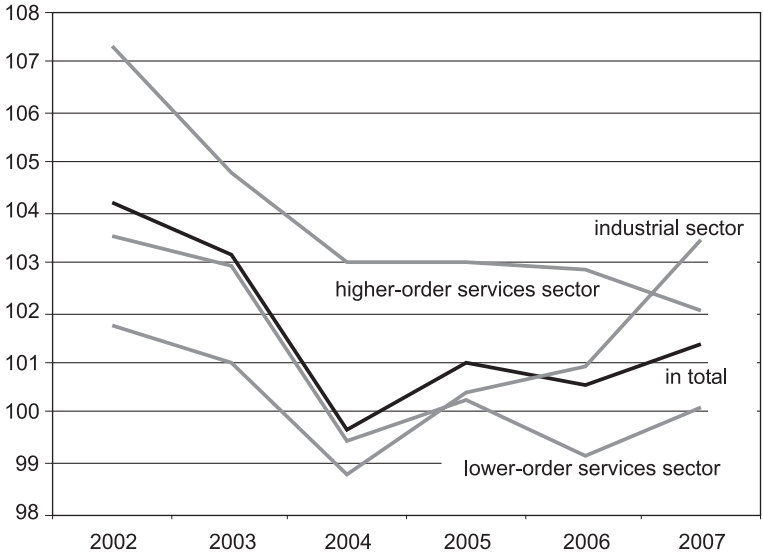

Figure 1. Dynamic of the number of business entities registered in the private sector by sectors of activity in 2002–2007. The previous year = 100

Source: based on GUS data.

Another visible regularity involves characteristic spatial systems, which are correlated with the initial values showing the density of enterprises and its later changes. At the one extreme, there are areas, as a rule the largest urban centres with their surroundings, where the initial values and their dynamics were among the country's highest (type CC, marked in brown), whereas at the other extreme we could see regions with the weakest development of enterprise and the weakest dynamic (type AA, marked in light green). However, municipalities of the latter category are rather small in numbers and, interestingly, most of them are situated in the east of Poland.

On the map, category AC is particularly well visible. It covers municipalities with low initial enterprise development and a high dynamic of growth. These are usually areas with a peripheral location vis-à-vis the largest cities. This applies especially to north-eastern Poland (north of Warmia, the areas on the border of Mazowsze, Podlasie and Mazury), as well as Roztocze. Interestingly, such areas with low development and high dynamic rates are also found at the borders of some voivodships (regions): between Łódzkie and Świętokrzyskie, Łódzkie and Kujawsko-Pomorskie, Świętokrzyskie and Małopolskie or Śląskie and Opolskie. This can mean that socio-economic development does not have to be obstructed by the long distance from the regional capitals and the failure in the dissemination pro-growth stimuli across longer distances. However, this can also be explained by the very low initial values of the entrepreneurship index and the resultant fast increase in the number of business entities and the reduction of disparities in business development.

As the next step to make the analyses more detailed, we compared the dynamics in municipalities from different functional categories (Table 2, Fig. 4). Generally, in the initial period (2001–2004), the number of registered businesses increased in all the categories, and almost consistently by more than 5%. The highest relative increase was reported in smaller cities situated along the major routes (A = 108.5), followed by suburban zones of the largest cities (A = 107.6), and cities with significant tourism functions (A = 107.5). At the same time, the lowest values could be observed particularly in the cores of medium-sized cities (A = 101.5) and agricultural municipalities, including those with valuable natural assets (in both cases A = 103.7).

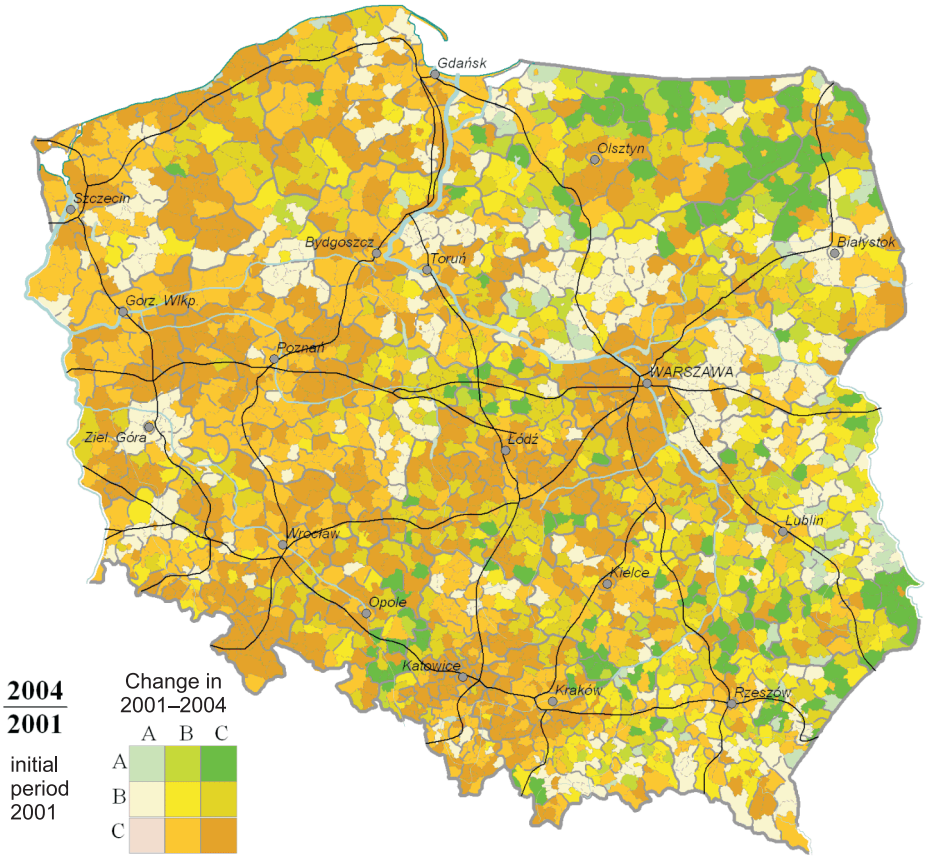

Figure 2. Dynamic of changes in the density of business entities registered in the private sector relative to the working-age population in 2001–2004.

Types (initial/change): A – low/decrease; B – medium/stagnation; C – high/increase.

Source: based on GUS data.

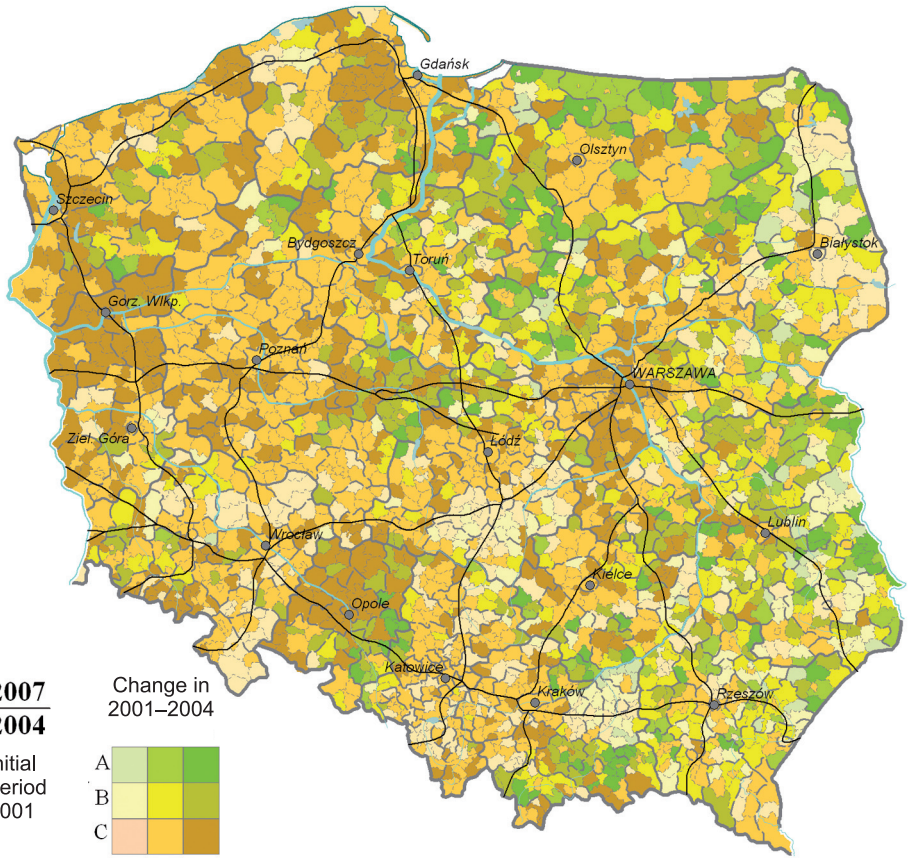

Figure 3. Dynamic of changes in the density of business entities registered in the private sector relative to the working-age population in 2004–2007.

Types marked as in Figure 2.

Source: based on GUS data.

In the post-accession period (2004–2007), the dynamic of the increase in the number of business entities became visibly weaker. However, there is an observable tendency for maintaining a relatively greater increase in the urbanised areas. The higher rate of growth was maintained mostly in the suburban zones of the largest cities (B = 104.3). Furthermore, a higher increase was reported in areas with valuable natural assets (B = 104.0) and with well-developed tourist and industrial functions (B = 103.8).

Table 2. Dynamic of the density of business entities registered in the private sector in Poland in 2001–2007

Category*	Value of index per 1,000 working-age population (Poland = 100)	Change of index (initial period = 100)		$C = \frac{B}{A}$
		A (2001–2004)	B (2004–2007)	
Total	100	105.7	101.7	0.96
DR	140	106.8	104.3	0.98
DP	112	107.6	102.5	0.95
GR	114	101.5	98.9	0.97
GP	80	103.7	101.8	0.98
M	98	106.8	101.6	0.95
MK	105	108.5	98.9	0.91
MT	116	107.5	102.0	0.95
K1	78	106.0	102.3	0.96
K2	62	106.3	102.9	0.97
P	68	104.7	101.9	0.97
TP	78	105.2	103.8	0.99
T	84	106.9	102.6	0.96
R	55	103.7	102.6	0.99
RE	54	103.7	102.4	0.99
E	63	106.2	104.0	0.98
I	64	105.4	104.8	0.99

* DR – cores of metropolitan areas (the so-called MEGAs); DP – external zones of metropolitan areas; GR – cores of other cities - district capitals; GP – external zones of other district capitals; M – district capitals without clear functional specialisation, usually with well-developed industrial functions, in some cases with nature and agricultural functions; MK – district capitals with well-developed transport function; MT – district capitals with well-developed tourist function; K1 – transport corridors under intensive use (industry, tourism); K2 – transport corridors under extensive use (incl. agriculture and nature protection); P – municipalities with well-developed industrial function, other than district capitals; T – municipalities with well-developed tourist function; TP – municipalities with well-developed industrial and tourist functions; R – municipalities with well-developed agricultural function; RE – municipalities with well-developed agricultural function incl. areas with valuable natural assets; E – municipalities with valuable natural assets; I – other municipalities.

Source: based on GUS data.

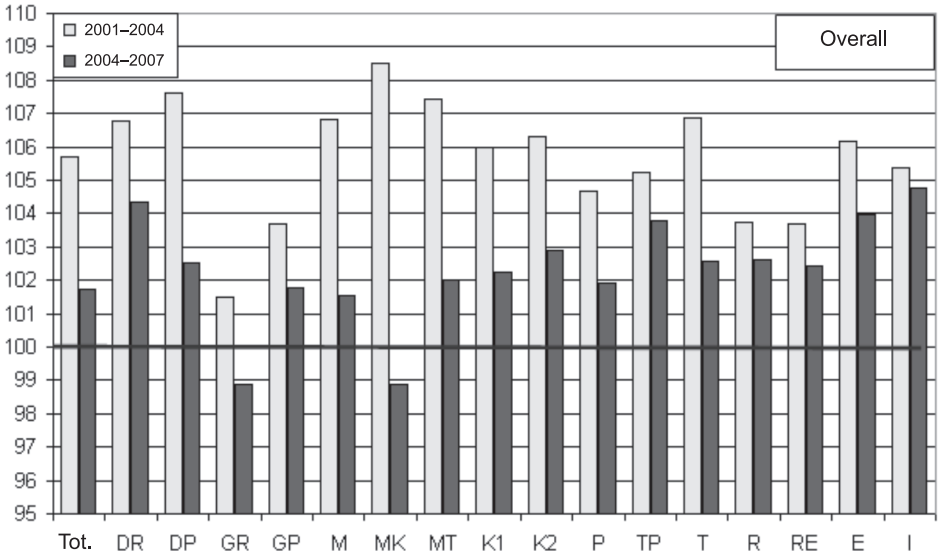

Figure 4. Changes in the dynamic of growth of business entities registered in the private sector by functional categories of municipalities in 2001–2007.

Legend: see Table 2.

Source: based on GUS data.

The industrial sector

As compared to other sectors of the economy, the industrial sector showed a distinct dynamic regarding the number of enterprises. Unlike the situation in the lower and higher-order services, the post-accession period saw a considerable increase in the number of registered businesses (Table 3, Fig. 5). Whilst in 2001–2004 the number of enterprises across the country increased at a very modest rate of 0.2% (A = 100.2), in the period that followed (2004–2007) this rate rose to 3.6% (A = 103.6), with significant disparities in individual functional categories.

The slowest growth dynamic, and in some cases, a decrease, could be observed in urban areas. Nevertheless, after the EU accession the number of businesses increased in nearly all of the 'urban' categories (save for the cores of medium-sized cities). Interestingly, the smaller the city, the more visible the increase was in most cases. However, the strongest positive changes of the dynamic could be observed in areas outside big cities. For municipalities with a well-developed tourist function, the rate of increase was 12.2% (B = 112.2), and in agricultural municipalities situated within transport corridors – 10.9% (B = 110.9). This is definitely a favourable phenomenon, as it evidences rapid development of small-scale production, fostered by the development of other types of activity and a favourable geographical location (such effects along Route E40 east of Kraków were earlier observed by Z. Zioło and S. Piróg 2000).

Since construction companies make up the bulk of the industrial sector (Section F), it may be assumed that a boom took place in this type of services. If this is not a consequence of self-employment (mentioned earlier), it was probably caused by the improving economic situation and investment activity. The sources of this growth can probably be sought not only in the various EU funds, but also in the transfer of money from Poles living abroad. On the other hand, other studies showed a short-term increase in the demand for arable land, fostered by the launch of EU funds, mainly direct payments to farmers (Komornicki, Śleszyński 2008).

No regularities were discovered which could be viewed as consequences of the changing dynamic concerning the number of enterprises between the pre- and post-accession periods. Tentatively, this could indicate growing differences beetween groups of municipalities. In this case, EU accession would be an important landmark in the development of the polarisation processes. With the average value of 1.03, index C oscillated between 0.99 (smaller cities situated in transport corridors) and 1.10 (tourist and agricultural municipalities with valuable natural assets).

Table 3. Dynamic of the density of business entities in the industrial sector in Poland in 2001–2007

Category	Value of index per 1000 working-age population (Poland = 100)	Index change (initial period = 100)		$C = \frac{B}{A}$
		A (2001–2004)	B (2004–2007)	
Total	100	100.2	103.6	1.03
DR	123	99.6	102.0	1.02
DP	133	100.9	102.2	1.01
GR	97	96.4	99.3	1.03
GP	95	99.1	103.6	1.05
M	94	101.9	105.6	1.04
MK	101	103.4	102.6	0.99
MT	104	102.1	105.9	1.04
K1	91	101.0	106.2	1.05
K2	71	102.9	110.9	1.08
P	88	100.1	106.4	1.06
TP	103	100.9	110.4	1.09
T	88	101.6	112.2	1.10
R	64	100.4	106.7	1.06
RE	70	99.1	109.0	1.10
E	76	101.0	110.4	1.09
I	78	101.0	114.7	1.14

Legend: see Table 2.

Source: based on GUS data.

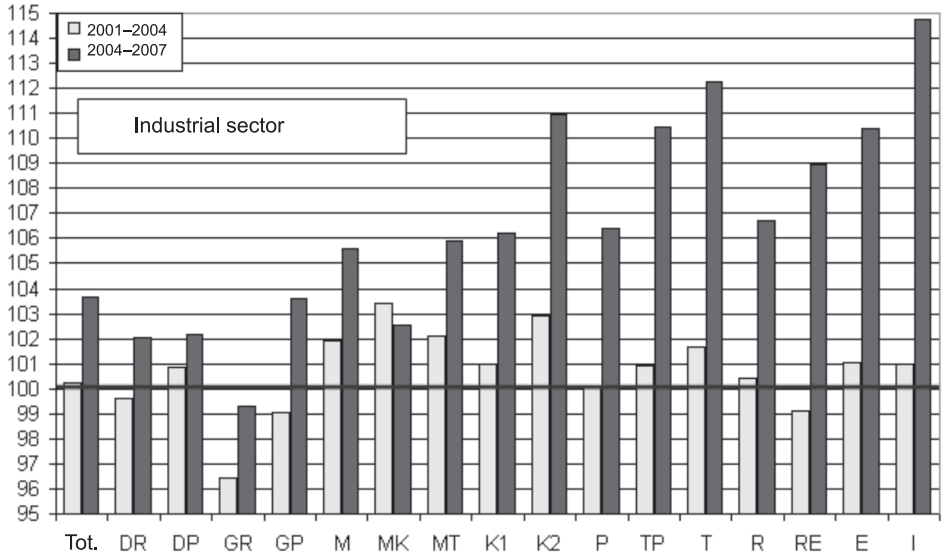

Figure 5. Changes in the dynamic of growth of private enterprises by functional categories of municipalities in the industrial sector in 2001–2007.

Legend: see Table 2.

Source: based on GUS data.

Lower-order services

In the case of lower-order services primarily associated with trade, the reported increase in the pre-accession period was 4.6% (Table 4, Fig. 6), with highest growth in smaller cities situated in transport corridors (A = 107.1) and in suburban zones of largest cities (A = 106.9). At the other extreme, there were cores of large and medium-sized cities, where the value of the increase was within the statistical error (A = 100.2). In the remaining categories, the percentage values were relatively uniform and oscillated around 4–6%.

In the post-accession period, not only the dynamic of enterprise creation decreased, but also their nominal number fell. This was partly due to the work performed by statistical offices aimed to verify the KRUPGN-REGON database of business entities, but this certainly is not the sole explanation of the changes. It should be noted that the category which reported the most serious decrease and reached 96.1% of the pre-accession values included smaller cities situated in transport corridors, i.e. those which reported the greatest increase in the pre-accession period. At the same time, the decrease observed in the suburban zones of these cities was not as significant (98.7% of the values from late 2004 in 2007). A slight increase was visible in one functional category only: the cores of largest cities (B = 100.4).

The results of changes in the dynamic of enterprise development in the lower-services sector in both periods also cannot be correlated in a way which

would provide a clear explanation of the situation. It can only be noted that the distribution of the index values in this sector is much smaller than in the case of enterprises in the industrial sector.

Table 4. Dynamic of the density of private business entities registered in lower-order services in Poland in 2001–2007

Category	Value of index per 1000 working-age population (Poland = 100)	Index change (initial period = 100)		$C = \frac{B}{A}$
		A (2001–2004)	B (2004–2007)	
Total	100	104.6	98.3	0.94
DR	134	105.0	100.4	0.96
DP	113	106.9	99.0	0.93
GR	117	100.2	96.1	0.96
GP	81	103.0	98.7	0.96
M	102	106.1	98.7	0.93
MK	110	107.1	96.1	0.90
MT	123	106.6	99.0	0.93
K1	78	105.2	98.8	0.94
K2	63	106.3	98.7	0.93
P	67	103.3	98.3	0.95
TP	76	103.7	100.0	0.96
T	89	106.5	97.6	0.92
R	55	105.6	99.7	0.94
RE	52	104.5	99.5	0.95
E	62	106.3	99.8	0.94
I	62	104.1	99.8	0.96

Legend: see Table 2.

Source: based on GUS data.

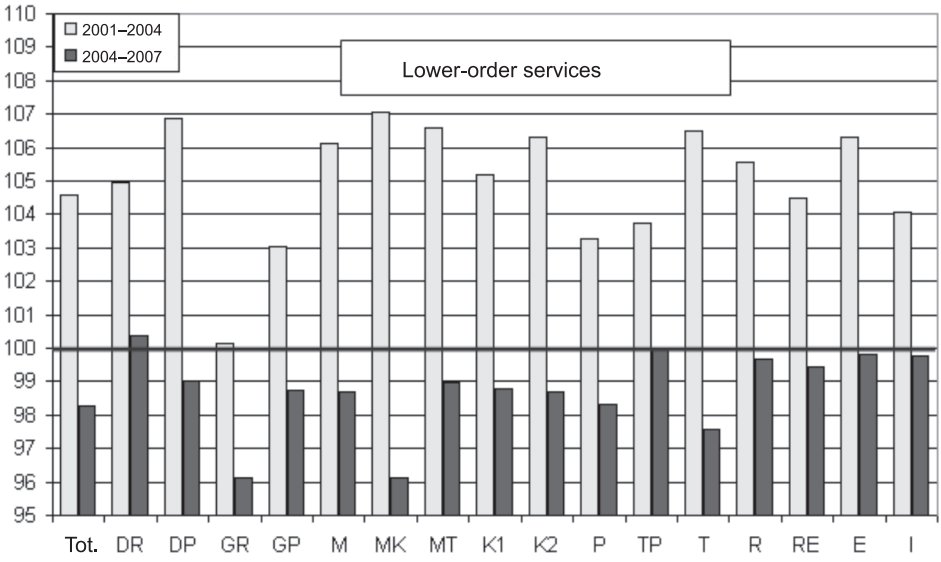

Figure 6. Changes in the dynamic of growth of private enterprises by functional categories of municipalities in lower-order services in 2001–2007.

Legend: see Table 2.

Source: based on GUS data.

Higher-order services

For higher-order services, a higher growth of the number of enterprises relative to the working-age population could be observed in the pre-accession period, with the average increase at the level of 14.3% (Table 5, Fig. 7). Particularly high rates of increase were reported for the suburban zones of largest cities (A = 121.0) and transport corridors under extensive use, and the lowest – in the cores of medium-sized and large cities.

In the post-accession period, the rate of increase dwindled considerably. Similarly, no distinct regularities could be observed in this respect for higher-order services, although some symptoms were noticeable. First of all, the high dynamic in the suburban zones of largest cities was kept up. At the same time, the very cores of these urban centres moved up to the top of the ranking (B = 112.3). This means that the gap between metropolitan regions and other areas with regard to the concentration of higher-order services increased considerably.

Just as in the case of lower-order services, a clearly dwindling dynamic of enterprise development in the cores of medium-sized cities could be observed. An even deeper decrease was reported for smaller cities situated in transport corridors.

If we single out Warsaw, the city placed at the very top of the settlement hierarchy, we see that the pace of changes concerning higher-order services

was particularly characteristic there. In both periods under analysis, very high levels of density rates could be observed in the city (A = 117.3, B = 119.7). And, what is most intriguing, whilst the dynamic of development of lower-order service companies in the private sector relative to the working-age population nearly ground to a halt across Poland and in all the functional categories, the situation in Warsaw was quite the opposite. This comes as forceful evidence of socio-economic polarisation. Interestingly, the rate of increase fell considerably in the largest Polish cities (Table 6). For 21 largest cities, only five reported a higher increase in the number of entities in the higher-order services in the post-accession period than before the accession (Gdańsk, Gorzów Wielkopolski, Poznań, Warsaw, Zielona Góra).

Table 5. Dynamic of the density of private business entities registered in the higher-order services sector in Poland in 2001–2007

Category	Value of index per 1000 residents in working-age population (Poland = 100)	Index change (initial period = 100)		$C = \frac{B}{A}$
		A (2001–2004)	B (2004–2007)	
Total	100	114.3	106.7	0.93
DR	179	115.2	112.3	0.97
DP	95	121.0	111.8	0.92
GR	131	107.5	103.5	0.96
GP	60	114.8	106.9	0.93
M	98	112.8	103.7	0.92
MK	101	116.5	101.3	0.87
MT	112	112.9	105.0	0.93
K1	55	117.8	104.4	0.89
K2	39	120.1	103.2	0.86
P	47	118.6	104.5	0.88
TP	50	116.7	103.9	0.89
T	55	118.3	106.7	0.90
R	34	116.2	103.0	0.89
RE	30	118.7	99.1	0.83
E	40	117.6	109.8	0.93
I	46	118.8	104.5	0.88

Legend: see Tab. 2.

Source: based on GUS data.

In the case of Warsaw, an increase in the number of enterprises and generally concentration of higher-order activities, were also observed in earlier studies (Śleszyński 2006). However, whilst in the first period of the transformation (up to the mid-1990s), the quickly increasing advantage of Warsaw could easily be observed, the subsequent years saw some complicated fluctuations, standing in

contradiction to the assumed concentration and polarisation of Poland's capital. The years 1996–2001 were particularly noteworthy, as they saw a reduction in the level of the concentration of enterprises in Warsaw and the Warsaw agglomeration as compared to the rest of the country. In the subsequent (shorter) three-year period, this fall was compensated (in general terms) or considerably surpassed (businesses registered in Sections J and K). The respective shares of Sections J (financial intermediation) and K (business and professional activity) for 1996, 2001 and 2004 were 11.8%, 10.5% and 11.3%, respectively.

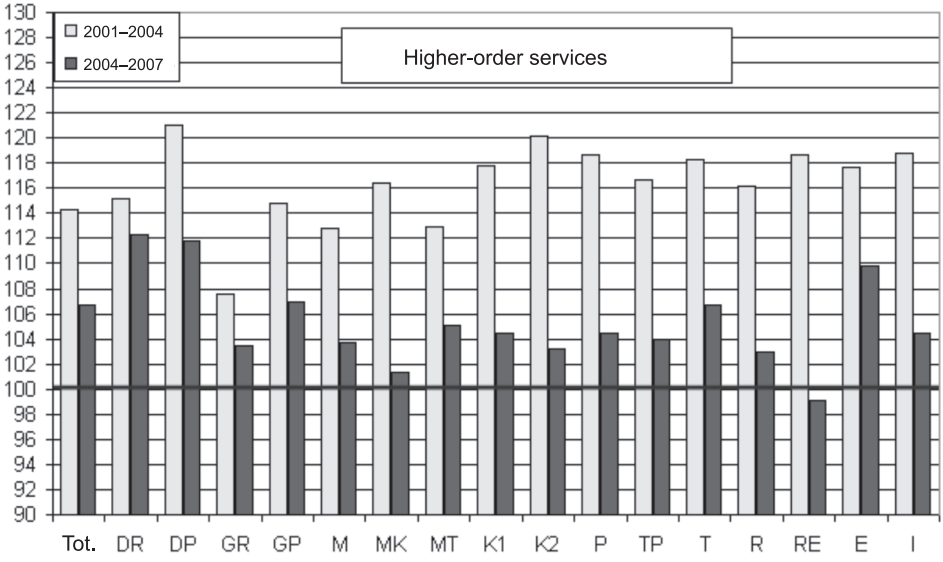

Figure 7. Changes in the dynamic of growth of private enterprises by functional categories of municipalities in higher-order services in 2001–2007.

Legend: see Table 2.

Source: based on GUS data.

Table 6. Dynamic of changes in the density of private sector business entities relative to working-age population in the pre-accession and post-accession periods in Poland's largest cities (UW – higher-order services sector)

City	Pre-accession period 2001–2004		Post-accession period 2004–2007	
	Total	UW	total	UW
	Initial period = 100			
Białystok	90.4	99.1	89.0	97.1
Bielsko-Biała	93.5	105.2	94.7	101.0
Bydgoszcz	103.5	112.3	98.2	108.7
Częstochowa	96.1	103.1	95.1	102.9
Gdańsk	97.1	107.7	100.1	111.4
Gorzów Wlkp.	100.6	103.3	107.5	108.3
Katowice	108.6	116.4	101.7	109.8
Kielce	109.0	114.0	99.7	106.0
Kraków	104.6	111.5	95.9	109.2
Lublin	99.7	104.9	97.7	104.6
Łódź	107.9	115.5	101.5	111.1
Olsztyn	101.4	108.7	95.8	104.3
Opole	100.7	105.3	105.9	111.4
Poznań	104.6	112.4	103.4	113.8
Rzeszów	102.2	110.7	95.3	100.8
Szczecin	102.1	107.3	100.0	104.7
Toruń	100.7	107.0	96.9	104.0
Warsaw	106.8	117.3	105.9	119.7
Wrocław	99.1	108.3	95.5	106.7
Zielona Góra	99.0	104.6	103.1	107.6

Source: based on GUS data.

Discussion and conclusions

The overriding goal of this paper was to examine whether Poland's accession to the EU represented an important landmark in the dynamic of establishing private enterprises or their or their structural changes. Our analyses give a positive answer to this question. Up until 2004, the number of enterprises had either been dwindling considerably or even decreasing relative to the working-age population, while the opposite trend started to prevail in the later period.

Although providing an exhaustive answer concerning the reasons for such a situation is extremely difficult given the present body of knowledge, two tentative – and mutually opposing – kinds of explanation may be proposed. According to the first one, the boom in enterprise development took place before Poland's EU accession, which meant that European integration had in a sense

been 'consumed' before taking place formally. According to the second one, EU accession halted natural, and extremely dynamic, processes of private enterprise development. In light of the current knowledge, the former explanation seems more plausible, especially as it is corroborated by observable processes of intermittently increasing demand for arable land (Komornicki, Śleszyński 2008).

Research has proved that paths of enterprise development can be dissimilar, depending on sectors of activity and functional characteristics of municipalities. Firstly, in the post-accession period, the dynamic of service entities decreased, which was accompanied by the increasing role of the industrial and construction sector. Secondly, municipalities diversified depending on their geographical location and economic functions. In this exercise, metropolitan areas stood to gain the most. A more complex situation could be observed in peripheral regions. In some of them, the period after the accession saw a dynamic increase in the number of enterprises in some underdeveloped parts of Poland, particularly in the industrial and construction sector. This could be explained by the construction boom in Poland and the resultant setting up of businesses offering this type of services. However, the mechanism underpinning this phenomenon seems more complex, and can involve migrations of Polish building sector specialists driven by the opening of the labour markets in some EU countries, and, more and more frequent, incidences of taking up illegal employment. The resultant employment gap in Poland could be filled in by businesses started up by those who had earlier been out of work or who had worked in other sectors. This, in turn, would mean a certain hierarchy of circulation of enterprises and individuals offering construction and assembly services: more experienced workers would go abroad, to be replaced by 'new entrants'. A rapid increase in non-urbanised areas is particularly desirable from the regional development perspective.

What is worrying despite these positive processes is the growing socio-economic polarisation. Metropolitan areas show a greater dynamic in enterprise creation and their density relative to their population. Among the best-developed urban centres, Warsaw is a clear frontrunner on all counts. We can say therefore that polarisation processes take place at different hierarchical levels. Bigger cities outperform smaller cities, smaller cities do better than peripheral areas, and the capital city comes as a winner in all the categories. A patchy spatial structure is thus developing, although with some characteristics of a hierarchy. Interestingly, the hypothesis of a tessellated spatial structure of the Polish civil society was recently developed by J. Wendt (2007), who proved that it was mainly endogenous factors such as the level of education, stable economic situation and a low unemployment level that played the key role in the process of its development.

Neither obvious regularities nor similarities to well-known regional development models (especially the centre vs. the peripheries) were identified, which means that new interpretations and theoretical concepts should be sought. For instance, it was found that despite the hierarchical nature of the settlement

system and in some cases the long-established division into development centres and their hinterlands, there exist areas which do not easily fall into this pattern. Unquestionably, to some extent this is the consequence of the reorganisation of socio-economic systems, which increasingly involves the breaking of intraregional ties and severing vertical ties in the hierarchy (e.g. using the concept of P. Dicken and A. Malmberg 2001), but the overall impact of these phenomena on the current developments is not quite clear. For instance, such processes were observed in the Mazowsze region by M. Smętkowski (2001, 2003). However, contemporarily it is difficult to rely on analyses based on the data from the initial period of the transformation, which, as it became clear following the 2002 national census, contained some errors.

In this context, the situation of medium-sized and smaller urban centres such as Bydgoszcz, Częstochowa, Radom or Rzeszów can be viewed as particularly unfavourable. In the case of these cities, post 2004 the low dynamic of growth in the number of enterprises was maintained, and in some cases it dwindled. This can be seen as a proof not only to differentiating structural and functional changes, but could also indicate that the economic functions are being backwashed by larger, more competitive cities. The looming shadow of Warsaw was quite tangible as far as the backwashing of human capital through migration of enterprising individuals was concerned (Lisowski 2000; Śleszyński 2009b).

Research also suggests that more intense economic urbanisation processes are taking place in western Poland, with the line of the River Vistula as the boundary. In this context, the evolution of metropolitan and higher-order functions would be especially desirable, yet they are limited to the largest cities only.

One final conclusion that can be drawn from our analysis concerns the instability of the development of Poland's spatial structure, which, however, could open up good prospects for regional development and overcoming the historical, civilisational and cultural barriers.

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