

THEORETICAL AND EMPIRICAL ANALYSIS OF THE SME SECTOR IN THE POLISH ECONOMY

Katarzyna Brożek – Justyna Kogut

Abstract

The term "small and medium-sized enterprises" is widely used in the international business arena. The role and importance of these entities in the dynamic development of the Polish economy is emphasized more and more often. In Poland, the sector of small and medium-sized enterprises was discovered in the 90s. Thanks to the establishment of the SME sector, unemployment in Poland was reduced, which allowed for the development of individual regions affecting the activation of the entire economy. In addition, the SME sector is an integral part of internal strength of the regions that determine its progress. Bearing in mind the arguments put forward it can be concluded that the SME sector is extremely compelling, both from a scientific as well as practical point of view. Because one of the tasks of undertaken considerations is to present the theoretical approach, and so the first part of the study is the presentation of the SME sector. The second component relates to the empirical approach of the suggested issue. Thus the primary aim of this work is theoretical and empirical analysis of small and medium-sized enterprises operating in the Polish economy.

Key words: analysis, enterprises, Poland,

JEL Code: C1, L25, O10

Introduction

After the transformation period, Polish entrepreneurs gained access to various branches of the economy, which led to the development of private entrepreneurship sector. Thanks to the abolition of legal restrictions that were characteristic of communism, citizens could create and build their own initiatives. As it was a period of dynamic growth of the businesses and the market economy was open and absorbtive for new ideas, a large number of small and medium-sized businesses emerged at that time. It was precisely thanks to the establishment of the SME sector that the unemployment in Poland was reduced, which allowed for the development of individual regions influencing the activation of the whole economy (Wielgus, 2006, p.128). At present, the development of small and medium enterprises is practically the only chance to increase employment, as well as effective competition (more: Marakova, Dyr, Wolak-Tuzimek, 2016, pp. 92-94) of the Polish economy on the international stage.

The principal aim of the proposed deliberations was to conduct a theoretical and empirical analysis of the SME sector in Poland. Two research hypotheses have been put forward, the first is that if the number of SMEs is increasing, the number of people working in the sector is growing, and the second one is that the number of SMEs is increasing along with the increase in their revenues.

1 Business characteristics - theoretical approach

An enterprise is an organizational unit which has the ability to run its own business and it is a legally, economically, organisationally and territorially separated entity. The purpose of an enterprise is to make a profit from its business.

The company (more: Targalski, 2014), as each organization, has characteristic features as the consequence of linking the company with cash and commodity production. These features are: economic isolation (the fact that an enterprise owns a property that is managed for profit); technical and organizational separation - (the enterprise has its own organizational structure appropriate to its business profile and operating conditions); legal separation of legal entities - such a company can make commitments and acquire rights (Białasiewicz, 2008, p. 37).

1.1 Classification of enterprises

The classification of companies depends on different criteria. The types of these criteria are very diverse and may result, for example, from the geographic area of activity, size, type of activity, organizational and legal forms, or degree of concentration. However, due to the breadth of the article, it is limited to discuss only one of the most important criteria for the division of enterprises, namely the size of the enterprise. Due to this classification we can distinguish: micro, small, medium and large enterprises.

These types of businesses (except large ones) consist of so-called "SME sector". The table below presents the most common criteria for defining SMEs. These are not the only size measures describing small and medium enterprises.

Tab. 1: The most common criteria for defining small and medium enterprises

CRITERIA		
QUANTITY		QUALITY
EXPENSES	EFFECTS	independence

employment	turnover	property
capital	positive value	organization and management
assets	market share	other

Source: own elaboration based [Targalski, 2014, p. 49]

It should be noted, however, that the quantitative attributes of SMEs, such as employment level, turnover, total assets, fixed assets, annual net income (Lichtarski, 2009, p. 27), are far more objective to define and much simpler to grasp taking into account the needs of state and economic administration. The reason for this is their measurability (Wolański, 2013, p. 21), as opposed to qualitative criteria (i.e. structure of the company, the role of the owner, type of financing) or CSR - (more: Lament, 2016, pp.1031-1040) .

2 The sector of small and medium enterprises - empirical approach

The theoretical analysis of the issue undoubtedly showed a very strong relationship between the SME sector and the development of the Polish economy. Nevertheless, this analysis should be extended to empirical analysis. The basic indicators describing the Polish SME sector taking into account the territorial division are presented below. Statistical data for the years 2010-2015 were used for the analysis. For the sake of clarity, the analysis was supplemented by the calculation of selected statistical indicators.

Firstly, it was decided to discuss the size and structure of micro, small and medium-sized enterprises operating in Poland in 2015. Statistical data is presented in Table 2.

Tab. 2: Number and structure of entities from the SME sector in Poland in 2015

The size of the SME sector in 2015						
	micro	small	medium	Micro structure	Small structure	Medium structure
PL	1 838 365	56 713	15 631	96%	3%	0,80%

Source: [Local Data Bank, 15.04.2017]; own calculations

In 2015, there were 1.91 million entities in the Polish economy qualified for the SME sector, that accounted for 99.8% of all active enterprises. The structure of enterprises has remained unchanged for many years: micro-enterprises are dominant in the number of enterprises - 1.83 million, which constituted 96%, then small 3% and medium of about 0.8% of the total.

Next, it was decided to examine the dynamics of changes in the number of entities from the SME sector over the studied years. The necessary data and calculations are given in Table 3.

Tab. 3: Number of enterprises from the SME sector in Poland in 2015

Number of enterprises from the SME sector									
	2010	2011	2012	2013	2014	2015	arithmetic average	Dynamics 2015/2010	Structure 2015
PL	1726663	1784603	1794943	1771460	1842589	1914141	1805733	11%	100%
1	115988	119348	121334	115853	119903	121290	118952,7	4,60%	6,34%
2	285398	294064	305998	304015	322738	344839	309508,7	20,8%	18,02%
3	157841	165107	163176	163865	169626	177569	166197,3	12,50%	9,28%
4	201392	207947	210639	208267	212357	217640	209707	8,10%	11,37%
5	73267	76448	76196	73863	77205	79994	76162,17	9,20%	4,18%
6	68812	74163	70430	70653	74690	76680	72571,33	11,40%	4,01%
7	41733	44572	43197	43988	45505	46320	44219,17	11,00%	2,42%
8	47305	50101	47492	48142	48115	48812	48327,83	3,20%	2,55%
9	44503	46101	45142	44307	45817	47247	45519,5	6,20%	2,47%
10	175102	181408	183667	179998	188527	196253	184159,2	12,10%	10,25%
11	90177	90428	89943	88802	91731	95309	91065	5,70%	4,98%
12	135821	138449	145106	141605	146815	152660	143409,3	12,40%	7,98%
13	36748	37541	36548	37581	38096	39201	37619,17	6,70%	2,05%
14	85520	85682	87043	85205	89128	90785	87227,17	6,20%	4,74%
15	111509	119362	116185	113498	118806	124846	117367,7	12,00%	6,52%
16	55548	53882	52847	51819	53529	54694	53719,83	-1,50%	2,86%

Legend: 1 Lodz Province, 2 Masovia, 3 Lesser Poland, 4 Silesia, 5 Lublin Province, 6 Subcarpathia, 7 Podlasie Province, 8 Holy Cross, 9 Lubusz Province, 10 Greater Poland, 11 West Pomerania, 12 Lower Silesia, 13 Opole Province, 14 Kuyavia - Pomerania, 15 Pomerania, 16 Warmia - Masuria.

Source: [Local Data Bank, 15.04.2017]; own calculations

The number of business entities classified in the SME sector is steadily increasing (except for the year 2013, where the decrease was recorded in comparison with 2012). In 2015, a record-breaking result was achieved and thus this led into a dynamics rate of 11%, thus between 2010 and 2015 there was an increase of 187 478 such entities. Over the six years under study, the average number of functioning micro, small and medium enterprises was 1,805 thousand. Regarding the structure of enterprises taking into account territorial division, it should be noted that this is analogous to the above analysis.

At the next stage of the analysis, the focus was on investigating the number of people working in micro, small and medium enterprises together. Statistical data and results of dynamic and structural indicators are presented in Table 4.

Tab. 4: Number of people working in the SME sector in the years 2010-2015

Number of people working in the SME sector									
	2010	2011	2012	2013	2014	2015	arithmetic average	Dynamics 2015/2010	Structure 2015
PL	6191657	6336537	6265882	6181949	6326461	6491998	6299081	4,90%	100%
1	413275	418892	410810	397860	408550	411536	410154	-0,40%	6,30%
2	1024048	1048124	1066367	1044965	1079475	1111612	1062432	8,60%	17,10%
3	561519	578862	554567	568247	585047	595078	573887	6,00%	9,20%
4	786865	807434	795960	801255	797334	805920	799128	2,40%	12,40%

5	252402	261109	252072	250163	261869	261899	256586	3,80%	4,00%
6	267321	276211	268108	266434	272108	284975	272526	6,60%	4,40%
7	139824	145938	141673	140768	143893	147552	143275	5,50%	2,30%
8	165359	171053	165640	159349	159190	161850	163740	-2,10%	2,50%
9	163046	159322	157346	155968	156481	164546	159452	0,90%	2,50%
10	645863	662347	671764	656386	677214	694274	667975	7,50%	10,70%
11	269480	275210	272963	262930	269451	282887	272154	5,00%	4,40%
12	465594	475220	478015	467181	484516	500853	478563	7,60%	7,70%
13	140655	142765	136541	134450	139528	141691	139272	0,70%	2,20%
14	311044	317610	314787	306049	311719	324182	314232	4,20%	5,00%
15	393280	404509	394600	389500	399058	418539	399914	6,40%	6,40%
16	192083	191932	184667	180445	181027	184603	185793	-3,90%	2,80%

Source: [Local Data Bank, 15.04.2017]; own calculations

In 2015, the SME sector was the workplace for approximately 6.5 million people. Compared to 2010, growth was at 4.9%. The number of enterprises directly translated into the employment structure, as the three voivodships were the best (Masovia 17,10%, Silesia 12,4%, and Greater Poland accounted for 10.7% of all employees in the SME sector). On average the least people working in this type of enterprises were reported in the following voivodships: Opole Province, Podlasie Province, Holy Cross and Lubusz Province, where the structure index did not exceed 2.5%. It should also be noted that in three voivodships the dynamics of the decrease in the number of enterprises was noted (in comparison with 2010). The highest dynamics of the decline was in Warmia - Masuria voivodship (-3.9%, the number of enterprises decreased by 7 480). A similar situation occurred in the Holly Cross Province (-2.1%) and Lodz Province (-0.4%).

One of the most important indicators determining the financial condition of enterprises is the value of earned revenue. Table 5 presents the dynamics of income changes in micro, small and medium enterprises in 2010-2015.

Tab. 5: Value of revenues in the SME sector in 2010-2015 [PLN million]

Revenues of the SME sector								
	2010	2011	2012	2013	2014	2015	arithmetic average	Dynamics 2015/2010
PL	1857936	2050260	2084177	2106871	2165302	2275176	2 089 954	22,50%
1	102 292	107 839	111 816	111 637	118 005	120 413	112 000	17,70%
2	479 738	529 438	538 166	536 500	562 466	588 468	539 129	22,70%
3	157 936	173 987	174 033	178 431	183 079	196 513	177 330	24,40%
4	225 811	255 208	252 475	257 466	251 750	261 411	250 687	15,80%
5	60 110	71 468	70 969	71 294	76 322	75 771	70 989	26,10%
6	62 064	70 790	68 974	75 247	77 381	76 945	71 900	24,00%
7	40 010	43 302	44 700	44 013	46 672	49 088	44 631	22,70%
8	43 735	44 370	44 236	43 054	44 058	44 846	44 050	2,50%
9	36 917	40 391	41 215	41 037	41 377	46 203	41 190	25,20%
10	192 669	203 109	214 106	225 103	230 752	238 844	217 431	24,00%

11	67 602	74 217	77 488	73 575	76 179	88 255	76 219	30,60%
12	119 917	133 242	138 004	145 611	143 047	156 892	139 452	30,80%
13	36 619	40 230	40 917	40 543	40 706	41 906	40 154	14,40%
14	78 807	87 796	96 834	89 014	95 578	98 656	91 114	25,20%
15	113 335	129 576	124 406	129 778	132 523	141 807	128 571	25,10%
16	40 374	45 296	45 837	44 570	45 408	49 155	45 107	21,40%

Source: [Local Data Bank, 15.04.2017]; own calculations

In 2015, companies from the SME sector increased their revenues and recorded the highest value of over PLN 2.2 trillion. This also resulted in a record growth rate (22.5%), as yet in 2010 these revenues amounted to more than PLN 1.8 trillion. In a territorial area in terms of the highest value of revenues, in 2015 again Masovia Province turned out to be the best - over 588 billion. Six provinces received revenues of more than PLN 100 billion, including Silesia PLN 261 billion, Greater Poland PLN 238 billion, Lesser Poland PLN 196 billion, Lower Silesia PLN 156 billion, Pomeranian PLN 141 billion and Lodz Province PLN 120 billion. On the other hand, the ceiling of 50 billion of companies' revenues was not achieved by entrepreneurs operating in the following provinces: Warmia - Masuria (49,1 billion), Podlasie Province (49 billion), Lubusz Province (46 billion), Holy Cross (44 billion) and Opole Province (41 billion) .

After analyzing the revenue of the companies, the other side of the coin should be presented, i.e. the value of the costs incurred by such entities - Table 6.

Tab. 6: Value of costs in the SME sector in 2010-2015 [PLN million]

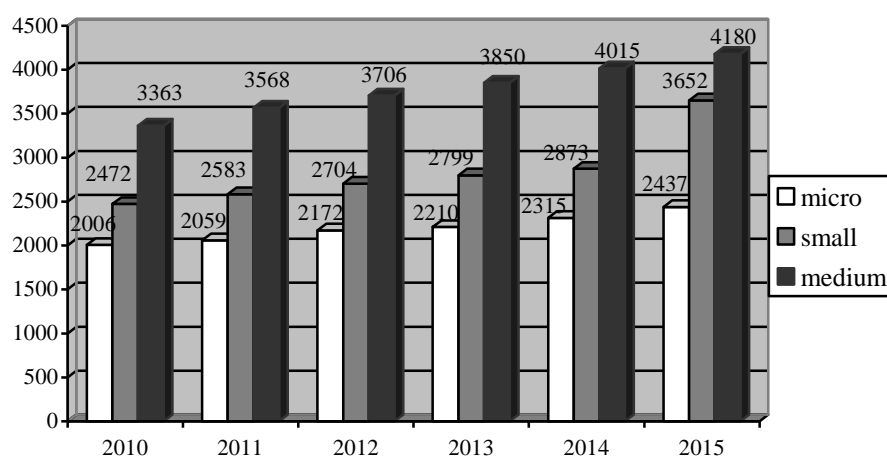
Costs of the SME sector								
	2010	2011	2012	2013	2014	2015	arithmetic average	Dynamics 2015/2010
PL	1 687878	1 904113	1 934277	1 941440	1 982793	2 070354	1 920 143	22,70%

Source: [Local Data Bank, 15.04.2017]; own calculations

Undoubtedly, the costs of businesses are directly correlated with the value of revenues. With the increase in revenue, business costs also increase. The analysis of the presented statistics undoubtedly shows that the costs of the SME sector systematically increase. In the first audited year, i.e. 2010, they amounted to PLN 1.6 trillion and already in 2015 over PLN 2 trillion, indicating a growth rate of 22.7%. On the other hand, the average cost over the years was PLN 1.9 trillion.

Another exceptionally important indicator for the economic situation of SMEs is the level of monthly wages per employee - Chart 1.

Chart 1: Average gross monthly salary per employee by size of enterprise in 2010-2015
[PLN]



Source: own elaboration

Undoubtedly, the average monthly salary per employee was increasing from year to year, and in all businesses, regardless of size. In 2015, in the micro-enterprises, the level of remuneration was 2437 PLN gross, in small entities was higher and amounted to 3652 PLN gross, respectively, whereas in average enterprises the average monthly salary fluctuated around 4180 PLN. Certainly, the level of remuneration depends on the size of the enterprise, the larger the company, the higher the level of remuneration is paid to its employees and vice versa.

At the end of the analysis of the SME sector, it was decided to examine the share of added value generated by this type of enterprise in GDP in the years 2010-2013 - the statistics were collected in Table 7.

Tab. 7: Share of gross added value created by the SME sector in GDP

Year	micro	small	medium	In total
2010	29,6%	7,7%	10,4%	47,6%
2011	29,4%	7,8%	10,1%	47,3%
2012	29,7%	7,8%	11,0%	48,5%
2013	30,8%	8,8%	10,6%	50,1%

Source: own elaboration based on [PARP, 2016, p. 9]

The share of micro, small and medium-sized enterprises in GDP is steadily growing, but it was only in 2013 that it exceeded 50%, i.e. generated every second zloty of this value.

Of all the groups of enterprises by size, the largest share in GDP had micro-businesses - 30.8%, then medium-sized enterprises and finally small business entities.

As the finality of the analysis, it was decided to calculate the correlation coefficients that determine the relationship between the number of enterprises in the SME sector and the three selected indices (number of persons employed in the sector, level of revenues and value of costs incurred in the sector). The results are presented in Table 8.

Tab. 8: Results of Pearson's correlation coefficient for the tested variables

Tested dependency	Correlation coefficient result
Number of enterprises and the number of people working in the SME sector	0,91
Number of enterprises and value of revenues obtained in the SME sector	0,92
Number of enterprises and level of costs incurred in the SME sector	0,88

Source: own calculations

Using the correlation coefficient, showed the strength of the relationship between all three examples. In the first case (studying dependency correlating the number of enterprises and the number of people working in SMEs) and the second case (the number of enterprises and the SME's revenue), the correlation coefficient was, respectively, 0.91 and 0.92, i.e. $r_{xy} > 0.9$ (Aczel, 2000, pp. 479-480), therefore, there is a very strong correlation. Namely, with the increase in the number of enterprises, the number of employees increases (or the value of revenues), and vice versa - (and also the hypotheses 1 and 2 have been confirmed). Since both properties grow / decrease in the same direction, this is a positive correlation (more: Borroni, 2009, pp. 81-95). Similar results were obtained by examining the third correlation, i.e. the number of micro, small and medium enterprises and the level of costs incurred in the SME sector, a correlation coefficient of 0.88 was obtained, indicating a significant (strong) relationship between these two characteristics, because the result is in the range of r_{xy} (0.7-0.9) (see Nelsen, 1998, pp. 343-345).

Conclusions

In Poland, the SME sector plays an important role in the economy as it is primarily a source of revenue for the state budget, contributes to the creation of GDP, creates new jobs, contributes to the creation of social and functional changes. Businesses also have a significant

impact on the emergence and development of economic innovation (more broadly: Wolak-Tuzimek, 2016, pp. 2056-2065). This sector is therefore the spine of the economy.

Undoubtedly, in Poland, the SME sector plays a significant role in the functioning of the economy, because this fact is confirmed, among others, by the following data:

- in 2015 there were 1.91 million entities qualified for the SME sector, and the sector accounted for 99.8% of all enterprises;
- In 2015 the number of employed persons in the SME sector amounted to 6.49 million people;
- The revenues of small and medium-sized enterprises in the analyzed year 2015 amounted to PLN 2.2 trillion and thus achieved a record high;
- operating SMEs enterprises generated in 2013 more than 50% of GDP, i.e. every second zloty of this value.

The results of the study clearly show a very strong link between the number of companies and the number of people employed and the value of revenues. Because there is a positive correlation between these features, so both features grow / diminish in the same direction, so hypotheses 1 and 2 are confirmed.

It should be noted that the ranking of entrepreneurship, in relation to changes and positions of individual provinces, is stable over recent years and no decisive changes are recorded. Mazovia is a clear leader in the classification, but also Greater Poland and Silesia maintain high positions. For many years, the situation on the lowest positions in the discussed ranking is comparable, it applies to the less urbanized provinces, and so: Opole Province, Lubusz Province, Warmia -Masuria, Podlasie Province, Holy Cross and Lublin Province.

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Contact

Katarzyna Brożek

Kazimierz Pulaski University of Technology and Humanities in Radom

Street: Malczewskiego 29, 26-600 Radom, Poland

Mail: k.brozek@uthrad.pl

Justyna Kogut

Kazimierz Pulaski University of Technology and Humanities in Radom

Street: Malczewskiego 29, 26-600 Radom, Poland

Mail: j.kogut@uthrad.pl