

Economic aspects of research and development activity in furniture industry in Poland in the years 2007-2012

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Abstract: *Economic aspects of research and development activity in furniture industry in Poland in the years 2007-2012.* Furniture industry in Poland is characterized by a great activity of export, much exceeding an average of industrial processing in total. The article presents an economic dimension of the research and development activity rendered by furniture companies in Poland. A comparative analysis has been carried out contrasting furniture industry, industrial processing and industry in total. The research covers the years 2007-2012, the basic material being Statistical Yearbooks of Industry comprising the years in question.

Keywords: industrial processing, furniture industry, research and development, innovative activity

INTRODUCTION

Research and development (R&D) is more and more often becoming an indispensable part of economic activity as it guarantees progress which is important from the point of view of companies' innovation and competition on the market. To a greater or lesser degree it applies to every sector of economy and it is usually based on cooperation between science and business. Firms may engage in collaborative R&D for a variety of reasons, for example if spreading the cost and risk associated with an R&D project leads to higher expected profits than carrying out the project individually [Abramovsky 2005, p. 8]. This argument is supported by Sakakibara [1997] who identifies cost- and skill-sharing as two basic motives for co-operation.

In world literature one of the most widely used definitions of R&D was compiled by the Organization for Economic Co-operation and Development (OECD). According to OECD R&D is creative work undertaken on a systematic basis to increase the stock of scientific and technical knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications [OECD....]. Central Statistical Office (GUS) adopted this terminology for its statistical research too. In view of the special role of furniture industry in Polish economy, that is its particularly great import activity, the following paper covers the subject of research and development activity as well as innovativeness of companies functioning on the furniture market.

OBJECTIVE AND RESEARCH METHODOLOGY

The aim of the article is to determine the level of research and development activity in furniture industry as compared to industrial processing and industry in total. The analysis covered the years 2007-2012. The primary source of research materials were "Statistical Yearbooks of Industry" published annually by GUS. In the conducted analyses a few ratios have been used which may indicate the involvement of a company in, among other things: outlays rendered on R&D, expenditure on innovative activity, share of net sales revenue from new or greatly improved products in net sales revenue). According to GUS terminology outlays on research and development (R&D) include [Statistical Yearbook of Industry 2013, p.455]:

— internal outlays that comprise the value of research and development work of a given unit conducted by own research facilities, regardless of their funding sources, including both the

present expenditure and investment outlays on fixed assets connected with R&D, however, without amortization of these means,

— external outlays that comprise the value of research and development work in a given unit purchased from other units (domestic and foreign).

RESEARCH FINDINGS

From the research conducted by GUS it follows that internal outlays on research and development in industry in total increased almost twice as much from 1346.1 million PLN to 2729.7 million PLN (table 1). A decrease in their value (by 24.9%) was noted only in 2010 and amounted to 38.8%. It needs to be emphasized that a considerable share (over 85% each year) of internal outlays on research and development in industry was reserved for industrial processing. Dissimilar tendencies were observed as regards furniture industry. The greatest value of internal outlays on R&D was noted at the beginning of the analyzed period (66.1 million PLN). In the consecutive years the value was much lower (around 8 million PLN). However, in the year 2012 there was another increase in the value of the ratio in question to 39.7 million PLN, though, it was much lower than the initial amount.

In the analyzed period investment outlays on research and development activity of industry in total rose almost three times from 389.3 million PLN to 1151.7 million PLN. In industrial processing similar tendencies were noted, however, in that case the increase was lower and amounted to 132.5%. At the beginning of the analyzed period investment outlays on research and development were as much as 13.9% of the total outlays in industrial processing. In the consecutive years, however, their value for furniture industry significantly decreased. It was only in 2012 that a great increase in the value was noted. It needs to be emphasized that hardly any funds covering the activities were received from state budget, and they were only financed with the use of companies' own capital.

Table 1. Internal outlays on research and development in furniture industry in the years 2007-2012 as compared to industrial processing and industry in total [million PLN]

Itemization	2007	2008	2009	2010	2011	2012
Internal outlays, incl:						
Industry in total	1346.1	1536.0	1719.7	1385.0	1966.1	2729.7
Industrial processing	1236.0	1508.7	1699.6	1374.4	1870.2	2337.5
Furniture industry	66.1	8.8		no data	8.4	39.7
Investment outlays						
Industry in total	389.3	427.4	400.1	312.5	457.4	1151.7
Industrial processing	366.2	426.2	398.2	312.1	412.1	851.7
Furniture industry	51.1	7.1	6.5	no data	0.4	20.0
Budget funds						
Industry in total	124.2	100.1	104.0	137.7	188.7	222.6
Industrial processing	82.2	93.9	92.9	136.4	176.9	188.1
Furniture industry	-	-	no data	no data	no data	0.5
Own funds						
Industry in total	1077.7	1359.6	1541.6	1053.5	1647.5	2284.4
Industrial processing	1047.9	1346.6	1532.6	1044.6	1570.2	1941.0
Furniture industry	66.1	8.8	no data	no data	8.1	31.6

Source: own study on basis of Statistical Yearbook of Industry 2012, p. 459-461, Statistical Yearbook of Industry 2011, p. 449-451, Statistical Yearbook of Industry 2009, p. 451-453, Statistical Yearbook of Industry 2008, p. 409-411.

Research and development activity in a company is to a greater or lesser degree connected with the level of its innovativeness. In the analyzed period outlays on innovative activity of industry slightly increased from 20222.9 million PLN to 20293.2 million PLN (table 2). Their greatest value was noted in 2008, however, only a year later there was a fall

by over 2.2 billion PLN. In 2007 outlays on innovative activity in furniture industry amounted to 477 million PLN. In the consecutive years their level fluctuated greatly. At the end of the analyzed period the value of outlays on innovative activity amounted to 512 million PLN and was by 93.2% higher than in the previous year. Most outlays on innovative activity were spent on the purchase of new machinery, technical devices, tools and means of transport. Usually, more than a half of the funds were spent on the items in question. It applied to all – industry in total, industrial processing and furniture industry. Moreover, the outlays on the enhancement of companies' innovation were connected with research and development activity, acquisition of knowledge from external sources and software, as well as personnel training and marketing of new or significantly improved products. In 2012 in furniture industry 47.9 million PLN, 5.3 million PLN and 11.7 million PLN were spent on the above-mentioned respectively.

Table 2. Outlays on innovative activity in furniture industry in the years 2007-2012 as compared to industrial processing and industry in total [million PLN].

Itemization	2007	2008	2009	2010	2011	2012
Total						
Industry in total	20222,9	23686,1	21405,5	222379,0	19376,5	20293,2
Manufacturing	17015,3	19857,3	17494,4	16494,8	14509,7	14853,4
Furniture industry	477,0	829,9	305,4	285,4	265,3	512,0
R+D activity						
Industry in total	1632,3	1930,0	2173,1	3272,8	2617,2	3529,7
Manufacturing	1594,9	1891,0	2022,0	3127,4	2472,4	3166,7
Furniture industry	16,5	21,1	23,7	40,1	24,6	47,9
acquisition of knowledge from external sources and the software						
Industry in total	336,6	261,5	267,8	910,6	686,5	1026,9
Manufacturing	304,2	239,6	259,9	896,9	442,7	780,9
Furniture industry	0,2	0,6	0,1	0,4	6,0	5,3
personnel training and marketing for new or significantly improved products						
Industry in total	697,9	781,8	390,5	528,6	504,2	508,7
Manufacturing	694,9	638,1	386,6	521,6	494,3	497,5
Furniture industry	7,3	30,9	9,9	3,0	2,1	11,7

Source: own study in the basis of Statistical Yearbook of Industry 2008, p. 421-423, Statistical Yearbook of Industry 2010, p. 432-434, Statistical Yearbook of Industry 2011, p. 461-463, Statistical Yearbook of Industry 2012, p. 419-422, Statistical Yearbook of Industry 2013, p. 469-472.

An economic aspect of innovative and research and development activities is reflected by the share of net revenue from the sales of new or significantly improved products in the net sales revenue. The conversion of the undertaken innovative actions into actual sales revenue is of great significance for the companies' profitability. In the analyzed period the ratio in question for industry in total decreased from 13.4% to 10.2% (chart 1). In industrial processing a similar unfavorable tendency was observed – the share of net sales revenue from the introduction of new or significantly improved products decreased from 16.9% to 12.9%, though, it needs to be pointed out that the decrease was lower than in the case of industrial companies. In furniture industry the fall in the value of the ratio in question was almost twice as much. In 2012 the share of net sales revenue from products connected with innovative activity in net sales revenue amounted to 9.7% whereas at the beginning of the analyzed period it exceeded 20%. It may be referred to as an unfavorable phenomenon for furniture industry.

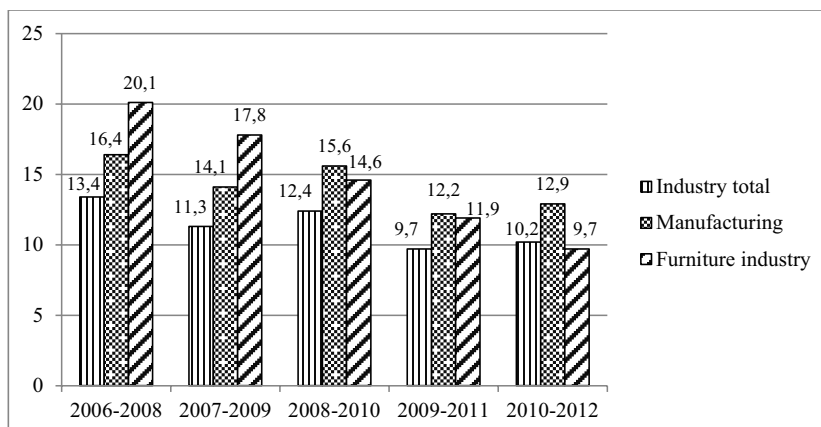


Chart 1. Share of net income from sales of new or greatly improved products in net income from sales in furniture industry, industrial processing and industry in total [%].

Source: own study on the basis of Statistical Yearbook of Industry 2011, p. 479-480, Statistical Yearbook of Industry 2011, p. 466-467.

CONCLUSIONS

In the years 2007-2012 internal outlays on research and development activity in industry in total increased almost twice as much from 1346.1 million PLN to 2729.7 million PLN. As regards furniture industry, the situation was reverse – there was a decrease from 66.1 million PLN to 39.7 million PLN.

In the analyzed period there was a slight rise in the level of outlays on innovative activity in industry (from 20222.9 million PLN to 20293.2 million PLN). At the beginning of the analyzed period outlays on innovative activity in furniture industry amounted to 477 million PLN. In consecutive years their level fluctuated. In 2012 the value of the outlays on innovative activity amounted to 512 million PLN and was by 93.2% higher than a year before. The primary objective of the funds was to purchase new machinery, technical devices, tools and means of transport.

The share of net revenue from the sales of new or significantly improved products in net sales revenue in industry in total decreased from 13.4% to 10.2%. In furniture industry the ratio in question decreased almost twice as much. In 2012 the share of net sales revenue from products connected with innovative activity in net sales revenue was at the level of 9.7% whereas at the beginning of the researched period it exceeded 20%.

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Streszczenie: Rynek meblarski w Polsce cechuje się dużą aktywnością eksportową, znacznie przewyższającą średnią przetwórstwa przemysłowego ogółem. W artykule zaprezentowano ekonomiczny wymiar działalności badawczo-rozwojowej prowadzonej przez przedsiębiorstwa meblarskie w Polsce. Dokonano analizy porównawczej rynku meblarskiego z przetwórstwem przemysłowym i przemysłem ogółem. Badaniami objęto lata 2007-2012, a podstawowe źródło materiału badawczego stanowiły Roczniki Statystyczne Przemysłu za ten okres.

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