OECONOMIA
COPERNICANA

2017 VOLUME 8 ISSUE 2, JUNE

p-ISSN 2083-1277, e-ISSN 2353-1827
www.oeconomia.pl

ORIGINAL PAPER

Citation: Tomczak, S. K. (2017). Influence of the size of equity on corporate efficiency. *Oeconomia Copernicana*, *8*(2), 239–254. doi: 10.24136/oc.v8i2.15

Contact: sebastian.tomczak@pwr.edu.pl, Department of Operations Research, Wrocław University of Science and Technology, Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland
Received: 5 December 2016; Revised: 23 February 2017; Accepted: 9 March 2017

Sebastian Klaudiusz Tomczak
Wrocław University of Science and Technology, Poland

Influence of the size of equity on corporate efficiency

JEL Classification: *G33; L60*

Keywords: *equity capital; profitability ratios; manufacturing sector; t-Student test*

Abstract
Research background: From the perspective of managers and shareholders, obtaining profit is the main goal and driver of company activity. A profitable company can find investors easily, because they count on a big return on investment. However, enterprises that are not effective enough could end up being taken over by others, go bankrupt or shut down business.
Purpose of the article: is to identify the impact of a high share of equity in the total assets on the profitability of manufacturing companies.
Methods: The focus of this paper is on the manufacturing sector. Research time-scale is set to sixteen years (2000–2015). The choice of this period is determined by data availability. In the examined interval of time over 15 thousand firms from the sector in question were flirted drawn from the EMIS. The gathered data enabled computation of the following financial indicators for the itemized companies: gross margin, operating margin, return on sales, return on assets, and return on equity. Then selection of companies was carried out to choose these with a high share of equity in its total assets. The proportion was regarded to be high if it reaches fifty one percent. Companies with quantities below this threshold have been excluded from the sample. The next step defines intervals (classes) for the equity ratio. Depending on the value of equity, the remaining firms were assigned to their corresponding class. In order to analyze influence of the quantity of equity on the level of profitability t-Student test for independent samples has been applied.

Findings & Value added: The comparative analysis of the indicator of the size of equity with the indicators of profitability makes it possible to confirm that there is a significant impact on the value of profitability ratios of manufacturing companies. However, in most cases the impact is statistically irrelevant.

Introduction

The relation between the capital structure and performance in a business has triggered the interest of researchers in finance for a long time. Modigliani and Miller (1958) showed the capital structure theory in their paper "The Cost of Capital, Corporation Finance and the Theory of In-vestment". Following their model, the conclusion was drawn that the market value of the company is independent of its capital structure. Modigliani and Miller showed that when the market value of an indebted enterprise varies greatly from the value of an unlevered identical enterprise, arbitrage opportunities emerge (Diana *et al.*, 2016).

The performance of a company can be assessed, among others methods, by using ratio analysis. An enterprises should be able to prove a good performance, high growth potential, and deliver business information about itself which would be acceptable to investors. The ratio analysis is a form or manner that is frequently used in analyzing the financial reports of a business. By using tools such as ratio analysis it will be possible for an analyst to point out the good and bad circumstances or financial situation of a business (Heikal, 2014).

Financial ratios were developed to be useful especially for managers, investors, as well as creditors. Investors want accurate information to make an investment in a company, so that they do not get stuck in adverse conditions (Silviana & Rocky, 2013). Especially, the profitability ratios are the highest significance, among others, the return on equity after tax (Gibson, 1987).

Bieniasz *et al.* (2010) say that in the first years after accession to the EU the return on equity of domestic manufacturing enterprises was shaped largely by the efficiency of operating activities, determined by the rate of return on sales, and asset turnover, informing about the effectiveness of employed assets. The return on equity is considered to be the most tangible indicator of benefit to the investors. ROE is shaped by many factors, and their identification allows for the decomposition of the synthetic indicator (Bieniasz, 2015).

The increase in the return on equity ratio is caused by the company's financial leverage (Duliniec, 2011; Zawadzka, 2009). Dresler (2013) disagrees with the statement that the purpose of the use of foreign capital is to obtain a higher ROE. In his studies, he found that the higher profitability of industrial enterprises, the higher the share of equity in total assets in a company is. If the profitability is deteriorating, the share of foreign capital is increasing (Dresler, 2013).

Therefore, the article attempts to verify the impact of the size of an equity of the total assets on the profitability of a business. It will allow to give an answer to question: are the companies with a huge share of equity in the total assets characterized by lower profitability? Statistical significance of the impact of equity on profitability was tested by using Student's t test.

Research methodology

The focus of this paper is on the manufacturing sector. Research time-scale is set to sixteen years (2000–2015). The choice of this period is determined by data availability. In the examined interval of time over 15 thousand firms from the sector in question were flirted drawn from the EMIS (86 thousand financial reports were analyzed). The gathered data enabled computation of the following financial indicators for the itemized companies: gross margin (GM), operating margin (OM), return on sales (ROS), return on assets (ROA), return on equity (ROE).

Then, selection of companies was carried out to choose those with a high share of equity in their total assets. The proportion was regarded to be high if it reaches fifty one percent (according to the median of 16 years of a ratio of a company). Companies with quantities below this threshold have been excluded from the sample.

The next step defines intervals (classes) for the equity ratio. The following were chosen: 0,51–0,60; 0,61–0,70; 0,71–0,80; 0,81–0,90; 0,91–1,00. De-pending on the value of equity, the remaining firms were assigned to their corresponding class. For instance, a particular company with the value of its indicator of equity at the level of sixty five percent is going to be assigned to the interval 0,61–0,70. Also other computed indicators of this company will be allotted to the interval representing the size of equity. For example, the company is described by the averaged values of indexes in the examined period: ER=76%; GM= 13,56%; OM=13,03%; ROS=11,74%; ROA=11,61%; ROE=14,73%.The values of these indexes will point to the class 0,71–0,80 the quality of equity. Each firm will be assigned to its corresponding interval of the size of equity. Thanks to this, one can investigate how the increase in equity will influence the levels of profitability of ratios.

According to the size of the equity ratio, different companies have been assigned to different classes. There are 1131 firms in the first class 0,51–

0,60. The second 0,61–0,70 contains 1976 and in the third 0,7-0,8 there are 1847 companies. The penultimate 0,81–0,9 and the last comprise 1452 and 598 companies, accordingly.

The aim of setting intervals of the equity ratio is to identify its influences on corporate effectiveness. Making use of these intervals is to answer the questions: does corporate profitability decrease with the increase equity in the total assets? Are the firms with a high percentage of equity in the total assets (nearing one) characterized by lower profitability?

This paper is written with the following hypothesis in mind:

H10: A high share of equity in the total assets has statistically significant impact on the profitability of manufacturing companies.

H1A: A high share of equity in the total assets has no statistically significant impact on the profitability of manufacturing companies.

In order to analyze influence of the quantity of equity on the level of profitability, t-Student test for independent samples was applied (the hypothesis will be tested against the significance of 0.05). This test is a commonly applied method for examining dissimilarities between the averages in the two groups (in this particular case differences in averaged values in the defined intervals of values of the indicator).With this test one can assess whether the existing difference in averages of examined groups is statically relevant.

The t-Student test was applied by the use of the Statistica suite.

Results

The reference index for profitability indicators to be analyzed with is the size of equity ratio (Figure 1). This indicator states to what degree corporate assets is covered by equity. The values of this index lay below one. There is, however, some regularity: the higher the value of this index, the better corporate financial condition. Thanks to the high value of indicator of equity in financing the assets companies feel more independent of lenders of external sources of financing (Walczak ed., 2007).

It is worth noting that leverage indicators are commonly used in models of evaluating the financial condition of companies known as the bankruptcy prediction models (Altman, 1968; Appenzeller (Hadasik), 1998; Beaver, 1966; Gajdka & Stos, 1996, 2003; Hołda, 2001; Legaulta & Score, 1987; Mączyńska, 1994, 2006; Sartori *et al.*, 2016; Zięba *et al.*, 2016).The occurrence of the equity ratio in those models is associated with the predictive and discriminatory abilities. Because improper proportion of capital within the company is one of the causes of bankruptcy of enterprises (Appenzeller, 1998, 2012; Pieńkowska, 2004; Szczerbak, 2005; Tomczak, 2014).

In order to verify relevance of influence of the size of equity on profitability the following intervals of this index has been defined: 0,51-0,60; 0,61–0,70; 0,71–0,80; 0,81–0,90; 0,91–1,00 (see figure 1). In the research sample there have been companies with the share of at least 51 percent equity in the total assets such firms have been chosen. Each company is assigned to its corresponding interval of the size of equity. The analyzed indexes of profitability are going to be compared with equity. The results are going to be presented on Figures 2 through 6.

The first examined profitability ratio associated with the index of the size of equity is the index of the gross margin — GM (figure 2). The gross mar-gin demonstrates the achieved efficiency of a company after incurring the direct costs associated with producing the goods and services. It should be high enough to cover the costs not directly related to the production: administrative expenses, selling and distribution expenses, financial costs and others (Kowalczyk, 2006).

Having analyzed the first index of profitability, one can conclude that the value of the indicator of gross margin for the firms with a high share of equity in the total assets is greater than the median of the values of the indicator for the whole research sample which resides in the interval 4–7%, except for companies that are characterized by the size of the equity in the range of 0,51–0,60.The highest values of this index are generated by those companies whose shares of equity in the total assets are very near one. The results are interesting considering the fact that equity capital is more expensive than debt capital.

The second examined profitability indicator connected to the size of equity is the operating margin — OM (Figure 3). The OM indicator informs about the level of operational efficiency related to the sale of products and services as well as other operating results. This indicator does not include financial incomes and expenses. Therefore, this indicator shows the effectiveness independent of the structure of financing, i.e. the level of involvement of foreign capitals.

By analyzing the second indictor, it can be concluded that the median of the indicator of the OM takes values within the interval 3-5% in the period in question. It should be mentioned that the value of the median for the whole sample coincides with the one for companies with equity in the assets assigned to the interval 0,51–0,60.

The third examined index with reference to the indictor of the size of equity is the return on sales — ROS (figure 4). The ROS indicator shows the final result after tax against its revenues from sales.

Having analyzed the ROS ratio, it can say that also in this case the median of the values of the indicator for the whole sample coincides with the one for the companies possessing equity in the total assets in the interval 0,51-–0,60. In the examined period, it oscillates between 1–4%.However, the values of the return on sales for firms with equity ratio nearing one are even four times higher than the value of the median for the whole sample.

The next indicator being investigated in relation to the index of the size of equity is the return on assets — ROA (Figure 5).The ROA shows the efficiency of the total assets. It should also be noted that this ratio determines the ability of the total assets to generate profits. If this indicator is higher than the inflation rate ensures assets renewal and growth in a short period (Diana & Alexandra 2016).

The research results presented in Figure 5 indicate that the median of values of the ROA for the whole sample in the period in question oscillates between 2–10%. The median of the values of the indicators for the whole sample also here coincides with the one for the firms possessing equity in the total assets in the interval 0,51–0,60, and it differs significantly from the values of the index for the companies preferring to make use of equity such firms are characterized by higher profitability. In addition, one notices lower differences in the values of indictor between the intervals of the share of equity in the total assets, which may suggest smaller relevance of its influence on the return on assets.

The last index that is analyzed in connection with the size of equity is the return on equity (Figure 6).The most recognizable indicator of profitability, especially used by shareholders. The higher value of ROE, the better management is at employing investors' capital to generate profits (Kijewska, 2016).

Carrying out the analysis of the results presented in Figure 6, it can be observed that the median of the ROE for the whole sample in the period in question resides in the interval 6–18%. Moreover, in this case the values of the median of this ratio for the whole sample show similar dependencies to the median for each interval, which may suggest no relationship between the size of the equity, and the size of return on equity.

The provided research results prove that values of the median of analyzed indicators for the firms with equity share nearing one in the total assets are considerably higher than the median of values for the whole research sample that equals to 15 thousand firms, except for ROE. It can thus be concluded that the higher equity in the total assets the greater profitability with the exception of return on equity.

It should also be pointed out that the results are interesting. This due to the cost of capital, because the equity capital is much more expensive than foreign capital. Demands of shareholders depend on, among others, the strategy of working capital. The mean equity cost for the aggressive strategy is 15%, for the moderate strategy is equal to 16% as well as for the conservative which is 17%. The cost of equity raises together with a more conservative working capital management policy (Bolek, 2014). On the other hand, the cost of taking out a loan does not exceed 10%.

On the basis of the carried out research, one cannot determine any level of relevance of the individual classes of the median. Thus the level of relevance of the intervals of the median of intervals is going to be verified by means of the t-Student test for independent samples (see Table 1).

By analyzing the above table, one can conclude that the differences between intervals in most cases in the period were irrelevant. However, from 2006 through 2008 and 2011 through 2014 the dissimilates are statistically relevant in most cases, with just one exception as far as the return on equity ratio is concerned, which stood out from the others.

The presented research results do not clearly confirm statistical significance that the higher share of equity in the assets the lower corporate profitability will be.

Conclusions

This paper examines over 15 thousand manufacturing companies. Timespan incorporated sixteen years (2000–2015). The firms that maintained a high percentage of equity in the total assets were chosen among all firms being examined for further consideration. The threshold value was set to 51 percent. Then the following intervals (classes) of equity ratio were determined 0,51–0,60; 0,61–0,70; 0,71–0,80; 0,81–0,90; 0,91–1,00.

In order to compare the relevance of the influence of equity ratio on profitability several financial indicators were computed for the itemized companies: gross margin (GM), operating margin (OM), return on sales (ROS), return on assets (ROA), and return on equity (ROE).

An analysis of data indicates that the values of the median of analyzed profitability ratios for the manufacturing companies with equity share nearing one in the total assets are considerably higher than the median of values for the whole research sample that equals to 15 thousand firms, except for ROE. However, the results of Student-t test were not so promising. In most cases in the period, the differences between intervals were irrelevant for examining the dissimilarities between the averages in the two groups. Therefore, it can be concluded that the statistical influence of a high share of equity in the total assets on the profitability of manufacturing companies is irrelevant. The alternative hypothesis can be considered as positive.

It can be also said that corporate profitability does not decrease along with the increase equity in the total assets and the firms with a high percentage of equity in the total assets (nearing one) are not characterized by lower profitability.

It is worth noting that calculation of median of indicators for the whole research sample can be considered as the standard value for the selected indicators of the manufacturing sector. The standard values of indicators for the selected sector oscillate in the range:

- 4–7 % for the gross margin ratio,
- 3–5 % for the operating margin ratio,
- 1–4 % for the ROS ratio,
- 2–10% for the ROA ratio,
- 6–18% for ROE ratio,
- 46–52% for the equity ratio.

The paper raises the issue of the influence of equity on profitability of manufacturing company. However, the size of equity may have influence not only on profitability, but also on other groups of financial indicators, e.g. on liquidity or on efficiency. Therefore, the analysis of the influence of the size of equity on the individual groups of indicators shall be extended in the subsequent research. Moreover, future research will cover a broadened research area of companies – analyses will go beyond production firms.

Bearing in mind the cost of capital, the influence of the size of liabilities on the profitability should also be worth identifying.

References

Altman E. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *Journal of Finance*, *23*(4). doi: 10.1111/j.1540-6261.1968.tb00843.x.

Appenzeller, D. (1998). Micro - macroeconomic causes of bankruptcy of enterprises in Poland. *Ruch Prawniczy, Ekonomiczny i Socjologiczny*, *3-4*.

Appenzeller, D. (Hadasik) (1998). Bankruptcy of enterprises in Poland and methods of prediction. *Zeszyty Naukowe*, *2*(153).

Appenzeller, D. (2012). Looking for the symptoms of bankruptcy. In S. Morawska (Ed.). *Ekonomia i prawo upadłości przedsiębiorstw. Zarządzanie przedsiębiorstwem w kryzysie*. Warszawa: SGH.

Beaver, W. H. (1966). Financial ratios as predictors of failure. *Journal of Accounting Research*, *5*. doi: 10.2307/2490171.

Bieniasz, A. (2015). Determinants of return on equity of companies in the food industry. *Research papers of the Wroclaw University of Economics*, *399*. doi: 10.15611/pn.2015.399.07.

Bieniasz, A, Czerwińska-Kayzer, D, & Gołaś, Z (2010). Analysis of return on equity of manufacturing companies in Poland. *Journal of Agribusiness and Rural Development*, *2*(16).

Bolek, M. (2014). Return on current assets, working capital and required rate of return on equity. *Financial Internet Quarterly e-Finanse*, *10*(2). doi: 10.14636/1734-039X_10_2_005.

Diana, S, Ioan, B, & Alexandra, B. (2016). Influence of the capital structure on the companies performance. Study on the energy sector companies listed on BSE. *Annals of The University of Oradea, Economic Science Series*, *25*(1).

Dresler, Z (2013). Financial leverage and capital structure of enterprises in Poland. *Journal of Management and Finance*, *2*.

Duliniec, A. (2011). *Financing a business*. Warszawa: PWE.

Gajdka, J., & Stos, D. (1996). The use of discriminant analysis to examine the suitability of the company for bankruptcy. In J. Duraj (Ed.). *Przedsiębiorstwo na rynku kapitałowym*. Łódź: UŁ.

Gajdka, J., & Stos, D. (1996). *The use of discriminant analysis in the assessment of financial condition of enterprises*. Kraków: AE.

Gajdka J., & Stos D. (2003). Assessment of the financial condition of Polish public companies in the period 1998-2001. In D. Zarzecki (Ed.). *Czas na pieniądz. Zarządzanie finansami, Mierzenie wyników i wycena przedsiębiorstw*. Szczecin: US.

Gibson, C. (1987). How chartered financial analysts view financial ratios. *Financial Analysts Journal*, *3*. doi: 10.2469/faj.v43.n3.73.

Heikal, M., Khaddafi, M., & Ummah, A. (2014). Influence analysis of return on assets (ROA), return on equity (ROE), net profit margin (NPM), debt to equity ratio (DER), and current ratio (CR), against corporate profit growth in automotive in Indonesia Stock Exchange. *International Journal of Academic Research in Business and Social Science*, *4*(12). doi: 10.6007/IJARBSS/v4-i12/1331.

Hołda, A. (2001). Prediction of bankruptcy of a company in the Polish economy Rusing discriminant function Zh. *Rachunkowość*, *5*.

Kijewska, A. (2016). Determinants of the return on equity ratio (ROE) on the example of companies from metallurgy and mining sector in Poland. *Metalurgia 55*(2).

Kowalczyk L (2006). *Practical and theoretical aspects of business credibility*. Warszawa: Difin.

Legault, J. C. A., & Score, A. (1987). Warning system for small business failures, *Bilanas*, June.

Mączyńska, E. (1994). Assessment of the company's condition. *Życie Gospodarcze*, *38*.
Mączyńska, E., & Zawadzki, M. (2006). Discriminant analysis models in the prediction of corporate insolvency. *Ekonomista*, 2.
Modigliani, F., & Miller, M. H. (1958). The cost of capital. Corporate finance and the theory of investment. *American Economic Review*, *48*(3).
Pieńkowska, M. (2004). The prediction of crisis. *Nowe Życie Gospodarcze*, *13*.
Silviana, R. (2013). Analysis of return on assets and earnings per share on the stock market in banking companies in Bursa Efek Indonesia (Indonesia Securities Exchange). *Journal of Global Business & Economics*, *7*(1).
Sartori, F., Mazzucchelli, A., & Di Gregorio, A. (2016). Bankruptcy forecasting using case-based reasoning: the CRePERIE approach. *Expert Systems with Applications*, *64*. doi: 10.1016/j.eswa.2016.07.033.
Szczerbak, M. (2005). The reasons for the bankruptcy of enterprises in the light of official receivers. In K. Kuciński & E. Mączyńska (Eds.). *Zagrożenie upadłością*. Warszawa: SGH.
Tomczak, S. (2014). Comparative analysis of the bankrupt companies of the sector of animal slaughtering and processing. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, *9*(3). doi: 10.12775/EQUIL.2014.018.
Walczak, M. (2007). *Financial analysis in the management of a modern enterprise*. Warszawa: Difin.
Zawadzka, D. (2009). The company's capital structure. In A. Bielawska (Ed.). *Nowoczesne zarządzanie finansami przedsiębiorstwa*. Warszawa: C.H. Beck.
Zięba, M, Tomczak, S., & Tomczak, J. (2016). Ensemble boosted trees with random features generation in application to bankruptcy prediction. *Expert Systems with Applications*, *58*. doi: 10.1016/j.eswa.2016.04.001.

Annex

Table 1. Results of the t-Student test for the investigated intervals of values of median for the itemized financial indicators

Year	Class\ Ratio	GM	OM	ROS	ROA	ROE
2000	1	no	no	no	no	no
	2	5	no	3	no	no
	3	5	no	2	no	no
	4	no	no	no	no	no
	5	2,3	no	no	no	no
2001	1	4	4	4,5	5	no
	2	no	4	4,5	5	no
	3	no	no	no	5	no
	4	1	1,2	1,2	no	no
	5	no	no	1,2	1,2,3	no
2002	1	no	no	no	5	no
	2	no	3,5	3,5	5	no
	3	no	2	2,5	no	no
	4	no	no	no	no	no
	5	no	2	2,3	1,2	no
2003	1	4	no	no	no	no
	2	no	no	4	no	no
	3	no	no	no	no	no
	4	1	no	2	no	no
	5	no	no	no	no	no
2004	1	no	4	no	no	no
	2	4	3,4	4	no	no
	3	no	2	no	no	no
	4	2,5	1,2	2	no	no
	5	4	no	no	no	no
2005	1	no	no	3	4	no
	2	5	5	no	no	no
	3	5	5	1	no	no
	4	no	no	no	1	no
	5	2,3	2,3	no	no	no

Table 2. Continued

Year	Class\ Ratio	GM	OM	ROS	ROA	ROE
2006	1	3,4,5	yes	yes	yes	no
	2	3,4,5	yes	yes	1,4,5	no
	3	1,2	1,2,5	1,2,5	1	no
	4	1,2	1,2,5	1,2,5	1,2	no
	5	1,2	yes	yes	1,2	no
2007	1	3,4	yes	yes	yes	2,3,5
	2	3,4	yes	yes	1,4,5	1
	3	1,2	yes	1,2,5	1,5	1
	4	1,2	5	1,2,5	1,2,5	5
	5	no	4	yes	yes	4
2008	1	2,3	2,3,5	3,5	yes	2,3
	2	1	1,3,5	no	1,3,5	1
	3	1	1,2,5	1,5	1,2	1
	4	no	no	no	1	no
	5	no	1,2,3	1,3	1,2	no
2009	1	no	3,5	3	yes	no
	2	no	5	no	1	no
	3	no	1	1	1	no
	4	no	no	no	1	no
	5	no	1,2	no	1	no
2010	1	no	no	no	yes	2
	2	5	no	no	1	1
	3	no	no	no	1	no
	4	no	no	no	1	no
	5	2	no	no	1	no
2011	1	no	yes	2,3,4	yes	2,4,5
	2	4,5	1,4,5	yes	1,4,5	1
	3	4,5	1,4,5	yes	1,4,5	no
	4	2,3,5	yes	1,2,3	yes	1
	5	2,3,4	yes	2,3	yes	1

Table 3. Continued

Year	Class\ Ratio	GM	OM	ROS	ROA	ROE
2012	1	no	2,4,5	2,4,5	yes	2,3,4
	2	4,5	1,4,5	4,5	1,4,5	1
	3	no	no	no	1	1
	4	2,5	1,2,5	1,2,5	1,2	1
	5	2,4	1,2,4	1,2,4	1,2	no
2013	1	no	3,4,5	3,4,5	2,4,5	yes
	2	no	no	no	1,4,5	1
	3	4,5	1,4,5	1,4,5	no	1
	4	3	1,3	1,3,5	1,2	1
	5	3	1,3	1,3,4	1,2	1
2014	1	no	yes	yes	yes	yes
	2	3,4,5	yes	4,5	yes	1
	3	2,4,5	4	1,4,5	1,2	1
	4	2,3	3,5	1,2,3	1,2	1
	5	2,3	4	1,2,3	1,2	1
2015	1	no	5	4,5	5	no
	2	4,5	4,5	4	no	no
	3	no	5	4,5	no	no
	4	5	2,5	1,2,3	no	no
	5	2,4	yes	1,3	1	no

* legend 1 =0,51-0,60; 2 = 0,61-0,70; 3 = 0,71-0,80; 4 = 0,81-0,90; 5 = 0,91-1,00; no = difference between the compartments are statistically insignificant; yes = difference between the compartments are statistically significant.

Figure 1. Yearly values of the equity ratio with the division into classes

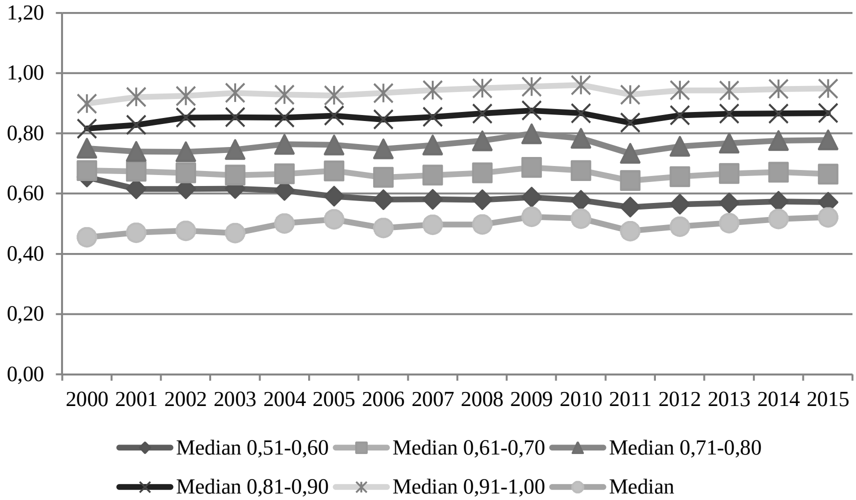

Figure 2. Yearly values of the index of the GM

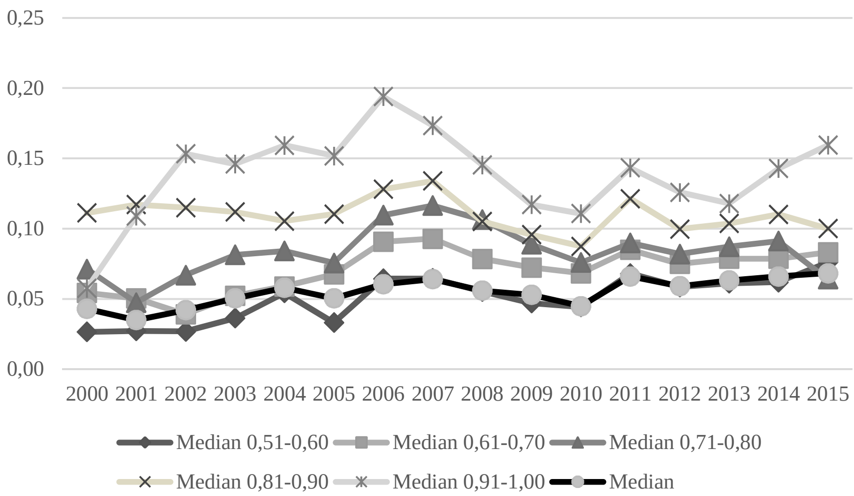

Figure 2. Yearly values of the indicator of the OM within the division into classes

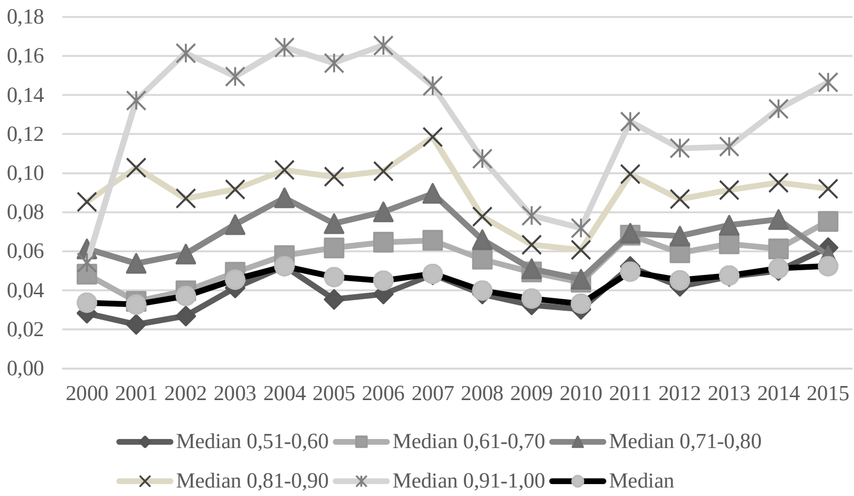

Figure 3. Yearly values of the ROS with the division into classes

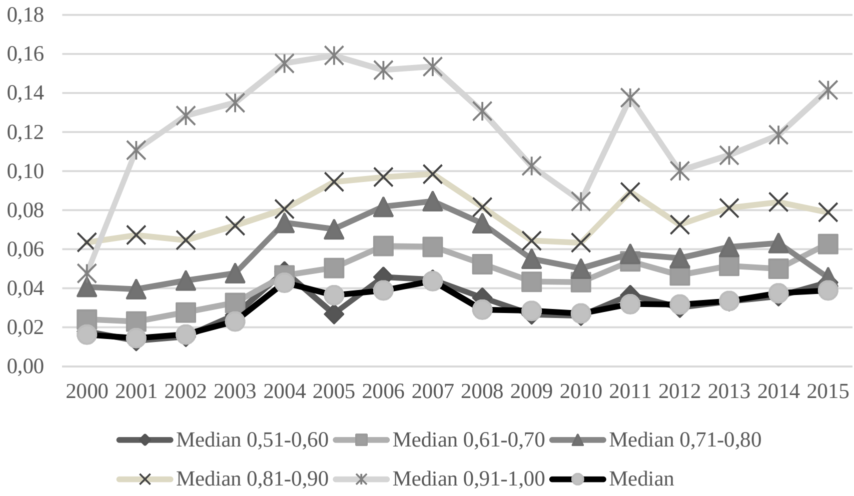

Figure 4. Yearly values of the ROA with the division into classes

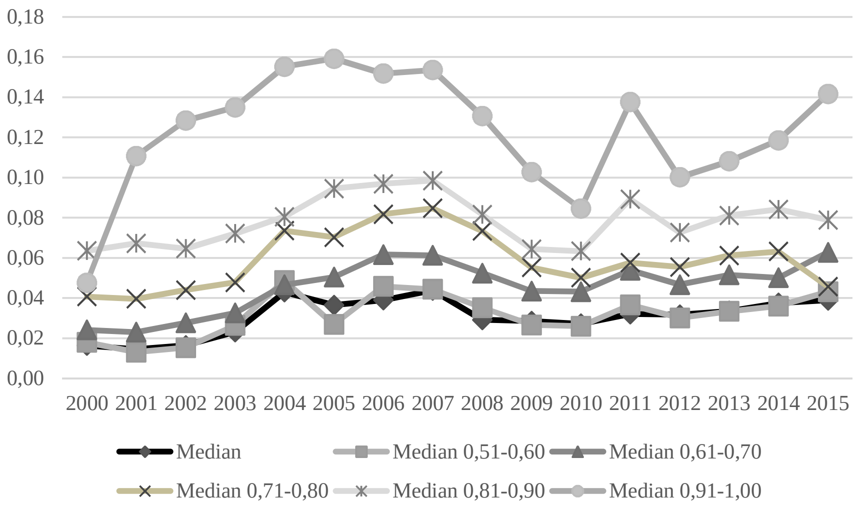

Figure 5. Yearly values of the ROE with the division into classes