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KEY DRIVERS BEHIND THE GROWTH OF THE POLISH PACKAGING MARKET IN 2005–2012 – MACROECONOMIC APPROACH

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Key words: packaging market, socioeconomic situation, production of packaged goods, sales revenue of the packaging industry, international trade in goods, demographic and market factors.

Abstract

The Polish packaging industry has been developing dynamically in recent years, and it is the largest packaging market in Europe with estimated value of EUR 6 billion, i.e. 2% of Poland's GDP. The key macroeconomic factors responsible for the growth of the Polish packaging market are: socioeconomic situation, international trade in goods, production of packaged goods, demographic and market factors. An analysis of the above factors points to the high potential and prospects of the Polish packaging market.

CZYNNIKI KSZTAŁTUJĄCE ROZWÓJ KRAJOWEGO RYNKU OPAKOWAŃ W LATACH 2005–2012 – UJĘCIE MAKROEKONOMICZNE

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Słowa kluczowe: rynek opakowań, sytuacja społeczno-gospodarcza, produkcja pakowanych towarów, produkcja sprzedana przemysłu opakowaniowego, międzynarodowa wymiana towarowa, czynniki demograficzne i rynkowe.

Abstrakt

W ostatnich latach krajowy rynek opakowań rozwija się bardzo dynamicznie. Jego wartość szacowana jest na ok. 6 mld euro, co stanowi 2% PKB. Jest on największym rynkiem opakowaniowym w Europie. Najważniejszymi czynnikami makroekonomicznymi kształtującymi rozwój krajowego rynku opakowań są: sytuacja społeczno-gospodarcza, międzynarodowa wymiana towarowa, rozwój produkcji pakowanych towarów oraz czynniki demograficzne i rynkowe. Analiza wymienionych czynników wykazała wysoki potencjał krajowego rynku opakowań, a także wskazała korzystne perspektywy jego dalszego rozwoju.

Introduction

The Polish packaging market has been developing dynamically in recent years, and it is the largest packaging market in Europe with estimated value of EUR 6 billion, i.e. 2% of Poland's GDP. The annual output of the packaging industry is estimated at 4 million tons. There are approximately 7,000 producers and distributors of packaging, packaging materials, packaging machines and equipment and waste management companies in Poland. The packaging industry employs around 200,000 people (*Rynek opakowań*... 2013). Packaging manufacturers rely on modern means of production and production technologies, and their products are highly competitive on foreign markets.

The rapid growth of the domestic packaging market can be attributed mainly to the technological progress made in the packaging industry as well as foreign investments in technologies that support the production of new types of packaging. Many strategic investors representing global corporations have moved their industrial operations to Poland due to low labor costs and the proximity of West European markets. The potential of the domestic packaging market has also been reinforced by the dynamic growth of retail and higher demand for new types of packaging.

The Polish packaging market is characterized by a relatively high degree of consolidation where 13% of manufacturers cater to 70% of domestic demand. The structure of the domestic packaging market is similar to sales organization structure. Nearly half of the key market players manufacture plastic packaging, 38% – paper and cardboard packaging, and 12% – metal, glass and wooden packaging. The vast majority of their output is sold on the domestic market. Approximately 20–30% of the output is exported, whereas the main imports are packaging machines and equipment (*Analiza MPC*... 2013).

The Polish packaging market shows highly promising prospects for the nearest future. If the market continues to expand at the present rate, its value will increase by 100% by 2020 (*ECOR*... 2013), and the Polish packaging industry will maintain its position of the European leader.

Materials and Methods

This article evaluates the Polish packaging market in 2005–2012 in view of macroeconomic drivers of growth.

In the literature, the domestic packaging market is assessed based on a wide range of indicators, which are classified into different thematic groups subject to research needs. One of such groups comprises economic indicators, which support the identification of macroeconomic factors that play a key role in the growth of the domestic packaging market (TKACZYK 2008, pp. 6–9):

1) socioeconomic situation in Poland,
2) international trade in goods,
3) domestic production of packaged goods,
4) demographic and market factors.

The above factors were analyzed based on information supplied by secondary sources, mainly the Ministry of Economy, Ministry of Foreign Affairs, Polish Information and Foreign Investment Agency, Packaging Research Institute and Central Statistical Office, as well as selected data published on the stat.gov.pl website. The analysis was performed based on indicators of sales structure and sales growth rate.

The analysis of macroeconomic factors influencing the packaging market supported an evaluation of market performance, which is a source of valuable information for market actors. The results of the analysis were used to determine the prospects for the development of the Polish packaging industry.

Results

Socioeconomic situation

The performance of the packaging market is largely determined by the *business cycle*. Selected data describing the socioeconomic situation of Poland in 2005–2012 is presented in Table 1.

Table 1

Selected data describing Poland's socioeconomic situation in 2005–2012

Indicator	2005	2006	2007	2008	2009	2010	2011	2012
Inflation [%]	103.4	101.0	102.5	104.2	103.5	102.6	104.3	103.7
Unemployment [%]	17.6	14.9	11.4	9.5	11.9	12.3	12.5	13.4
GDP growth rate(previous year = 100)	103.4	105.8	106.5	105.1	101.8	103.9	104.3	102.0
Total increase in consumption [%] (previous year = 100)	102.6	104.9	104.2	106.1	102.0	103.5	102.7	100.4
Increase in private consumption [%] previous year = 100)	101.8	105.2	105.2	105.7	102.1	103.2	103.1	100.5
Growth rate of domestic demand	102.5	107.3	108.7	105.6	98.9	104.6	103.4	100.1

Source: own elaboration based on *Rocznik Statystyczny RP* (2006–2013), raport Ministerstwa Gospodarki: *Dynamika realna PKB w latach 2005–2007* (2008) and *Analiza sytuacji gospodarczej Polski w 2012 r.* (2014).

In 2005–2007, Poland's socioeconomic situation stimulated the growth of the packaging industry. Poland's accession to the European Union in 2004 created new growth incentives. Economic activity peaked in 2007 when the annual GDP growth rate reached 6.5%. The upward movement of GDP levels resulted from rapidly growing domestic demand stimulated by the increase in employment. In 2008–2009, Poland's economic situation was affected by the global crisis.

The global financial crisis of 2007 slowed down Poland's economic performance in 2008–2009 (in 2009, GDP decreased by 3.3% relative to the previous year) and weakened the domestic packaging industry. The economic downturn decreased various industries' demand for packaging, and as the result, packaging manufacturers had to reduce their output (WASIAK 2013). The greatest drop of 15–25% was noted in the segment of packaging solutions for motor and construction industries, whereas the manufacturers of packaging for food processing, cosmetics and pharmaceutical industries were least affected by the crisis (decrease of 3–5%).

Despite the general slowdown in economic activity, Poland was one of the few European countries to remain on the path to economic growth (*Gospodarka...* 2012). The Polish economy was gradually rebuilt in 2010–2011. Poland's reported highly satisfactory results in comparison with other EU Member States, and it joined the group of European growth leaders[1]. Poland's high economic performance also accelerated the process of catching up with the EU average in terms of economic and social development. In comparison with 2007, Poland's GDP in 2012 exceeded the EU average by 18.2% and was the highest in the European Union (*Społeczno-gospodarcze...* 2014). The Polish economy was relatively unscathed by the global crisis and continued to report highly satisfactory results in comparison with other European countries, which minimized long-term threats for the domestic packaging industry. The crisis-induced loss of productive capacity and markets by European packaging manufacturers could create new opportunities for Polish packaging businesses in the near future.

The demand for packaging is directly proportional to GDP, and it is determined by domestic income levels. Packaging consumption in highly industrialized nations is much higher than in developing countries. The world's largest consumer of packaging is the United States, followed by Japan and Western Europe.

Western European countries are the natural reference point in analyses of the Polish packaging industry. In 2010, the value of consumed packaging per capita was estimated at EUR 320 in Western Europe and EUR 157 in Poland (WASIAK 2013). The gap between per capita packaging consumption in Poland

[1] According to Eurostat data, Poland ranked third in 2010 and fourth in 2011 in Europe with regard to its GDP growth rate.

and Western Europe decreased visibly in recent years[2]. Despite the noted progress, Poland will need another 20 years to catch up with Western markets, provided that the domestic packaging industry continues to grow at 7–8% per year. For the above growth to be attained, GDP has to increase at the annual rate of 4–6% (WASIAK 2013). Satisfactory levels of economic growth in the analyzed period suggest that the above goals could be realistically achieved in the coming years and that the Polish packaging market shows great promise.

International trade in goods

International trade in goods significantly influences the performance of the packaging market. Poland's foreign trade turnover in 2005–2012 is presented in Table 2.

Table 2

Poland's foreign trade turnover in 2005–2012 (in million EUR)

Year	Export	Import	Balance	Growth rate in % Previous year = 100		Foreign trade coverage ratio
				export	import	
2005	71,424	81,170	-9,746	119.6	113.8	-0.14
2006	87,926	100,784	-12,858	123.1	124.2	-0.15
2007	101,143	118,771	-17,628	115.0	117.8	-0.17
2008	116,243	142,447	-26,204	114.9	119.9	-0.22
2009	98,218	107,528	-9,310	84.5	75.5	-0.09
2010	120,373	134,188	-13,815	122.6	124.8	-0.11
2011	125,294	138,220	-12,926	104.1	103.0	-0.10
2012	131,433	139,481	-8,047	104.9	100.9	-0.06

Source: own elaboration based on the foreign *Rocznik Statystyczny Handlu Zagranicznego* (2007–2012), *Ocena handlu zagranicznego Polski w 2013 r.* (2013).

In 2005–2012, Poland's foreign trade balance was significantly influenced by the global crisis of 2007. The financial crisis led to major economic instability in many countries, including the EU – Poland's key trading partner[3], which lowered Poland's foreign trade coverage ratio.

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[2] According to The Future of Global Packaging, per capita packaging consumption in 2005 reached EUR 102 in Poland and EUR 300 in Western Europe.

[3] Polish exports to the EU were the cornerstone of Poland's economy in the analyzed period. In 2012, 75.8% of Polish exports were sold to the EU (*Rocznik Statystyczny Handlu Zagranicznego RP*. 2006–2013).

The deterioration in Poland's balance of payments in 2008, when the trade deficit reached a record high of EUR 26.2 billion, resulted mainly from a collapse of exports that persisted until the end of 2009. In 2009, exports decreased by 15.5%, and imports – by 24.5% from the previous year. Polish exports gradually rebounded in the following years, and a record high increase of 22.6% was noted in 2010 relative to the previous year. The rapid return to pre-crisis export levels was achieved with a significant reduction of imports, which were nearly EUR 8.3 billion lower in 2010 in comparison with 2008. The lowest trade deficit in excess of EUR 8 billion was reported in 2012, and it was 69.3% lower than in 2008. The foreign trade coverage ratio improved from -0.22 to -0.06.

The Polish balance of payments should improve in the coming years, mainly due to the revival of highly-developed West European markets, in particular EU markets which are gradually recovering from the global crisis[4]. According to experts, Polish exports increase by 3–4% with every 1% increase in the GDP of other EU countries. If the GDP growth of the EU Member States is restored to the average pre-recession level of 3%, Poland's deficit in trade with those countries will decrease in the coming years.

Production of packaged goods

The production of packaged goods should be closely correlated with the demand for packaging, which is generally expressed by the sales revenue of the packaging industry (Table 3).

Table 3

Sales revenue of the Polish packaging industry in 2005–2010*, in various market segments (current prices in million PLN)

Type of packaging	Year					
	2005	2006	2007	2008	2009	2010
Plastic packaging	4,918.9	5,403.1	6,314.2	6,929.4	7,772.9	8,433.0
Paper and cardboard packaging	4,682.5	5,275.2	6,172.4	6,657.1	6,388.6	7,473.7
Metal packaging	2,193.7	2,519.0	2,568.3	2,538.0	3,209.4	3,156.6
Glass packaging	1,178.9	1,197.8	1,247.5	1,168.9	1,147.6	1,237.5
Sales growth rate [%] (Previous year =100)	106.2	111.7	115.4	109.5	102.9	110.0

* Packaging industry sales data is not available for 2011–2012.
Source: own elaboration based on the *Rynek opakowań w Polsce* (on line, 2011).

[4] According to the European Commission, the European Union's GDP increased by 1.2% in 2012, and is expected to grow by 1.4% in 2013 and 1.7% in 2014 (*Analia MPC...* 2013).

The sales revenues of the Polish packaging industry increased by 9.2% during the period of economic prosperity in 2005–2007. The performance of the packaging market was slowed down in the following two years of economic downswing. In 2008, sales revenues decreased by 5.9% from 2007, and in 2009, revenues declined by 6.6% in comparison with 2008. The relatively rapid return to pre-crisis sales levels (7.1% increase in 2010 relative to 2009) indicates that the Polish packaging industry has high growth potential.

In the analyzed period, the increase in the sales revenue of the packaging industry was not evenly distributed across different segments of that market. Plastic, paper and cardboard packaging was in highest demand, and it was followed by metal and glass packaging. Plastic, paper and cardboard packaging segments are also expected to increase in the nearest future (*ECMA*... 2013). The increase in demand for plastic packaging will be driven mainly by economic factors (relatively low production costs), whereas the rise in the popularity of paper and cardboard packaging will be determined by environmental considerations (recycling options). The demand for metal packaging will gradually decline as metal packaging is replaced by cheaper plastic options (KRAWCZAK 2013, pp. 20–24). The trends on the market of glass packaging are difficult to forecast. The demand for glass packaging could decrease due to high glass production costs, then again, the interest in glass packaging could be revived on account of its low environmental impact (NOWAKOWSKI et al. 2013, pp. 74–78) and growing consumer demand for high-quality products (*Szkło*... 2013).

Demographic and market factors

Demographic and market factors also exert a major influence on the domestic packaging industry. They affect consumers' purchasing power and indirectly influence the performance of the packaging market. Selected demographic factors responsible for changes in the Polish population in 2005–2012 are presented in Table 4.

Population increase is highly correlated with economic growth. If the economic growth rate exceeds the increase in population, GDP per capita will grow. A comparison of the rate of population increase and the rate of economic growth in Poland (Table 1) points to a visible improvement in standards of living in 2005–2012. The above improvement stimulated the growth of the packaging market.

The rate of natural increase is the main driver of population change. Poland had a negative rate of natural increase in 2005, and the discussed indicator was close to zero in 2012. Countries with a low rate of natural

Table 4

Selected demographic factors in Poland in 2005–2012

Factor	2005	2006	2007	2008	2009	2010	2011	2012
Population in ’000	38,157	38,122	38,125	38,136	38,167	38,200	38,530	38,542
Population in age groups [%]:								
– pre-working age group (0–17)	20.6	20.1	19.6	19.3	19.0	18.8	18.5	18.3
– working age group (18–59/64)	64.0	64.2	64.4	64.5	64.5	64.4	64.2	63.8
– post-working age group (60/65+)	15.4	15.7	16.0	16.2	16.5	16.8	17.3	17.8
Birth rate per 1,000 population [%]	- 0.1	0.1	0.3	0.9	0.9	0.9	0.3	0.0
Average life expectancy (in years):								
– women	79.4	79.6	79.7	80.0	80.1	80.6	80.9	81.0
– men	70.8	70.9	71.0	71.3	71.5	72.1	72.4	72.7

Source: own elaboration based on the *Rocznik Statystyczny GUS* (2010–2012), *Informacja o sytuacji społeczno-gospodarczej kraju. Rok 2012* (2013), *Sytuacja społeczno-gospodarcza Polski w 2012 r.* (2013).

increase have ageing populations. A clear decrease in the size of the pre-working age population and an increase in the percentage of the post-working age population are observed in Poland. In 2012, the size of the post-working age group increased by 2.4% in comparison with 2005, and senior citizens accounted for 17.8% of the Polish population. Growing life expectancy is a positive demographic phenomena, but significant differences in life expectancy are noted between the sexes. In 2012, Polish women lived 8.3 years longer on average than men in comparison with 2005.

The observed changes in Poland’s demographic profile and the ageing of the Polish society will lead to changes in the structure of domestic demand for packaging in the near future. Based on the hierarchy of needs of elderly citizens, the highest increase in demand will probably be noted on the market of packaging for food and pharmaceutical products.

Market factors that exert the greatest influence on the packaging industry include globalization, progress in information technology and civilian logistics, development of self-service solutions in retail and the introduction of modern sales channels.

Globalization promotes development and progress, and it has highly positive implications for the packaging industry. Its impacts are often evaluated based on the benefits that follow from the transfer of IT systems and advanced technological solutions. The dynamic development of IT and civilian logistics is of particular importance for global market integration (WARCZYŃSKI 2009, pp. 23–26).

The introduction of automatic identification and data capture (AIDC) systems has revolutionized the market. Radio-frequency identification (RFID) is one of the most popular AICD solutions that caters to the growing demands of a modern market. RFID tags are used to monitor products and protect them against theft or forgery. Packaging is labeled with integrated circuits that communicate with monitoring devices via radio waves. Those solutions contribute to product identification and control, they increase product availability on the market, reduce costs, improve and speed up customer service.

The development of civilian logistics is largely dependent on the progress made in the IT sector. Advanced technologies increase the efficiency of goods flow and data communication. On European and global markets, the movement of goods throughout the world or within the supply chain is controlled by IT systems. The flow of goods is coordinated by members of the supply chain who enter into partnership agreements. The collaborating partners cater to market needs, deliver high service standards and strive to generate maximum profits for all members of the supply chain.

Globalization contributes to the development of self-service solutions in retail. The contemporary packaging industry has to cater to the needs of an increasingly globalized economy and self-service retail outlets that have a growing share of the market. The growth of selected types of retail stores in 2005–2012 is presented in Figure 1.

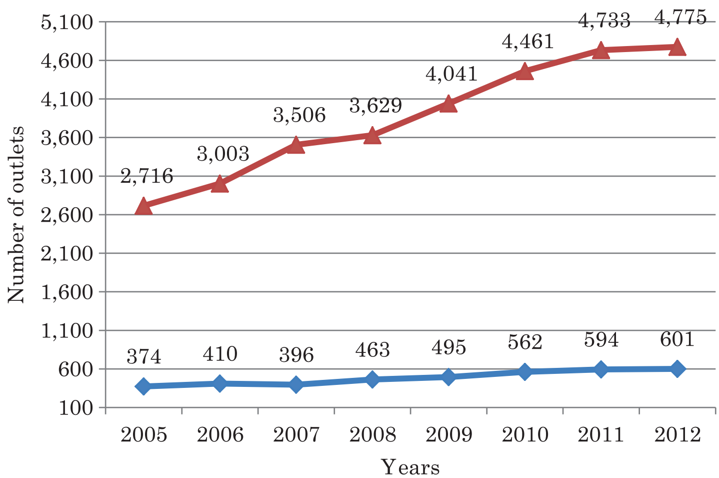

Fig. 1. Number of hypermarket and supermarket outlets in Poland in 2005–2012
Source: own elaboration based on: *Rynek wewnętrzny* (2006–2013) and *Rocznik Statystyczny* (2013).

In 2005–2015, the highest number of new outlets were opened by supermarkets (75.85% increase) and hypermarkets (60.75% increase). Discount chains are also expanding steadily in Poland[5]. Distributors are searching for

[5] The number of discount stores in Poland increased by 54.4% in 2005–2010 (Roland Berger Strategy Consultant. 2012, Retailer of the Year 2011).

modern sales channels that cater to the growing needs of contemporary consumers. E-commerce is one of such sectors, although e-commerce sales in Poland are merely a fraction of retail sales[6]. E-commerce is expanding rapidly due to the steady increase in the number of Internet users in Poland (Figure 2).

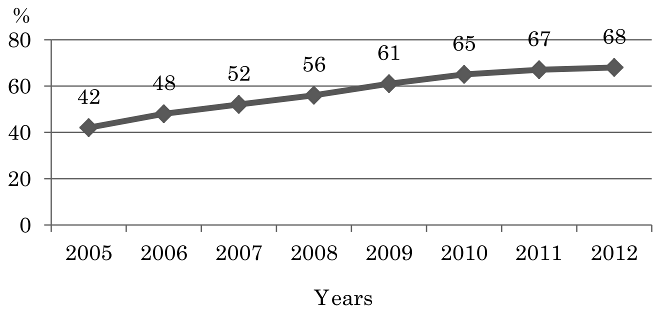

Fig. 2. Percentage of Internet users in Poland in 2005–2012
Source: own elaboration based on Statistics in Focus (on line).

The main barriers to e-commerce growth in Poland are the high cost of software for integrated IT systems and an absence of clear laws and regulations relating to e-commerce. Despite those obstacles, e-commerce is a highly promising sector, and Polish packaging manufacturers will develop dedicated packaging and distribution solutions for products traded over electronic systems.

Conclusions

1. In 2005–2007, Poland's socioeconomic situation stimulated the growth of the packaging industry. The global crisis of 2007 weakened the Polish packaging market. Packaging industry sales decreased in 2007–2009. The potential of the domestic packaging market was quickly restored with an improvement in Poland's economic performance. Sales revenues in the packaging industry rose at an astoundingly high rate of 7% per annum.

2. The global crisis of 2007 influenced Poland's balance of payments in 2005–2012. A high trade deficit in 2008 resulted from the crisis-induced collapse of exports. In the following years, Polish exports were quickly reinstated to pre-crisis levels, which led to a marked improvement in Poland's foreign trade coverage ratio.

[6] According to the Ministry of Economy, sales revenues on the e-commerce market accounted for only 3% of retail sales in Poland in 2011 (Comparative Analysis of the Center for Retail Research).

3. Sales revenues of the packaging industry increased in the analyzed period. Plastic, paper and cardboard packaging was in highest demand, and it was followed by metal and glass packaging. Similar trends in market demand are expected in the coming years.

4. The observed changes in Poland's demographic profile and the ageing of the Polish society will lead to changes in the structure of domestic demand for packaging in the near future. The highest increase in demand will probably be noted on the market of packaging for food and pharmaceutical products.

5. The performance of the Polish packaging market is significantly influenced by globalization, progress in information technology and civilian logistics, and the rapid development of e-commerce. In the coming years, Polish packaging manufacturers will develop innovative packaging and distribution solutions for products traded over electronic systems.

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