

## RETURN ON SALES FOR COMPANIES IN EASTERN POLAND

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Key words: return on sales, Eastern Poland, convergence, divergence.

### Abstract

This study has been performed in order to assess the return on sales for business enterprises in Eastern Poland, compared to companies in other Polish regions, and to explore how values of this metric have changed between 2007 and 2013. The findings can be summarized as follows: in 2007–2013, the gross return on sales generated by companies in the provinces of Eastern Poland, as well as elsewhere in the country, decreased. However, the dynamics of these changes varied greatly between individual provinces. Within the whole conglomeration of the Polish provinces, certain processes of internal convergence and divergence could be distinguished. Divergent processes were identified in two provinces located in Eastern Poland, namely the Lubelskie region and the Podlaskie region, while the other three provinces in the same part of Poland (Podkarpackie, Świętokrzyskie and Warmińsko-Mazurskie) were observed to undergo convergent processes.

## RENTOWNOŚĆ SPRZEDAŻY PRZEDSIĘBIORSTW W WOJEWÓDZTWACH POLSKI WSCHODNIEJ

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Słowa kluczowe: rentowność sprzedaży, Polska Wschodnia, konwergencja, dywergencja.

### Abstract

Celem badań była ocena poziomu rentowności sprzedaży przedsiębiorstw w województwach Polski Wschodniej na tle pozostałych regionów kraju oraz zmian, jakie zaszły w tym zakresie w latach 2007–2013. Wyniki przeprowadzonych analiz, można podsumować następująco. W latach 2007–2013, zarówno w województwach Polski Wschodniej, jak i w pozostałych regionach kraju, odnotowano spadek rentowności sprzedaży brutto przedsiębiorstw. Dynamika zmian zachodzących w tym zakresie w poszczególnych województwach była jednak bardzo zróżnicowana. W zbiorowości województw obserwowano tym samym równoległe zachodzące procesy konwergencji i dywergencji wewnętrznej. W dwóch województwach Polski Wschodniej – lubelskim i podlaskim, obserwowano procesy o charakterze dywergencji, w pozostałych trzech – podkarpackim, świętokrzyskim i warmińsko-mazurskim, procesy konwergencji.

## Introduction

Values achieved by macroeconomic indicators over the past several years seem to suggest that the provinces of Eastern Poland, in terms of their development, are gradually catching up with the rest of the country as well as with other European regions. In 2013, the GNP per capita in the provinces of this macro-region reached 48.4% of the EU average, whereas in the year 2000, it was no more than 35% of the same average. The improved macroeconomic situation of Poland's Eastern provinces can be evidenced by such measures as GNP growth dynamics, the economic structure measured by gross added value, the incomes of the population, the dynamics of investment inputs, the employment level and workforce productivity (*Analiza sytuacji...* 2015, p. 4–13). While absolute values of some indicators are still low, the degree to which they have changed is significant enough to claim that the distance between the economic situation of Eastern Poland and the average economic position of the whole of Poland is diminishing.

However, a question arises whether the tendency mentioned above is observable with respect to the financial condition of business entities or, more precisely, to their return on sales? Not long ago, business enterprises situated in Eastern Poland did not generate revenue as high as what was earned by businesses operating elsewhere in Poland, and they were characterized by a relatively lower return on sales (*Raport o stanie...* 2007, p. 55–205). Are the dynamics of change that have taken place since then powerful enough to diminish the economic distance between Eastern Poland and the rest of the country? To answer this question, the author pursued research that set its aim to assess the return on sales for companies in Poland's Eastern provinces, and compare those returns with the other regions of Poland. Another objective has been to trace the changes which occurred between 2007 and 2013.

The study included an appraisal of the level and dynamics of change in gross return on sales for companies in the Polish provinces located in the east of the country. The results were juxtaposed with Poland's average return on sales and results obtained in other parts of Poland. Additionally, the provinces were divided into groups with a similar level of gross return on sales. Finally, the nature of the internal processes underlying the value of gross return on sales was analyzed in all provinces and identified as having a convergent or divergent character.

The analysis was performed at the level of the administrative provinces in Poland, which is the NUTS II division level. The analysis was conducted on a full sample of business enterprises, which keep either general ledgers or revenue and expenditure registers. All companies employed at least 10 people. In light of the research methodology proposed by the Central Statistical Office

(GUS) in Poland, these enterprises were non-financial companies. Therefore, institutions such as banks, insurance companies, stock brokerages, investment services, pension societies, the National Investment Funds, higher education schools, cultural institutions acting as a legal person, and family farms in agriculture were excluded from the analysis (*Bilansowe wyniki finansowe...* 2014, p. 3, 8).

The time frame of the research spanned the years 2007 and 2013, which coincided with the entire first EU financial perspective, during which considerable funds were addressed to the development of Eastern Poland.

The investigation employed many methods of analysis, including a review of the literature, the analysis of reference sources, quantitative methods and the method of induction.

### **Return on sales – foundations**

The idea of ‘profitability’ originates from the concept of ‘profit’, which in the broadest sense signifies a gain on capital. Profitability is generally understood as a situation where an income earned surpasses the costs of earning this income. In other words, it means earning a profit. Profitability is associated with a positive financial result (a gain). The opposite of profitability is unprofitability, which appears when the company’s results are negative, i.e. they suffer a loss (*Analiza ekonomiczna...* 2013, p. 281). Thus, profitability reflects a company’s ability to generate a gain or, if phrased differently, it manifests the extent to which the company’s operation is profitable (*Analiza finansowa...* 2010, p. 43).

Profitability ratios provide information about the operating efficiency of a company in a time period examined, and implicate whether the company’s activity helps to fulfill the main objectives of every business undertaking (GABRUSEWICZ 2014, p. 296, 297). The profitability ratios, often referred to as the rates of return, are highly diverse – both numerators and denominators can assume different forms. For example, corresponding to the vertical layout of gain and loss accounts, the profit from sales, operating profit, result on ordinary activities, gross profit or net profit can be considered as a financial result. The denominator will correspond to what shapes the above result, which are the company’s assets. The values put in the denominator represent three types of return: return on assets, return on sales and return on equity (SIERPIŃSKA, JACHNA 2007, p. 195).

The fundamental condition that guarantees a company’s successful operation is to sell products or services. Each company strives to achieve the best results from sales, and for any business enterprise, the key area is its ordinary

activities. A well-managed company secures a surplus revenue over the costs of obtaining that revenue, thus sustaining the company's profitability (KĄTNIK 2011, p. 144). The return on sales ratios are applied to measure a company's profitability. They are a group of metrics derived from the sales value and the profit thus generated; hence they are able to reveal whether or not sales are profitable (GRZENKOWICZ et al. 2007, p. 207). The positive return on sales is an important measure to be considered when evaluating the profitability of companies. Return on sales is also an important aspect in micro- and macro-economic profitability evaluations. Profitable sales cover the running costs of operating a business while additionally generating funds for its further development. This is extremely important for both a company's holders and for the region in which the company is situated. The growth of the companies translates into the development of the region in question (FARELNIAK, WIERZBICKA 2013, p. 135).

The following metrics are most often used to analyze profitability on sales attained by companies:

1. Return on sales (operating profitability) – it provides information about the financial results a company generates from its principal operation.

$$\text{return on sales} = \frac{\text{profit on sales}}{\text{net revenues from sales of products, goods and materials}} \times 100\%$$

The return on sales ratio is the most synthetic index among all measures applied to the profitability on sales. It tells us about the profitability arising from the company's principal operating activity, from sales, which is the purpose for which the company was set up and which is the company's driving force. The value of this index depends on (GABRUSEWICZ 2014, p. 317–319):

- the number of products sold,
- the structure of a whole range of products of different earning capacity,
- pricing policy,
- own costs of sales per unit.

The value of this index also depends on the type of company and the specific character of the business branch in which it operates.

2. Gross return on sales (gross turnover) – concerns overall profits from all of the company's activities before tax and other obligatory encumbrances.

$$\text{gross return on sales} = \frac{\text{gross profit}}{\text{net revenues from on sales of products, goods and materials} + \text{other operating revenues} + \text{financial revenues} + \text{extraordinary gains}} \times 100\%$$

The gross return on sales is the most comprehensive return on sales ratio. It specifies the percentage of earned profit before tax, which is the real gain that is achieved before the tax due is deducted (KAŃNIK 2011, p. 145). It encompasses revenues from the total ordinary activity of a company, corrected by the balance of extraordinary profits or losses. This measure is broadly used to assess the profitability of companies; it is also employed to make comparisons between companies in different branches or countries because it does not respond to changes in income taxation (GRZENKOWICZ et al. 2007, p. 209). This ratio was employed in the current study to make an assessment of the profitability of sales achieved by companies in different regions.

3. Net return on sales – specifies the contribution of net profit to the total revenue of a company.

$$\text{net return on sales} = \frac{\text{net profit}}{\text{net revenues from on sales of products, goods and materials} + \text{other operating revenues} + \text{financial revenues} + \text{extraordinary gains}} \times 100\%$$

The higher the ratio, the bigger the profit earned by the company's owners from all types of activity. In other words, this ratio shows the operating profitability having accounted for capital operations and the structure of financing and taxes (KAŃNIK 2011, p. 146). If this ratio is high enough, the company stands a better chance of survival if it is forced to temporarily set lower prices or cover higher costs of making products or providing services (KORNACKI 2008, p. 62).

### **Gross return on sales for companies in Eastern Poland**

This appraisal of the profitability on sales attained by companies located in Eastern Poland was investigated from 2007–2013. It included the following number of business entities (Tab. 1).

In 2007–2013, the number of companies in all the provinces situated in Eastern Poland increased, but the dynamics of this increase were variable. In just one province, i.e. Podkarpackie, the number of companies increased more dynamically than the average increase observed in Poland. As a result, the share of businesses from this province compared to the total number of companies in Poland rose from 4.2% in 2007 to 4.4% in 2013.

Table 1

Number of businesses in provinces located in Eastern Poland in 2007–2013

Specification	Number of businesses in provinces		Share of the total number of businesses per province [%]		Change between 2007 and 2013	Dynamics of change from 2007–2013
	2007	2013	2007	2013		
Lubelskie	1,965	2,130	4.1	3.8	165	1.084
Podkarpackie	2,045	2,469	4.2	4.4	424	1.207
Podlaskie	1,183	1,301	2.5	2.3	118	1.100
Świętokrzyskie	1,241	1,316	2.6	2.3	75	1.060
Warmińsko-Mazurskie	1,586	1,630	3.3	2.9	44	1.028
Poland	48,165	56,432	100	100	8267	1.172

Source: the author, based on: *Bilansowe wyniki finansowe...* (2008, 2014).

In the other four provinces analyzed, the number of businesses increased less dynamically when compared to the whole of Poland, which is why their contribution to the total number of companies decreased and continued to be among the lowest in Poland.

With respect to the gross return on sales for the analyzed business entities, the following changes occurred from 2007–2013 (Tab. 2).

Table 2

Gross return on sales for companies in Eastern Poland from 2007–2013

Years	Value of gross return on sales in provinces (in %)					Poland
	Lubelskie	Podkarpackie	Podlaskie	Świętokrzyskie	Warmińsko-Mazurskie	
2007	6.5	5.8	5.3	8.3	5.0	6.1
2008	4.9	3.6	3.3	7.3	2.8	4.1
2009	4.1	4.8	3.8	4.8	3.4	4.9
2010	4.3	4.3	3.3	5.0	4.5	5.2
2011	5.8	4.4	3.2	4.9	3.4	4.8
2012	4.8	3.9	2.7	3.5	3.1	4.3
2013	5.2	5.6	3.3	2.8	4.1	4.4
Change from 2007–2013 (in percentage points)	-1.3	-0.2	-2	-5.5	-0.9	-1.7
Dynamics of change in 2007–2013	0.80	0.97	0.62	0.34	0.82	0.72

Source: the author, based on data published by the Central Statistical Office in Poland (GUS) in: *Bilansowe wyniki finansowe...* (2008–2014).

Due to the global financial crises, the gross return on sales declined in all the provinces of Eastern Poland, which was a trend throughout the whole country. The dynamics of change during that time period were highly diverse. The highest level of gross return on sales among all of the analyzed provinces, which was much higher than the average for the whole of Poland, was achieved by Podkarpackie in 2013. The strong position of this province is the result of a very small decrease in the gross return on sales compared to the one recorded in 2007. The level of gross return on sales in Podkarpackie decreased by 3% over the entire time period; whereas, the average decrease for Poland reached 28%. Two other provinces in Eastern Poland, namely Warmińsko-Mazurskie and Lubelskie, recorded a decrease in gross return on sales that was lower than the country's average: 18% and 20%, respectively. Thus, the position of these provinces improved relative to the other Polish provinces, but less significantly than in the case of Podkarpackie.

Importantly, two provinces lying in Eastern Poland – Podlaskie and Świętokrzyskie – experienced a much larger decrease in the level of gross return on sales than the average decline for the whole of Poland. The most severe decrease in gross return on sales was reported in Świętokrzyskie, where the value of this measure fell from 8.3% in 2007 to 2.8% in 2013, which signifies a 66% decrease. Such a considerable negative change in the dynamic meant that the province fell from the very high position it occupied in 2007 (2<sup>nd</sup> in Poland) to the last position in 2013, and was therefore classified as belonging to the group of provinces with a very low gross return on sales (Fig. 1).

The categorization mentioned above was performed with the standard deviations method<sup>1</sup>. In line with its guidelines, the provinces were classified into four typological groups. The interval borders were established according to values of the arithmetic mean of gross return on sales for the total of provinces and the value of the standard deviation of this index in 2013. The set of all analyzed objects was divided into the following four groups:

1. Group with **very high** gross return on sales, comprising objects with values of this ratio in the range of  $R_0 \geq 5.32\%$ ;
2. Group with **high** gross return on sales, comprising objects with values of this ratio in the range of  $5.32\% > R_0 \geq 4.44\%$ ;
3. Group with **low** gross return on sales, comprising objects with values of this ratio in the range of  $4.44\% > R_0 \geq 3.57\%$ ;
4. Group with **very low** gross return on sales, comprising objects with values of this ratio in the range of  $R_0 < 3.57\%$ .

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<sup>1</sup> More on this subject in: KUNASZ (2006), p. 131–139.

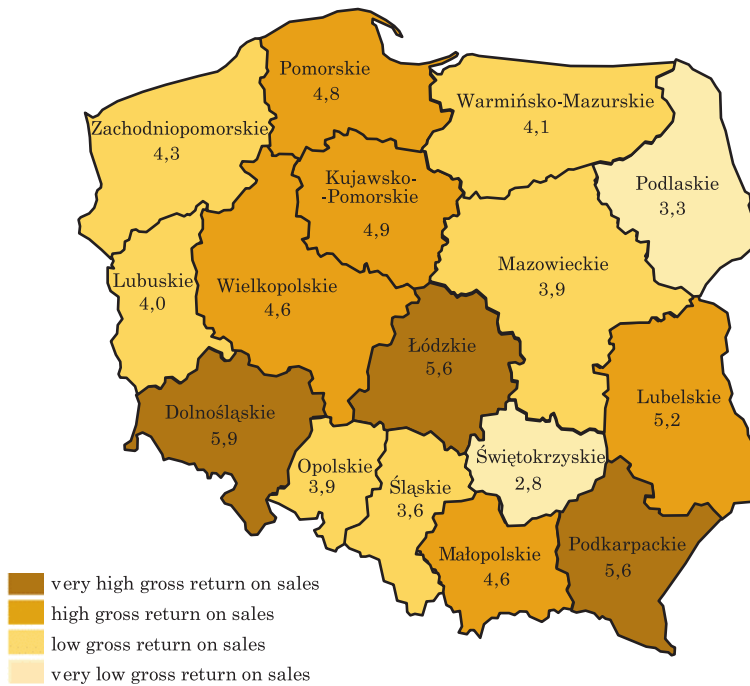


Fig. 1. Results of the categorization of provinces according to the gross return on sales for companies in 2013

Source: the author, based on *Bilansowe wyniki finansowe...* (2014).

Apart from Podkarpackie, mentioned previously, the group characterized by very low gross return on sales contained one more province situated in Eastern Poland, namely the Podlaskie province. The Warmińsko-Mazurskie province was classified as belonging to the group of provinces with low gross return on sales, while Lubelskie fell into the category comprising provinces with high gross return on sales. Significantly, one of the Eastern Polish provinces, i.e. Podkarpackie, was categorized into the group with very high gross return on sales. There were just two other provinces in this category: Dolnośląskie and Łódzkie. Noteworthy is the fact that the regional variation in the gross return on sales ratio increased slightly between 2007 and 2013, implicating that the conglomeration of Polish provinces became less heterogeneous in this respect. This finding is confirmed by an increase in the value of the variability factor, which was 18% in 2007 but grew to 20% in 2013.

Given the initially diverse situation of these provinces, the variable dynamics of changes occurring during the time period analyzed in particular provinces led to the development of two parallel processes being observed, such as internal convergence and divergence among the provinces. In order to identify these processes, all the provinces were grouped according to their



Table 3  
Classification of the provinces according to the ongoing processes affecting the levels of gross return on sales achieved by companies in 2007–2013

Specification		Gross return on sales in 2007 relative to the country's average	
		lower than average	higher than average
Dynamics of change in gross return on sales from 2007–2013, in relation to average dynamics of change in the same time period	lower than average	divergence (marginalization effect)	convergence (deceleration effect)
		Lubuskie Podlaskie Śląskie	Mazowieckie Opolskie Świętokrzyskie
	higher than average	convergence (catching-up effect)	divergence (distancing effect)
		Kujawsko-Pomorskie Małopolskie Podkarpackie Pomorskie Warmińsko-Mazurskie Wielkopolskie Zachodniopomorskie	Dolnośląskie Lubelskie Łódzkie

Source: the author, based on: *Bilansowe wyniki finansowe...* (2008, 2014).

value of the gross return on sales in 2007 and the dynamics of its changes from 2007 to 2013. The results are presented in Table 3.

In most provinces, the changes which took place between 2007 and 2013 concerning the gross return on sales assumed the character of a convergent-like process. In seven provinces, this convergence can be termed as the 'catching-up' effect, while in three other provinces it was more similar to a 'deceleration' effect. Among the provinces in which convergence resembled an effect of 'catching up', there were two provinces lying in Eastern Poland. They were Podkarpackie and Warmińsko-Mazurskie, but there were also provinces from other Polish regions, namely Małopolskie, Pomorskie and Wielkopolskie. In 2007, the gross return on sales in these provinces was much below the country's average, but owing to much higher dynamics of change in this respect, their situation in relation to the others provinces has improved. The other type of convergence was observed in such provinces as Mazowieckie, Opolskie and Świętokrzyskie, due to a large decrease in the gross return on sales, stronger than the country's average. These provinces occupied worse places when ranked with respect to the return on sales. The Opolskie province, for example, was the leader in 2007, but fell to 12<sup>th</sup> place in 2013. Another province, Świętokrzyskie, was in the last place in 2013, whereas in 2007 it occupied the second position.

Six provinces, including two from Eastern Poland, underwent the process of regional divergence over the same time period. Such provinces as

Dolnośląskie, Lubelskie and Łódzkie were attaining an increasing level of gross return on sales compared to Poland's average; hence they were distancing themselves from the other Polish provinces. On the other hand, Lubuskie, Podlaskie and Śląskie were characterised by an increasingly lower gross return on sales than the country's average, which meant that their economic distance from other parts of Poland increased. For instance, in the Podlaskie province, the gross return on sales in 2007 was lower than the average value of this ratio for all Polish provinces by 14%, whereas in 2013 it was 26% lower. Unfortunately, it may indicate some marginalization of this region.

### Summary

In 2007–2013, the level of the gross return on sales achieved by companies decreased, both in Eastern Poland and in the whole country. However, the dynamics of respective changes in individual provinces was highly varied. Three provinces located in Eastern Poland: Lubelskie, Podkarpackie and Warmińsko-Mazurskie, recorded a smaller decrease in gross return on sales than the average for the whole country, hence their situation relative to the other Polish regions improved. In the case of Podkarpackie, the improvement was large enough to move this province from the 9<sup>th</sup> position it occupied in 2007 in the ranking list of all Polish provinces to the second place in 2013. The return on sales decreased in this province during the time period analyzed by just 0.2 percent point (from 5.8% to 5.6%), whereas the average return on sales in the whole of Poland over the same time period decreased by 1.7 percent point (from 6.1% to 4.4%). Quite importantly, the decrease in the return on sales recorded in the other two provinces of Eastern Poland was much higher than Poland's average decrease, which means that the position of these provinces relative to the rest of the country deteriorated. The most severe decline in the value of gross return on sales occurred among the companies situated in the province Świętokrzyskie. The gross return on sales noted there went down by as much as 5.5 percent point (from 8.3% in 2007 to 2.8% in 2013), as a result of which this region lost its high, second position in the profitability rank of Polish provinces and fell to the last place.

In conclusion, two parallel processes characterized by internal convergence and divergence, including marginalization, appeared in the Polish provinces. Divergence-like processes were observed in six provinces, including two located in Eastern Poland, such as Podlaskie and Lubelskie. The remaining nine provinces in Poland experienced the processes that resembled convergence, but their actual character could be termed as either the 'catching-up' effect or the 'deceleration' effect. Convergence noticed in the provinces of Podkarpackie

and Warmińsko-Mazurskie corresponded to the 'catching-up' trend, although it proceeded at different rates. In the province Podkarpackie, the last region classified as belonging to Eastern Poland, values of the return on sales earned by companies were becoming worse than the country's average values of this ratio. Thus, the processes which occurred in this province should be termed as 'deceleration'.

In light of the above findings, it is difficult to state firmly whether the provinces situated in Eastern Poland have diminished the economic distance from other Polish regions in terms of the profitability of sales achieved by companies. The changes that did occur in this area within the three provinces, enabled them to score higher in the ranking list of Polish provinces and to diminish the distance from the country's average value of this measure. Meanwhile, the gap between the other two provinces and the rest of Poland grew deeper. Thus, considering the average return on sales of all the provinces in Eastern Poland and comparing it to the average for the remaining Polish provinces, it should be concluded that the overall situation of Eastern Poland in this aspect has worsened. In 2007, the average return on sales in the provinces of Eastern Poland was lower than the country's average by just 0.3%, whereas in 2013 it was lower by as much as 7.8%. The provinces of Eastern Poland continue to be characterized by a lower profitability of companies than the rest of the country and, unfortunately, the economic distance between these five provinces and the other Polish regions increases.

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