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BUSINESS DEMOGRAPHY – THE ANALYSIS OF FIRM POPULATION IN THE ZACHODNIOPOMORSKIE VOIVODSHIP AS COMPARED TO THE POLISH AND EUROPEAN MARKET

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Abstract

Business demography is a new developing field of research. Problems in scientific research occur due to methodological inaccuracies. Differences in defining terms and indicators, and differences and changes in business registration standards make it difficult to analyse data in time or to conduct a comparative study of various countries. Many problems still remain to be solved; however, there is a need to study the population of firms and to analyse processes occurring in these populations. This article shows the data on birth rates and death rates of European business entities registered by the Eurostat. It also presents firm set-up indicators and firm liquidation indicators in the Zachodniopomorskie voivodship as compared to the Polish market.

Keywords: business fluctuation, business demography, firm set-up and liquidation firm indicator.

JEL classification: E32, E39, C19.

1. Business demography

Business demography is a new discipline dealing with the study of the structure of population and cohort of firms as well as the changes undergoing in these structures.

The European Commission established *Observatory of European SMEs* in December 1992 in order to analyse economic results of small and medium size businesses in Europe. The main objective of the reports is to provide politicians, research workers, economists and entrepreneurs with necessary information about this sector. The fifth report of 2002 was titled "Business Demography in Europe". The interest in the problem of business demography began between the 19th and 20th century. Certain similarities were found between demography studying human populations and business demography focusing on changes occurring in the populations of business entities. The term "business demography" used by the Eurostat and the European Commission was soon adopted in Poland.

The report of the European Commission points out that the results concerning member states need to be compared with due care to methodological differences. These differences refer to including in registers those firms that are out of business (either liquidated or deferred) and recognizing those firms which changed the legal form of their business activity as completely new firms.

Changes in the size of the population of firms are the result of various processes in time. Differences of indicator names used in business demography and their definitions are caused by the ambiguity of terms such as birth and death of business entity. This problem is nonexistent in demography and in the analysis of human populations. Doubts arise in the case of changes made in administrative registers, as, for example, is the case when a legal form of business activity changes (is it an old firm continued or a new one established?). Figure 1 illustrates an outline of processes affecting the size of the population of firms.

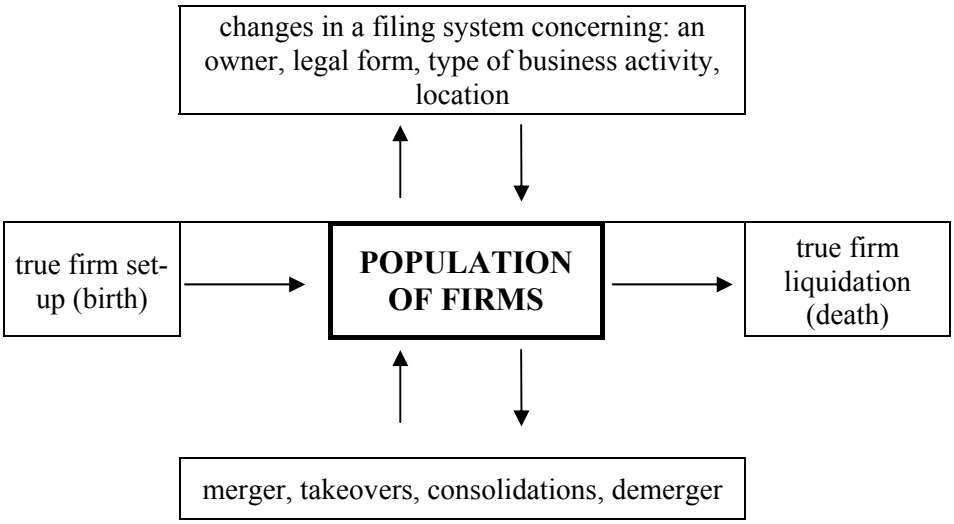

Fig. 1. An outline of processes affecting the numbers of firm populations
Source: own study.

According to the Eurostat definition[1]: business demography data present the "stocks and flows" of enterprises as an indicator of business dynamism in a given sector and economy. In addition to the population of active enterprises, the births, survivals and deaths of enterprises are recorded. Genuine births and deaths are each subsets of the wider concepts of enterprise creations and cessations. A creation is considered as a birth only if the enterprise is created from scratch. Equally, a cessation is considered a death only if it is actually closed down and ceases activity. An enterprise is alive as long as it shows activity in terms of employment and/or turnover. A birth amounts to the creation of a combination of production factors with the restriction that no other enterprises are involved in the event. Births do not include entries into the population due to mergers, break-ups, split-offs or restructuring of a set of enterprises. It does not include entries into a sub-population resulting only from a change of activity. A birth occurs when an enterprise starts from scratch and actually starts activity. An enterprise creation can be considered an enterprise birth if new production factors, in particular new jobs, are created. If a dormant unit is reactivated within two years, this event is not considered a birth. A death is the dissolution of a combination of production factors with the restriction that no other enterprises are involved in the event. Deaths do not include exits from the population due to mergers, take-overs, break-ups or restructuring of a set of enterprises. It does not include exits from a sub-population resulting only from a change of activity.

An enterprise is included in the count of deaths only if it is not reactivated within two years. Equally, a reactivation within two years is not counted as a birth. A uniform system of firm

registration procedures is being introduced and these approach European standards. This, in turn, is the cause of problems with comparative study in time.

2. European analysis

The Eurostat presented data of birth rate, death rate and survival rate as a percentage of the population of active enterprises in the European countries. A birth is the creation of a combination of production factors with the restriction that no other enterprises are involved in the event. Births do not include entries into the population due to mergers, break-ups, split-off or restructuring of a set of enterprises. It does not include entries into a sub-population resulting only from a change of activity. A birth occurs when an enterprise starts from scratch and actually starts activity. An enterprise creation can be considered an enterprise birth if new production factors, in particular new jobs, are created. Birth rates in the European countries between 1998-2004 are presented in Table 1.

Table 1. Business demography – a birth rate (real enterprise births in year *n*, as a percentage of the population of active enterprises in year *n*)

Country	1998	1999	2000	2001	2002	2003	2004
Belgium	8.48	–	7.04	–	–	–	–
Bulgaria	–	–	–	–	–	–	10.46 (p)
Czech Republic	–	–	–	12.45 (p)	10.03	10.13	–
Denmark	10.07	10.86	9.98	9.27	–	–	–
Estonia	–	–	11.20	12.97	11.49	15.47	–
Spain	9.73	9.58	9.65	9.08	9.30	9.78	–
Italy	11.38	7.56	7.76	7.69	7.36	7.19	7.72
Latvia	–	–	16.20	10.20	21.76	10.20	–
Lithuania	–	–	11.34	11.48	10.30	9.20	–
Luxembourg (Grand-Duché)	13.81	14.04	12.87	12.70	11.73	10.61	–
Hungary	–	–	13.56	12.72	14.54	10.30	–
Netherlands	–	9.56	9.45	9.61	9.91	8.45	–
Portugal	9.45	8.00	7.58	7.46	5.96	6.38 (p)	–
Romania	–	–	10.92	11.45	12.59	18.74	18.96
Slovenia	–	–	6.41	6.50	7.14	6.59	–
Slovakia	–	–	10.07	14.93	14.97	8.83	10.55
Finland	8.38	7.53	7.12	7.15	7.31	7.71	–
Sweden	6.57	6.31	7.03	6.58	6.09	6.07	6.49
United Kingdom	13.35	13.08	12.06	11.87	11.69	13.24	14.30
Norway	12.26	11.43	10.29	10.09	–	–	–
Switzerland	–	–	–	–	–	3.50	–

– not available, (p) provisional value.
Source: the Eurostat, http://epp.eurostat.ec.europa.eu

A death is the dissolution of a combination of production factors with the restriction that no other enterprises are involved in the event. Deaths do not include exits from the population due to mergers, take-overs, break-ups or restructuring of a set of enterprises. It does not include exits from a sub-population resulting only from a change of activity. An enterprise is included in the count of deaths only if it is not reactivated within two years. Equally, a reactivation within two years is not counted as a birth.

Table 2. Business demography – a death rate (real enterprise deaths in year *n*, as a percentage of the population of active enterprises in year *n*)

Country	1997	1998	1999	2000	2001	2002	2003	2004
Belgium	–	6.71	8.68 (p)	–	–	–	–	–
Czech Republic	–	–	–	9.90	9.31	10.56 (p)	–	–
Denmark	8.06	8.29	8.14	9.74 (p)	–	–	–	–
Estonia	–	–	–	12.66	11.84	7.82	–	–
Spain	7.69	8.04	6.93	7.23	6.87	6.37	6.13 (e)	–
Italy	–	6.52	7.12	6.49	6.54	7.15	7.43 (p)	–
Latvia	–	–	–	13.17	9.25	10.75 (p)	16.94 (p)	–
Lithuania	–	–	–	13.43	7.24	8.85	–	–
Luxembourg (Grand-Duché)	8.79	9.15	9.61	9.22	9.48	9.81	–	–
Hungary	–	–	–	9.91	10.41 (p)	11.10 (p)	–	–
Netherlands	–	7.66	–	9.21	7.94	9.01 (p)	–	–
Portugal	6.99	6.54	6.26 (p)	1.39	4.56	4.26 (p)	–	–
Romania	–	–	–	11.23	11.61	11.31	9.87	8.24
Slovenia	–	–	–	6.16	6.35	7.81	–	–
Slovakia	–	–	–	8.96	10.90	10.37	11.75 (p)	7.41 (e)
Finland	6.75	7.95	7.05	6.47	6.61	7.14 (p)	–	–
Sweden	7.07	5.88	5.09	5.55	5.56	5.18	5.14	5.29 (p)
United Kingdom	–	10.62	10.96	10.30	10.58	10.48	11.16 (p)	11.50 (p)
Norway	–	–	7.61	8.30	–	–	–	–
Switzerland	–	–	–	–	–	–	3.67 (p)	–

– not available, (p) provisional value, (e) estimated value.
Source: the Eurostat, http://epp.eurostat.ec.europa.eu

In the business demography context, survival occurs if an enterprise is active in terms of employment and/or turnover in the year of birth and in the following year(s). Two types of survival can be distinguished:

– an enterprise born in year *n* is considered to have survived in year *n + 1* if it is active in terms of turnover and/or employment in any part of year *n + 1* (= survival without changes),
– an enterprise is also considered to have survived if the linked legal unit(s) have ceased to be active, but their activity has been taken over by a new legal unit set up specifically to take over the factors of production of that enterprise (= survival by take-over).

Table 3. Business demography – a survival rate
(the percentage of all real enterprise births in year *n* which are still active in year *n+2*)

Country	2000	2001	2002	2003	2004
Czech Republic	–	–	–	65.91 (p)	–
Denmark	63.81	61.94	–	–	–
Estonia	–	–	62.11	71.12	–
Spain	69.32	70.07	71.16	73.80	–
Italy	71.31	76.65	77.74	77.48	74.88
Latvia	–	–	69.88	74.60	–
Lithuania	–	–	71.43	81.38	–
Luxembourg (Grand-Duché)	76.91	77.01	75.94	79.91	–
Hungary	–	–	67.62	68.66	–
Netherlands	–	71.04	73.55	74.12	–
Portugal	71.60	– (p)	–	93.68 (p)	–
Romania	–	–	70.96	69.62	76.87
Slovenia	–	–	84.06	84.66	–
Slovakia	–	–	89.37	83.54	66.43
Finland	68.76	70.48	71.73	60.09	–
Sweden	86.82	89.30	88.04	87.20	87.78
United Kingdom	78.64	79.86	81.82	82.48	81.95
Norway	74.83	70.16	–	–	–

– not available, (p) provisional value.
Source: the Eurostat, http://epp.eurostat.ec.europa.eu

The Eurostat statistics consider only true birth and death of firms and relate them to the number of active firms. Due to the lack of standardization of statistical data collection methods the European statistics are incomplete. Therefore in the presented tables the following countries are missing: Bulgaria (Table 2-3), Germany, Greece, France, Cyprus, Malta, Austria, Poland, Croatia, Turkey, Iceland, Switzerland (table 3).

3. The analysis of indicators in the Zachodniopomorskie voivodship as compared to the Polish market

This article draws upon the data collected by REGON (national economy register) and the following formulae were used to calculate the indicators for firm set-up and firm liquidation[2]:

a) firm set-up indicator

$$W_T = \frac{Fp_t}{F_{t-1}} \cdot 100\%, \tag{1}$$

b) firm liquidation indicator

$$W_L = \frac{Fz_t}{F_{t-1}} \cdot 100\%, \tag{2}$$

where:

Fp_t - number of firms set up over a given period of time (newly registered firms),

Fz_t - number of firms liquidated over a given period of time (struck off the register),

F_{t-1} - number of firms at the end of a previous period.

Thus the data concerning the number of firms set up and firms liquidated in a given period are arranged in time sequences of periods (in the analysis – the annual sum) and the data concerning the number of firms at the end of a previous period are arranged in time sequence of moments (in the analysis – the number on December, 31st).

Business entities registered in REGON comprise legal persons, organizational units without legal personality and natural persons conducting economic activity. Natural persons who have made up 76.1% of all the registered entities constitute a majority. The changes in the total number of firms and those run by natural persons are shown in Figure 2.

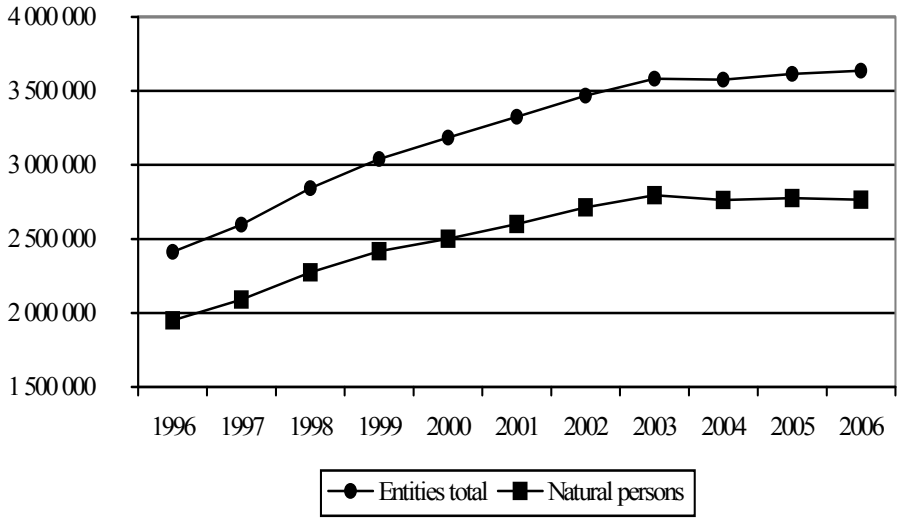

Fig. 2. The total number of economic entities registered in the REGON register and natural persons conducting economic activity in Poland in years 1996-2006

Source: *Zmiany strukturalne grup podmiotów gospodarki narodowej w 2006 r.* Informacje I opracowania statystyczne. GUS, Warszawa 2007.

Figures 3-4 represent indicators for set ups and liquidations for all business entities in the Zachodniopomorskie voivodship as compared to the Polish market between 2003-2006, whereas Figures 5-6 – for natural persons conducting economic activity.

Fig. 3. A firm set-up indicator for the Zachodniopomorskie voivodship and Poland in the years 2003-2006 (enterprise births in year *n*, as a percentage of the population of enterprises in year *n-1*)
Source: own calculations.

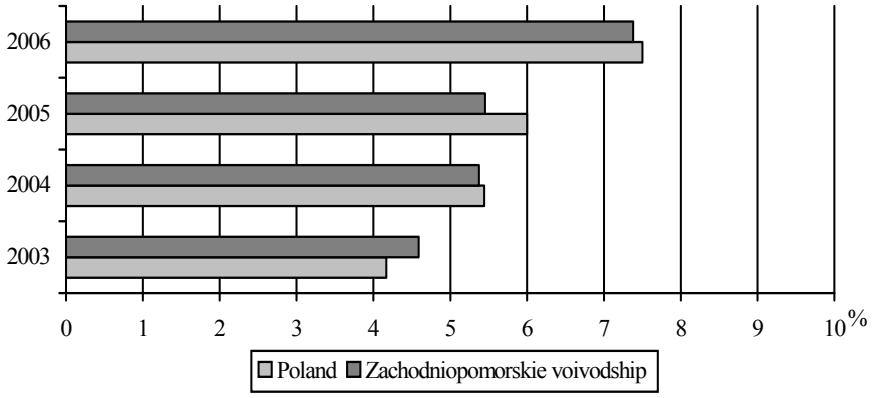

Fig. 4. A firm liquidation indicator for the Zachodniopomorskie voivodship and Poland in the years 2003-2006 (enterprise deaths in year *n*, as a percentage of the population of enterprises in year *n-1*)
Source: own calculations.

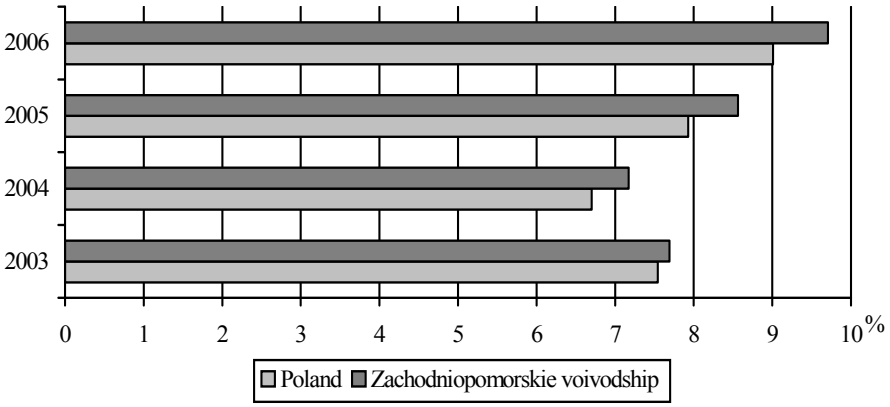

Fig. 5. A firm set-up indicator for the Zachodniopomorskie voivodship and Poland in the years 2003-2006 – natural persons conducting economic activity (enterprise births in year *n*, as a percentage of the population of enterprises in year *n-1*)
Source: own calculations.

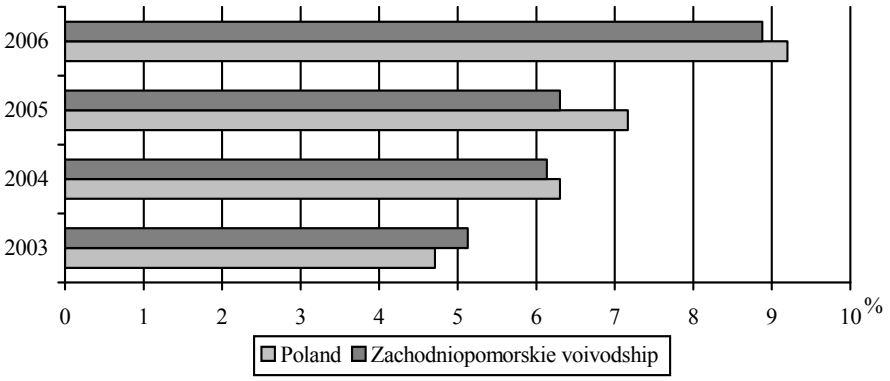

Fig. 6. Firm liquidation by the indicator in the Zachodniopomorskie voivodship and Poland in the years 2003-2006 – natural persons conducting economic activity (enterprise deaths in year *n*, as a percentage of the population of enterprises in year *n-1*)
Source: own calculations.

The value of the indicator of set-ups in the Zachodniopomorskie voivodship and Poland is on the rise following a temporary fall, whereas the indicator of firm eliminating rises throughout the whole period under study. It is noticeable that the contribution of business entities set up in Zachodniopomorski voivodship after 2003 is larger than in the rest of Poland (see Figure 3) and the contribution of entities being liquidated is smaller (see Figure 4). The situation is similar in case of the analysis of indicators for natural persons but these indicators are of higher value (see Figures 5-6). The values of firm liquidation indicators rose faster than set- up indicators and, thus, the net growth of firms was falling. In 2006 there was even a negative net growth of business entities run by natural persons.

Conclusions

Business demography is a new, developing field of research. Problems in scientific research occur due to methodological inaccuracies. Differences in defining terms and indicators as well as differences and changes in business registration standards make it difficult to analyse data in time or conduct a comparative study of various countries. Many problems still remain to be solved; however, there is a need to study the population of firms and to analyse processes occurring in these populations.

Notes

[1] Eurostat (2007).

[2] See Markowicz (2000).

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