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ANALYSIS AND PROFITABILITY ASSESSMENT OF POLISH CONSTRUCTION COMPANIES THREATENED WITH BANKRUPTCY

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Abstract

This paper presents analysis of profitability indicators of Polish construction companies threatened with bankruptcy compared to analogous indicators obtained by Polish construction entities as a whole.

The analysis concerns companies generating positive and negative financial results (both EBIT and net financial results). Moreover, the operating profitability ratio, return on sales, and return on total assets ratios have been verified.

The analyses have been conducted using financial reports of Polish construction companies which went bankrupt in 2013, as well as financial data of construction sector participants as a whole.

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Keywords: construction companies, profitability, bankruptcy

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Introduction

The aim of this paper is to evaluate the financial results and profitability of Polish construction companies threatened with bankruptcy. The selection of the research sample results from the fact that construction entities constitute one fifth of declared bankruptcies in Poland. As an example, in 2013 these accounted for 24,1% of all insolvencies and in 2015 – 21,6% (http://www.coface.pl). The main research hypothesis assumes that among construction enterprises threatened with bankruptcy dominate entities generating net losses as well as operating losses in the year preceding their bankruptcy.

The article shows results of research concerning return of sales and return on total assets ratios (based on EBIT and net financial results) in construction companies facing financial problems in periods of one, two, three and four years prior to bankruptcy announcements.

The results have been compared with corresponding data for the construction sector in Poland. The analysis is based on officially recognized bankruptcy cases which occurred in 2013 (http://www.coface.pl).

Profitability of the company on a theoretical basis

In the theory of neoclassical economics, the main purpose of a company's existence was to maximize the financial result, and thus to achieve high profitability ratios. The financial result, as indicated by K. Grabiński (2016, pp. 28-32), is an accounting measure of the entity's economic profit. At present, however, attention is drawn to the fact that the financial result as a measure of the economic efficiency of an enterprise is burdened with many constraints and it is easy to shape it within the broadly defined accounting policy of an enterprise. Currently in the literature on the subject the increase of value is indicated as the overriding long-term goal of the business unit (Dresler, 2014, pp. 12-14; Kędzior, 2016; Maślanka, 2007; Maślanka, 2009b; Popławski & Kaczmarczyk, 2016).

Taking into consideration the weaknesses of the profit and loss account (e.g. the accrual principle, the different accounting policies used by business entities in practice), it must be said that the long-term increase of the entity value is not possible without positive financial results.

The subject of profitability of enterprises in the Polish economic realities and analysis of factors shaping them, was discussed broadly in a publication edited by Z. Dresler (2014). The book includes the results of research presenting how the rate of return achieved by businesses is affected by: economic situation, ownership, competitiveness, exports, financial liquidity (vide: Maślanka, 2003; Maślanka, 2009a) and taxation.The subject of external factors determining the profitability of business entities is addressed in the article by A. Misztal (2015). The author indicates that an individual approach to each entity is necessary. She emphasizes that among external determinants, the level of GDP, the formation of basic interest rates in the economy and the costs of wages in the enterprise sector are extremely important. The impact of labor costs on the profitability of enterprises was also presented in T. Maślanka (2010).

Analysis of the profitability of Polish companies in individual sectors during the economic crisis was presentedin a publication by M. Molo (2015). The author noted the following conclusions:

a) in 2008-2012 there was a visible deterioration of the profitability ratios in all analysed sectors of the economy,

b) in the whole analysed period (2006 - 2012), the largest share of loss-making entities occurred in construction and mining, on the other hand, the average values of the verified profitability ratios in these sectors were higher than the average across the enterprise sector.

Determinants of profitability in particular types of economic business activity in Poland were also presented in the publications of the following authors: A. Bieniasz (2015), K. Gałązka, W. Janik (2013), D. Zawadzka, E. Szafraniec-Siluta (2015), Z. Gołaś (2008), M. Bednarczyk (2007).

Analysis and assessment of the profitability of business entities depending on the size of the enterprise was discussed in the publications of the following authors: M. Ratajczak (2009, 2010), Z. Gołaś (2010).

For consideration of the profitability (and effectiveness) of management in companies threatened with bankruptcy, it is necessary to refer to the publications of M. Sierpińska and D. Wędzki (2002, p. 7). Authors referring to the experiences of Western European countries indicate that the main cause of bankruptcy of small and medium-sized enterprises is a problem with

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liquidity rather than the generating of losses. According to authors in France 60% of the bankrupt companies are profitable, while in the UK the proportion of such entities is even higher.

The analysis and evaluation of selected aspects of the management of Polish construction companies has been addressed in the publication by T. Maślanka, I. Mazur-Maślanka (2017), and A. Banach-Kobyra (2017).

Research sample and applied research methods

The financial data used in the analysis of 6,257 construction companies were taken from the Amadeus database. Among the analysed companies 298 entities were identified - at the moment of analysis these companies were bankrupt. Identification of bankruptcy in the legal sense was based on statements from the National Court and Commerce Bulletin (Monitor Sądowy i Gospodarczy)[1].

In the case of 69 bankruptcies identified in 2013, bankruptcy proceedings were initiated. In most cases, they ear of commencement of bankruptcy proceedings coincided with the year in which the company was declared bankrupt.

In a few cases the initiation of bankruptcy procedures took place in late autumn 2013 and the bankruptcy announcement took place at the beginning of the year 2014. In such cases the moment of bankruptcy was taken in the analysis as the year of commencement of bankruptcy proceedings.

Finally, the financial data of the identified bankruptcies during the last four years prior to bankruptcy proceedings were assessed for the years 2009-2012 and compared to similar data for all construction companies (see below).

The number of enterprises with positive and negative financial results in both groups of construction companies for 2009-2012 was analysed. Moreover, the conducted research compares mean[3] values and medians of selected profitability ratios in both analysed groups of construction companies.

Data analysed:

a) return on sales ROS (net financial result/total sales),

b) operating profitability of sales ratio (operating result/total sales),

c) return on assets ROA (net financial result/total assets),

d) operating profitability of assets ratio (operating result/total assets).

The methodological aspects of the analysis and assessment of profitability of enterprises are presented in K. Stępień (2013).

Structure of the research sample

The tables presented below show the classification of the analysed construction companies due to generated profit or loss from operating activities and net financial results.

The period analysed (2009 - 2012) are the years of the crisis in the economy, particularly in the construction industry. The poor financial condition of the analysed companies is reflected in the significant share of construction companies generating operating losses. Between 2009 and 2011, the share of these companies fluctuated around 27% and increased to 35% of all analysed units in 2012. Among later bankruptcies, the percentage of companies generating operating losses in 2009-2011 increased steadily. The significant change occurred in 2012, where in the later bankruptcies group,

1 National Court and Commerce Bulletin announcements can be found at: http://www.portal-bankrut.pl.

2 The number of analyzed entities is different due to the lack of availability of part of the financial data.

3 The analysis uses a trimmed mean discarding 5% of the outmost ratio values.

Chart 1: Construction companies subject to analysis

Specification	2009	2010	2011	2012
Total number of construction companies	6 255	6 006	5 921	5 930
Number of construction companies which went bankrupt in 2013[2]	69	69	67	60

Source: Own elaboration

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Chart 2: Number of analysed construction companies generating positive / negative operating results (EBIT)

Specification	2009	2010	2011	2012
Number of entities with positive operating results	4 601	4 381	4 206	3 851
Number of entities with negative operating results	1 631	1 598	1 679	2 033
Total	6 232	5 979	5 885	5 884
Number of entities with positive operating results (%)	73,8	73,3	71,5	65,4
Number of entities with negative operating results (%)	26,2	26,7	28,5	34,6

Source: Own elaboration

Chart 3: Number of analysed bankrupt construction companies generating positive / negative operating results (EBIT)

Specification	2009	2010	2011	2012
Number of entities with positive operating results	55	51	44	14
Number of entities with negative operating results	14	18	23	46
Total bankruptcies	69	69	67	60
Number of entities with positive operating results (%)	79,7	73,9	65,7	23,3
Number of entities with negative operating results (%)	20,3	26,1	34,3	76,7

Source: Own elaboration

only 23% achieved positive operating results.

The above fact illustrates the problems that occurred in these entities not only in terms of cash flow (liquidity and financial solvency) but also connected with the accrual principle. In most cases, increasing losses led to negative value of own equity.

The presented data confirm the research hypothesis formulated at the beginning that among construction entities, unlike other types of business (M. Sierpińska, D. Wędzki 2002), the majority of those threatened with bankruptcy generate negative financial results (both operational and net).

By analysing the structure of the surveyed construction companies through the prism of the net financial result, a successive decline in the participation of entities generating income can also be noted.

Chart 4: Number of analysed construction companies generating positive / negative net financial result

Specification	2009	2010	2011	2012
Number of entities with positive net financial result	4 576	4 385	4 099	3 899
Number of entities with negative net financial result	1 652	1 590	1 778	1 976
Total	6 228	5 975	5 877	5 875
Number of entities with positive net financial result (%)	73,5	73,4	69,7	66,4
Number of entities with negative net financial result (%)	26,5	26,6	30,3	33,6

Source: Own elaboration

Chart 5: Number of analysed bankrupt construction companies generating positive / negative net financial result

Specification	2009	2010	2011	2012
Number of entities with positive net financial result	51	51	38	13
Number of entities with negative net financial result	18	18	28	47
Total	69	69	66	60
Number of entities with positive net financial result (%)	73,9	73,9	57,6	21,7
Number of entities with negative net financial result (%)	26,1	26,1	42,4	78,3

Source: Own elaboration

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Between 2011 and 2012, entities which generated losses represented more than 30% of the total analysed companies. In the case of later bankruptcies, two years before their bankruptcy, the share of net loss generating companies significantly increased.

Profitability of sales analysis

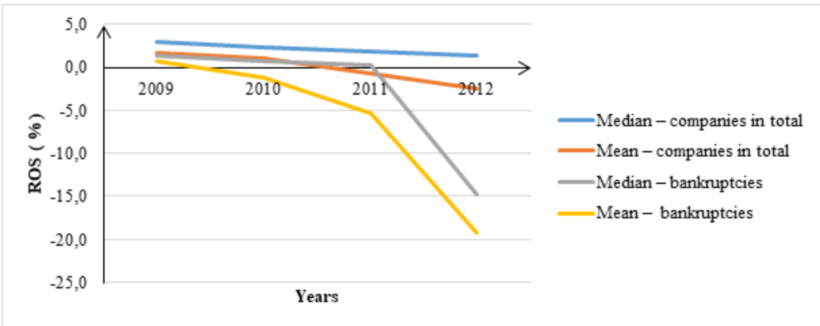
The following tables and graphs present statistical data describing the return on sales and the operating profitability of sales ratio among construction companies which went bankrupt in 2013, compared to the corresponding data for all analysed construction

Chart 6: Return on sales for period of four years before bankruptcy among the analysed construction companies (%)

Specification	2009	2010	2011	2012
Median – companies in total	3,0	2,4	1,9	1,4
Mean – companies in total	1,6	1,0	-0,7	-2,5
Median – bankruptcies	1,4	0,6	0,2	-14,7
Mean – bankruptcies	0,8	-1,2	-5,4	-19,2

Source: Own elaboration

Graph 1: Return on sales for period of four years before bankruptcy among the analysed construction companies (%)



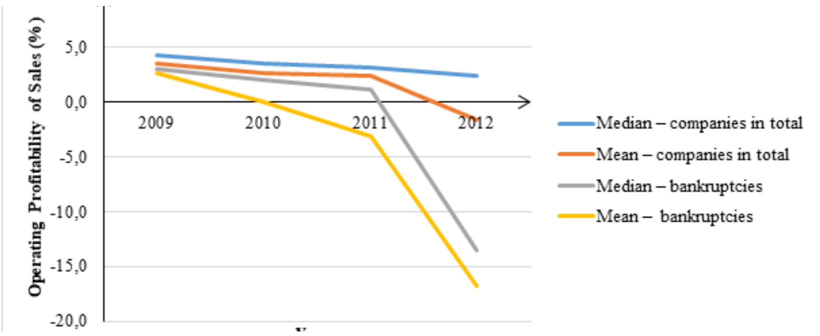
Source: Own elaboration

Chart 7: Operating profitability of sales ratio for period of four years before bankruptcy among the analysed construction companies (%)

Specification	2009	2010	2011	2012
Median – companies in total	4,2	3,4	3,1	2,4
Mean – companies in total	3,5	2,6	2,4	-1,6
Median – bankruptcies	3,0	2,0	1,2	-13,6
Mean – bankruptcies	2,6	0,0	-3,2	-16,9

Source: Own elaboration

Graph 2. Operating profitability of sales ratio for period of four years before bankruptcy among the analysed construction companies (%)



Source: Own elaboration

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companies.

Sales profitability ratios (based on net financial result and the result from operating activities) in the years 2009-2012 showed a down ward trend. The average value of return on sales (based on net financial results) of all construction companies in 2010 was 1.0%. In the next two years, the index reached negative values of -0.7% and -2.5%, respectively.

The deteriorating financial condition of the construction industry in the analysed years may be shown by the share of net loss generating entities, which was 12.1% in 2006, 26.2% in 2009, 33,6% in 2012.

The statistics for sales profitability ratios (median and mean) for later bankruptcies by the end of 2011 only slightly differed from the corresponding statistics for all analysed construction companies. A significant drop occurred in 2012, when the median net profitability index fell to the level -14.7% and average to -19.2% (in the case of the operating result ratio it was -13.6% and -16.9% respectively). On the other hand, it should be emphasized that even in the last year before bankruptcy, in the case of some of the later bankruptcies, net sales profitability ratios were above the median value for all construction companies (in 2012 it was 11.7%).

Analysis of the profitability of assets

The following tables present chosen statistical data for the period 2009-2012 describing the return on assets among construction companies which went bankrupt in 2013 compared to the corresponding data for all analysed construction companies.

The analysed profitability of assets ratios among the construction companies as well as the profitability of sales ratios in the discussed years were characterized by a downward trend due to the deteriorating economic situation in the construction sector during that period. However, it should be noted that the profitability of assets ratios were characterized by greater volatility compared to the profitability of sales ratios.

Moreover, in the years 2009-2011, the statistics concerning the profitability of assets for all of the analysed entities were different than the corresponding statistics describing the profitability of sales. During this period, the average value of both profitability of assets ratios was above their median. The reverse situation took place in the case of profitability of sales ratios.

In the group of later bankruptcies, profitability of asset ratios (both based on net financial result and operating result) in the three years before bankruptcy were on a significantly lower level than analogous

Chart 8: Return on assets (ROA) in the four years prior to bankruptcy among the analysed construction companies (%)

Specification	2009	2010	2011	2012
Median – companies in total	4,2	3,1	2,3	1,6
Mean – companies in total	6,2	4,0	3,0	1,0
Median – bankruptcies	2,8	1,3	0,4	-21,6
Mean – bankruptcies	3,1	-2,3	-7,5	-47,5

Source: Own elaboration

Chart 9: Operating profitability of assets ratio in the four years before bankruptcy among the analysed construction companies (%)

Specification	2009	2010	2011	2012
Median – companies in total	5,9	4,6	4,0	2,9
Mean – companies in total	8,3	5,9	5,2	2,4
Median – bankruptcies	6,1	3,4	2,7	-20,6
Mean – bankruptcies	6,5	0,1	-4,3	-42,7

Source: Own elaboration

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indicators for all construction companies.

A significant collapse occurred one year before bankruptcy, when the average level of ROA in the analysed enterprise group reached -47.5% (average operating profitability of assets reached -42.7%).

Conclusions

The study presents us with the following meaningful facts:

a) construction companies, as extremely sensitive to economic conditions, were characterized by a significant participation of entities generating losses both at operational and the level of the gross and net financial results.

b) among construction companies threatened with bankruptcy, in the period of one year before the bankruptcy, the share of loss generating companies (both operating and net-income) was close to 80%.

The conclusion confirms the initial research hypothesis of losses (net losses and operating losses) generated by the majority of construction companies in the period before their bankruptcy.

It should be noted that this situation differs from the previously mentioned opinion that enterprises do not go bankrupt due to negative financial results but due to the lack of funds for timely payment of liabilities. That situation could be explained by the specificity of the construction industry, characterized by high sensitivity to changes of the economic situation (measured, for example, by GDP dynamics) and long production and settlement cycles. In the case of construction companies, long settlement cycles of construction contracts allow companies to obtain cash inflows in the situation where the company is generating significant accrual losses.

It seems that due to the specificity of the construction industry, the conclusions described in this article should not be transferred to other types of business and generalized.

References

Banach-Kobyra, A. (2017). Analiza sytuacji przedsiębiorstw budowlanych w Polsce w latach 2007 – 2015. *Annales Universitatis Mariae Curie-Skłodowska*, Lublin, 9 – 18.

Bednarczyk, M. (2007). Znaczenie małych przedsiębiorstw turystycznych w gospodarce polskiej. In: *Studia nad turystyką. Tradycje, stan obecny i perspektywy badawcze* (pp. 147-154). Kraków: Uniwersytet Jagielloński.

Bieniasz, A. (2015). *Determinanty rentowności kapitału własnego przedsiębiorstw przemysłu spożywczego w Polsce*. In: *Rachunkowość a controlling* (pp. 76-83). Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu nr 399. Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu.

Dresler, Z. (Ed.) (2014). *Rentowność przedsiębiorstw w Polsce*. Kraków: Wydawnictwo Uniwersytetu Ekonomicznego w Krakowie.

Gałązka, K., Janik, W. (2013). Rentowność przedsiębiorstw. In: W. Janik (Ed.), *Sytuacja finansowa przedsiębiorstw sektora elektroenergetycznego w Polsce* (pp. 93-118). Lublin: Politechnika Lubelska, Wydział Zarządzania.

Gołaś, Z. (2008). *Uwarunkowania rentowności kapitału własnego w rolnictwie (część I)*. In: Zagadnienia Ekonomiki Rolnej nr 3, pp. 60 – 77.

Gołaś, Z. (2010). Zróżnicowanie i determinanty rentowności sektora MSP w Unii Europejskiej. *Przegląd Organizacji*, nr 12, 14 – 18.

Grabiński, K. (2016). *Determinanty kształtowania wyniku finansowego w teorii i praktyce europejskich spółek giełdowych*. Kraków: Wydawnictwo Uniwersytetu Ekonomicznego w Krakowie.

http://www.coface.pl

http://www.portal-bankrut.pl

Kędzior, M. (2016). *Zależność rentowności przedsiębiorstw od czynników mikroekonomicznych, makroekonomicznych i instytucjonalnych w wybranych państwach Unii Europejskiej,* Zeszyty Naukowe, Seria Specjalna Monografie (pp. 81-97). Kraków: Wydawnictwo Uniwersytetu Ekonomicznego w Krakowie.

Maślanka, T. (2003). Zależności między płynnością a rentownością na przykładzie spółek z branży spożywczej notowanych na GPW w Warszawie za okres 1998 – 2002. In: B. Micherda (Ed.), *Sprawozdawczość i rewizja finansowa w procesie podnoszenia kwalifikacji kadry menedżerskiej*, (pp. 445-454). Kraków: Akademia Ekonomiczna w Krakowie.

Maślanka, T. (2007). Dylematy memoriałowego pomiaru rentowności. In: A. Bogus, M. Wypych (Ed.), *Harmonizacja rynków finansowych i finansów przedsiębiorstw w skali narodowej i europejskiej*, (pp. 520-530). Warszawa: Difin.

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Maślanka, T. (2009a). *Płynność a rentowność – wyniki badań empirycznych polskich podmiotów gospodarczych za okres 1995 – 2007*, Zeszyty Naukowe Uniwersytetu Szczecińskiego Nr 549, Ekonomiczne problemy usług Nr 39, *Finanse 2009 – teoria i praktyka; Finanse przedsiębiorstw,* (pp. 260-270). Szczecin: Wydawnictwo Naukowe Uniwersytetu Szczecińskiego.

Maślanka, T. (2009b). *Wartość czy zysk – rozważania na temat głównego celu zarządzania finansami przedsiębiorstwa*. In: S. Owsiak (Ed.), *Bankowość w dobie kryzysu finansowego a perspektywy rozwoju regionów. Tom III. Przedsiębiorstwo wobec kryzysu finansowego,* (pp. 30-36). Bielsko-Biała: Wyższa Szkoła Bankowości i Finansów w Bielsku-Białej.

Maślanka, T. (2010). Koszty pracy a rentowność polskich przedsiębiorstw przemysłowych. In: J. Ostoj (Ed.), *W poszukiwaniu źródeł finansowania rozwoju przedsiębiorstw oraz jednostek samorządu terytorialnego w warunkach kryzysu finansowego* (pp. 82-88). Bielsko-Biała: Wyższa Szkoła Bankowości i Finansów w Bielsku-Białej.

Maślanka, T., Mazur-Maślanka, T. (2017). *Wybrane wskaźniki finansowe w okresie przed upadłością w przedsiębiorstwach budowlanych*, Kwartalnik Nauk o Przedsiębiorstwie nr 1 (42), Warszawa: Szkoła Główna Handlowa, 73 – 84.

Misztal, A. (2015). *Analiza czynników zewnętrznych determinujących rentowność przedsiębiorstw*. In: Zeszyty Naukowe Ostrołęckiego Towarzystwa Naukowego Nr 29, 223 – 231.

Molo, M. (2015). *Wpływ kryzysu na rentowność przedsiębiorstw*. In: Z. Dresler (Ed.), *Kondycja ekonomiczna przedsiębiorstw w Polsce w latach kryzysu* (pp. 37-81). Kraków: Szkoła Wyższa im. Bogdana Jańskiego.

Popławski, Ł, Kaczmarczyk, B. (2016). Wartość przestrzeni publicznej jako kategoria dobra wspólnego na przykładzie województwa małopolskiego. *Barometr regionalny* Tom 14 Nr 4, 163-170.

Ratajczak, M. (2009). *Sytuacja finansowa małych i średnich przedsiębiorstw w Polsce w latach 2002 – 2007*, Zeszyty Naukowe SGGW w Warszawie, Ekonomika i Organizacja Gospodarki Żywnościowej nr 76, 147 – 155.

Ratajczak, M. (2010). *Wyniki finansowe małych i średnich podmiotów gospodarczych w Polsce w latach 2002 – 2008*, Zeszyty Naukowe Uniwersytetu Szczecińskiego, Ekonomiczne Problemy Usług nr 43, 293 – 301 .

Sierpińska, M., Wędzki, D. (2002). *Zarządzanie płynnością finansową w przedsiębiorstwie*. Warszawa: Wydawnictwo Naukowe PWN.

Stępień, K. (2013). *Definicyjne i metodyczne problemy rentowności*, Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie nr 920, Kraków, 101 – 110.

Zawadzka, D., Szafraniec-Siluta, E. (2015). *Rentowność aktywów przedsiębiorstw rolniczych w Polsce – ocena porównawcza*. In: Stowarzyszenie Ekonomistów Rolnictwa i Agrobiznesu, Roczniki Naukowe (pp.339-345). Tom XVII, zeszyt 6.

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