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ORIGINAL RESEARCH

Is the Growth of Companies Influencing Their Financial Condition Depending on Their Size: S&P 500 Listed Companies Example

Monika Bolek[1] · **Agata Gniadkowska-Szymańska**[1]

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Abstract
The goal of this paper is related to the analysis of the earnings per share growth and the financial condition of companies as measured by Altman Z-Score Model and their relation. The research has been carried out on the example of S&P500 Index listed companies. The correlation and OLS panel data models with fixed effects were tested. The results indicate that the relationship between the EPS growth and Altman Z-Score is not linear and the smaller the company, the higher its growth index. In most of cases the growth of EPS influenced the Altman Z-scores in a positive way. On contrary in the group of medium size companies, EPS growth influenced the financial condition in a negative way. The article fills the gap related to the growth, the size and financial condition of the company that can improve if the management of growth is efficient.

Keywords Company growth · Financial condition · Altman Z-score · EPS growth

JEL Classification G30 · G32 · G33 · M2

1 Introduction

The growth of companies and their financial condition are related to the value management. The growth in finances may be reflected by the growth of sales, assets, equity, and earnings per share (EPS) as proposed by Danbolt et al. (2011). The growth of EPS influences the growth of value, and it is directly related to the company's goal that is the value maximization. The growth of value should be related to the financial condition of

✉ Agata Gniadkowska-Szymańska
agata.gniadkowska@uni.lodz.pl

Monika Bolek
monika.bolek@uni.lodz.pl

[1] Department of Capital Market and Investments, Faculty of Economics and Sociology, University of Lodz, Rewolucji 1905r. 41 Street, 90-214 Lodz, Poland

a company as reflected for example by Altman Z-Score Model (Altman & Hotchkiss, 2006). If management of growth is effective, the company's condition should remain the same and may even improve. EPS growth can be manipulated by managers who want to influence the value of a company. Such manipulations can affect the financial condition.

The growth of mature companies is less dynamic comparing to the growth of younger and smaller business entities. This difference, also related to the size may influence the relationship between the EPS growth and financial condition as measured by Altman Z-Score. The sustainable growth of mature companies differs from the dynamic growth due to the financial management strategies.

The early warning models are commonly applied to assess the condition of a company, but this issue should be analyzed in relation to the value creation, representing the goal of companies operating on a capital market. Conservative strategies implemented in companies may be considered as safer, reducing the risk and earning, while aggressive strategies are related with higher risk and earnings reflected in models such as Altman Z-Score. EPS growth directly affects the growth of value and managers, investors and banks need to be careful when assessing the business based only on the distress models (Kaplan & Norton, 2005).

The goal of this paper is to analyze the growth of companies and their financial condition. The 3- and 5-years EPS growth and Altman Z-Score were taken into consideration, and it is expected that the EPS growth influences the financial condition of companies in a positive way. The size of the companies measured by total assets is applied and additional tests of portfolios representing the size are analyzed. The US market represented by S&P 500 listed companies is analyzed as the example of developed economy that can be considered as the one to follow by less developed markets. Pearson and Spearman correlation analysis and OLS regression models with fixed effects are applied to verify the hypothesis.

The growth of companies is necessary to build a strong economy that is a desire of every country. Unfortunately, the growth very often ends in the distress. Levine and Zervos (1999) found that larger, more efficient stock markets positively influence economic growth. More recently Pradhan (2018) examined the long-run relationship between the development of the stock market and economic growth in G20 countries and found the relationship between the development of the stock market and per capita economic growth. These findings legitimize the importance of the relationship analyzed in this paper that will fill the gap in the literature related to the growth of companies and its assessment.

In the first step the literature related to the topic of a paper is discussed, next the data and methods followed by the results are presented. The conclusions related to the main findings and some recommendations for the future research are discussed in the end.

2 Literature Review

The concept of managing the enterprise from the point of view of the owners should lead to growing value (Lantos, 2001). The company's growth is related to the increase in equity and liabilities that results in growing assets and implementation

of investment projects (Stubelj, 2010). If the value is expected to grow, the capital budgeting should be effective. Companies are looking for the cheapest possible capital necessary to finance their activity that is reflected in the organizational form of the economic entity, its development phase, and thus—the risk (Schleifer & Vishny, 1997; Fama, 1980). The growth a company is a key process on a capital market because otherwise investors would not receive the expected rates of return and would not be interested in investing their money. If the market is efficient and investors discount the information about the company's performance in a rational manner, the stock price and rate of return should reflect the fundamental value (Muhammed & Scrimgeour, 2014).

The development of a company is closely related to the growth, a measurable category applied in financial analysis while the development is a qualitative category, which can be applied to describe the company's changing status (Davidsson et al., 2006; El Hakioui & Louitri, 2017; Perényi & Yukhanaev, 2016). This difference in meaning of the words is formal and they both are used to reflect the change in a company, which can be both measurable and qualitative.

Earnings per share and their growth is a measure of effectiveness that should be paid a special attention to. However, it should be remembered that the method of costs management is also an important factor in assessing the effectiveness of the company's operations, as they significantly affect the level of operating result, which in turn translates into EPS growth (de Wet, 2013; Battall & Sabri, 2020). The application of modern costs management methods solves many problems related to, for example, continuous technological development, which contributes to the increase in indirect costs in the company (Kuta & Rudnicki, 2015; Battisti et al., 2020).

Gentry and Pyhrr (1973) presented a model that simulates the long-run financial planning process of the firm. It was assumed in their findings that the financial objective of top management is the long-run growth in earnings per share (EPS). It is a notion that serves as a decision criterion for evaluating investment alternatives. This performance measure is the rate of return required on new investment by top management (Choudhary, 2011).

Growth is a multi-dimensional issue, and one should not only refer to a single measure of growth, such as sales or assets. The selection of as many measures as possible allows for a better assessment of the company's growth. However, it creates research limitations due to the number of models that should be analyzed. For this reason, there is one overarching measure distinguished in finances that reflects the growth—and that is earnings per share (Bakar et al., 2011; Czarnitzki & Delanote, 2013; Dunne & Hughes, 1994; Nickell et al., 1992). Growing EPS should translate into a growing market value of the company and the rate of return on investment in its shares. From the other hand the profits are measured considering certain errors which, in consequence, may affect their forecasted values (Sinurat et al., 2020). Moreover, high level of return on equity leads to a decline in future profits and this is because new enterprises are emerging on the market, encouraged by high margins, which increase competitiveness in the sector and as a result reduces return on equity (Fama & French, 2007).

The growth of a company is related to the various sources of capital used in different stages of development based on the growth opportunity taken into consideration by

investors (Borgman & Strong, 2006; Hart & Zingales, 2017). Mueller (2003) studied the influence of the benefits of control on the capital structure and the growth of limited liability companies in UK observed for up to 5 years. It was presented in his findings that companies and their existing owners would lose more control if they were raising equity on a lower level, were more leveraged and grow slower. Moreover, Akhmadi and Robiyanto (2020) examined the factors of debt policy influencing firm's growth of value. The results proved that the growth, proxied by asset growth or sales growth, did not have a significant influence on the debt policy. Furthermore, there was no significant influence of debt policy on firm value if debt ratio and dividend policy as a control variable were taken into consideration. In contrast, there was a positive and significant influence on the firm value when debt to equity ratio as a proxy was applied. Therefore, the debt policy was not proven to be a significant factor that influence the firm growth of value (Bates, 2005; Pilotte, 1992). However, Burton et al. (1999) indicated that the market reaction to joint venture announcements was significantly positive, whilst similar announcements from individual companies did not reveal any response. They found that the market reaction to single company investments was positively related to the size of the expenditure, but only for projects that immediately generated cash. Cooper et al. (2008) tested the impact of investments in assets on the returns by examining the cross-sectional relationship between growth of assets and subsequent returns on stocks. It was found that the rate of assets growth was a strong predictor of future abnormal returns. Assets growth remains predictable even with large-cap stocks (Berk et al., 1999). By comparing the growth rates of assets with the previously documented determinants of returns (i.e., accounting ratios to market value, firm capitalization, delayed returns, accruals, and other growth measures), it turned out that the annual growth of the firm's assets appeared as an economically and statistically significant predictor of US cross-section stock returns (Platt et al., 1995). Moreover, the relationship between the growth of companies as measured by EPS growth and economic condition as measured by Altman Z-Score Model may reflect the critical moment of value creation depending on the condition assessment (Altman, 1968, 1983; Altman & Hotchkiss, 2006). It is an important question to answer if the growth can influence the financial condition of companies.

It should be noted that many researchers are beginning to refer in their papers to the bankruptcy prediction models to assess the condition of a company (see: Piotroski, 2000; Grice & Ingram, 2001; Griffin & Lemmon, 2002; Franzen et al., 2007; Xu & Zhang, 2009). As it was stated, the economic condition of a company can influences its growth making it intense (Kaplan & Norton, 2005). From the other hand the growth of company referring to its value as measured by the EPS growth can influence the financial condition as measured by Altman Z-score Model and this approach is tested in the next sections.

3 Methods and Data

This article examines companies from US stock market that were included in S&P 500 Index in the period 1996–2018. Database with yearly observations of companies, including 3- and 5-years average EPS growth, Altman Z-Scores and

total assets was obtained from Bloomberg. All together 16 457 yearly observations were taken into consideration with the constrain that not every company was included in the S&P Index from the beginning of the surveyed period.

Based on Altman and Hotchkiss (2006) the classification criteria for companies based on Z-scores are presented in Table 1.

Altman Z-Score Model has ceased to serve only a warning function but has also become a tool for assessing the economic condition of a company, which on the capital market should translate into value growth. Therefore, good condition should be associated not only with a high level of scores but also with an increase in earnings per share representing the growth of value.

The analysis related to the 3- and 5-year EPS growth and Altman Z-Scores of companies listed on the S&P 500 companies representing the most developed capitalistic market in the world is presented. The correlation analysis as measured by Pearson and Spearman ratios and OLS models parameters estimations are applied to verify the hypothesis that the EPS growth influences the financial condition of companies as measured by Z-scores in relation to their size. The model is built with the Altman Z-scores as a logarithmic variable that is explained by the growth of EPS (3- and 5-years) and the size of companies as measured by natural logarithm of Total Assets.

The model for the total sample is presented in the Eq. (1).

Table 1 Criteria for classification of companies in the Altman's system. *Source*: Altman and Hotchkiss (2006), Corporate Credit Scoring-Insolvency Risk Models, in Corporate Financial Distress and Bankruptcy, provided by stockwatch.pl

Economic condition	Z value	Rating
Safe range	8.15	AAA
	7.6	AA+
	7.3	AA–
	7	AA–
	6.85	A+
	6.65	A
	6.4	A–
	6.25	BBB+
	5.85	BBB
Insecure range	5.65	BBB–
	5.25	BB+
	4.95	BB
	4.75	BB–
	4.5	B+
	4.15	B
Dangerous range	3.75	B–
	3.2	CCC+
	2.5	CCC
	1.75	CCC–
	0	D

$$logAS_{i,t} = a_1 + a_2 lnTA_{i,t} + a_3 EPS_{i,t} + e_{i,t} \quad (1)$$

where AS—Altman Z-Score Model, TA—Total Assets, EPS—Earnings Per Share, Model 1—3 years EPS growth, Model 2—5 years EPS growth.

For the portfolios related to the assets size, the model is presented in the Eq. (2).

$$logAS_{i,t} = a_1 + a_3 EPS_{i,t} + e_{i,t} \quad (2)$$

The results of OLS regression parameters estimation indicated that control variable is statistically significant in both cases when 3- and 5-years EPS growth was applied. The observations taken into consideration in the pooled analysis were divided for 5 portfolios reflecting the size, from the smallest to the largest levels of total assets.

The sample was tested for fixed and random effects with the redundant fixed effects—Wald Test, and random effects—Breusch-Pagan Test.

4 Results

In this section the results of the analysis of the companies' growth and their financial condition are presented. In the first step the statistics of variables are provided for the total sample and subsamples reflecting 5 portfolios of companies based on their assets size (Table 2).

Based on the average results it can be concluded that the smaller the company, the higher its growth. The largest companies are characterized by the lowest growth rate in shorter (3 year) and longer (5 year) periods. The smallest companies in the sample are characterized by the highest Altman Z-score indicating their financial condition to be much better comparing to the largest companies. It can be concluded that the larger the company, the lower the Altman Z-Score.

It is worth noticing that in case of the growth indices the standard deviation is the highest for medium sized companies included in the portfolios 2 and 3, and the smallest in the portfolio 5, representing the largest companies that grow slower and in a more sustain way. The highest standard deviation for Altman Z-score is in the group of the smallest companies and the lower in the group of the largest companies.

In the next step the correlation analysis between the measures is presented in Table 3. The Pearson and Spearman correlations are calculated to assess the relation between variables of growth and financial condition, considering their different nature.

Correlation analysis between the growth of EPS in 3 and 5 years and Altman Z-scores shows that the Spearman coefficients are higher and more significant than the linear correlation analysis with Pearson coefficient indicating their non-linear nature. This correlation is similarly high for the smallest and largest companies included in portfolios 1, 4 and 5, and significantly lower for medium companies included in portfolios 2 and 3. The Spearman correlation between the growth indexes and Altman Z-scores is higher for shorter, 3-years growth of EPS in all portfolios but the portfolio 5, representing the largest business entities.

Table 2 Statistics of variables. *Source*: own study

Variable	Mean	Median	S.D	Min	Max
Total sample					
EPS 3	28.42	12.93	224.3	−1608	15,855
EPS 5	29.57	13.40	153.4	−1393	9523
AS	5.660	4.543	6.043	0.0058	116.1
TA	24,558	6164	92,442	0.3080	218,748
Portfolio 1					
EPS 3	40.31	22.86	182.4	−1608	3333
EPS 5	42.25	22.17	150.0	−1393	2000
AS	10.94	7.297	12.63	0.0505	116.1
TA	663.2	628.7	429.3	0.308	1483
Portfolio 2					
EPS 3	33.16	15.52	325.0	−1600.0	15,804
EPS 5	30.10	16.01	88.29	−929.0	1093
AS	6.738	5.597	4.692	0.0406	61.69
TA	2722	2666	767.1	1483	4162
Portfolio 3					
EPS 3	32.44	13.25	315.7	−410.2	15,855
EPS 5	32.56	13.94	272.6	−929.0	9523
AS	5.275	4.561	4.178	0.0058	72.41
TA	6377	6164	1517	4162	9438
Portfolio 4					
EPS 3	26.32	10.96	105.9	−166.8	2126
EPS 5	34.61	12.18	113.5	−40.77	1277
AS	4.387	3.844	3.439	0.0058	61.69
TA	14,896	14,325	3825	9438	22,877
Portfolio 5					
EPS 3	16.54	9.145	72.93	−382.0	1669
EPS 5	17.30	9.873	47.45	−33.05	999.9
AS	3.681	3.439	2.589	0.0072	35.23
TA	98,107	42,716	189,305	22,877	218,748

The results of OLS pooled estimation for Altman Z-scores as endogenic variable and the 3- and 5-years EPS growth as exogenic variables are presented in Table 4 with the Total Assets as a control variable. The model as presented in Eq. (1) is tested in a first place.

The results indicate that all variables in models with 3 and 5-years growth are significant and influence Altman Z-score. Total assets influence the dependent variable in a negative way in both cases. When total sample is taken into consideration both the 3- and 5-years growth indices influence the financial condition reflected by Altman Z-score in a positive way. It can be concluded that the higher the growth of EPS, the higher the scores in the Altman Model.

Table 3 Correlation analysis of variables. *Source*: own study

	Pearson correlation		Spearman rho correlation	
	EPS 3	EPS 5	EPS 3	EPS 5
Total sample				
Cor. with AS	0.094	0.04964	0.2504	0.2405
Observations	10 845	10 228	10 845	10 228
t-stat	9.8443	5.0273	26.9367	25.0593
p value	0.0000	0.0000	0.0000	0.0000
Portfolio 1				
Cor. with AS	0.1783	0.0463	0.2298	0.185
Observations	1328	898	1208	898
t-stat	6.6055	1.3894	8.2103	5.6443
p value	0.0000	0.1650	0.0000	0.0000
Portfolio 2				
Cor. with AS	0.0324	0.0001	0.1368	0.1096
Observations	2133	1999	2133	1999
t-stat	1.5013	0.0061	6.3815	4.930
p value	0.1334	0.9951	0.0000	0.0000
Portfolio 3				
Cor. with AS	−0,0098	0.0013	0.0901	0.0714
Observations	2390	2294	2390	2294
t-stat	−0,4793	0.0648	4.4234	3.4291
p value	0.6318	0.9483	0.0000	0.0000
Portfolio 4				
Cor. with AS	0.0514	0.0410	0.2310	0.2127
Observations	2405	2369	2405	2369
t-stat	2.52543	1.99729	11.6449	10.6002
p value	0.0116	0.0459	0.0000	0.0000
Portfolio 5				
Cor. with AS	0.0428	0.0666	0.2135	0.2129
Observations	2701	2660	2701	2660
t-stat	2.2272	3.4476	11.3594	11.2422
p value	0.0260	0.0006	0.0000	0.0000

It was assumed that the correlation is statistically significant for each *p* value lower than 0.1

In the next step the sample was divided for 5 portfolios regarding the assets size, and the influence of the growth indices on the condition of companies was analyzed according to the Eq. 2. The results of panel pooled OLS estimation for 5 portfolios regarding the assets size for Altman Z-scores as endogenic variable and the 3- and 5-years EPS growth as exogenic variables are presented in Table 5.

For the group of companies in Portfolio 1 the 3 and 5- years growth influence the Altman Z-score in a positive way. In the case of 5-year growth, such

Table 4 OLS pooled estimation for Altman Z-scores as endogenic variable logAS. *Source*: own study

logAS	Coef.	St. error	t-ratio	*p* value	Mean dep. var	Adj Rsq	F-stat	*p* val. (F)	N
Model 1 Total sample					1.4258	0.1592	1028.51	0.0000	10,847
Const	3.3328	0.0437	76.11	< 0.0001					
lnTA	− 0.2123	0.0047	− 44.48	< 0.0001					
EPS 3	0.0003	0.000006	5.919	< 0.0001					
Model 2 Total sample					1.4210	0.1612	984.1654	0.0000	10,227
Const	3.464	0.0471	73.46	< 0.0001					
lnTA	− 0.2242	0.0051	− 44.09	< 0.0001					
EPS 5	0.0001	0.000007	1.972	0.0487					

It was assumed that the coefficient is statistically significant for each *p* value lower than 0.1

a dependence is no longer observed for companies in Portfolio 2. In Portfolio 3 representing medium companies the 5-years growth affects the Altman Z-scores in a negative way. In Portfolios 4 and 5 both the 3- and 5-years EPS growth indices influence the condition assessed by Altman Z-score in a positive way, but this influence is very weak.

In the next step the panel data analysis is presented to test for the occurrence of fixed and random effects in the model and the results are presented in Table 6.

When analyzing the results presented in Table 6 it can be noticed that in the case of Wald's test, it is possible to confirm the presence of fixed effects in all cases. On the other hand, based on the results of the Breusch-Pagan test, H0 can be rejected, and it can be concluded that there are no random effects in the models.

The results of OLS regression with fixed effect for Altman Z-scores as endogenic variable and the 3- and 5-years EPS growth as exogenic variables are presented in Table 7 with the Total Assets as a control variable. The model as presented in Eq. (1) is tested in a first place.

The results indicate that in the model with fixed effects the 3- years EPS growth significantly influences the Altman Z-score at 10% significance level while in case of 5 years growth this variable is not significant. Total assets remain the significant variable in both cases justifying the importance of the company size in financial condition assessment process.

In the next step the sample was divided for 5 portfolios regarding the assets size, and the influence of the growth indices on the condition of companies was analyzed according to the Eq. (2). The results of OLS regression with fixed effect estimation for 5 portfolios regarding the assets size for Altman Z-scores as endogenic variable and the 3- and 5-years EPS growth as exogenic variables are presented in Table 8.

When fixed effects are taken into consideration in a panel data analysis the 3-year growth influence significantly the Altman Z-score in an appositive way in the group of the smallest and largest companies included in Portfolios 4 and 5. The growth in

Table 5 OLS estimation for 5 portfolios regarding the assets size for Altman Z-scores as endogenic variable and the 3- and 5-years EPS growth as exogenic variables; Dependent variable: logAS. *Source*: own study

logAS	Coef.	St. error	t-ratio	*p* value	Mean dep. var	Adj Rsq	F-stat	*p* val. (F)	N
Portfolio 1					2.0076	0.022	28.2101	0.0000	1208
Const	1.9754	0.0271	72.71	< 0.0001					
EPS 3	0.0007	0.0001	5.311	< 0.0001					
Portfolio 1					2.0386	0.0025	3.3001	0.0696	898
Const	2.02259	0.0312	64.73	< 0.0001					
EPS 5	0.0003	0.0002	1.817	0.0696					
Portfolio 2					1.7321	0.0023	6.0899	0.0136	2133
Const	1.7240	0.0139	123.6	< 0.0001					
EPS 3	0.0003	0.0001	2.468	0.0137					
Portfolio 2					1.7649	0.00001	0.0261	0.8715	1999
Const	1.7642	0.0139	126.0	< 0.0001					
EPS 5	0.0002	0.0001	0.1617	0.8716					
Portfolio 3					1.4709	0.0001	1.3655	0.2426	2390
Const	1.4755	0.0139	106.1	< 0.0001					
EPS 3	− 0.0001	0.0001	− 1.169	0.2427					
Portfolio 3					1.4868	0.0025	6.8439	0.0089	2294
Const	1.4992	0.0139	107.2	< 0.0001					
EPS 5	− 0.0004	0.0001	− 2.616	0.0090					
Portfolio 4					1.2414	0.0029	6.5287	0.0106	2405
Const	1.2321	0.0154	79.90	< 0.0001					
EPS 3	0.0003	0.0001	2.555	0.0107					
Portfolio 4					1.2463	0.0011	3.5086	0.0611	2369
Const	1.2377	0.0155	79.62	< 0.0001					
EPS 5	0.0002	0.0001	1.873	0.0612					
Portfolio 5					1.0478	0.0012	4.2618	0.039	2701
Const	1.0416	0.0152	68.36	< 0.0001					
EPS 3	0.0004	0.0002	2.064	0.0391					
Portfolio 5					1.0527	0.0038	11.2142	0.0008	2660
Const	1.0357	0.0158	65.26	< 0.0001					
EPS 5	0.0011	0.0003	3.349	0.0008					

It was assumed that the coefficient is statistically significant for each *p* value lower than 0.1

Table 6 The results of tests for fixed and random effects. *Source*: own study

	The results of the tests for the occurrence of fixed effects with respect to time (Wald test)	Results of tests for the occurrence of random effects with respect to time (Breusch-Pagan test)
Total sample EPS 3	18.5636 (0.0003)	2134.64 (0.6839)
Total sample EPS 5	18.098 (0.0004)	2173.43 (0.5373)
Portfolio 1 EPS 3	48.8674 (0.0000)	9595.318 (0.7488)
Portfolio 1 EPS 5	33.6274 (0.000)	6959.492 (0.63465)
Portfolio 2 EPS 3	72.1031 (0.0000)	12,714.63 (0.3831)
Portfolio 2 EPS 5	58.8631 (0.0000)	11,797.28 (0.3504)
Portfolio 3 EPS 3	15.7687 (0.0012)	13,640.60 (0.3787)
Portfolio 3 EPS 5	15.3157 (0.0015)	13,155.48 (0.3826)
Portfolio 4 EPS 3	455.74 (0.0000)	12,816.81 (0.4255)
Portfolio 4 EPS 5	464,75 (0.0000)	12,648.13 (0.4333)
Portfolio 5 EPS 3	7.5466 (0.0564)	12,834.03 (0.3582)
Portfolio 5 EPS 5	8.0963 (0.0440)	12,756.95 (0.3559)

It was assumed that the coefficient is statistically significant for each p value lower than 0.1

Table 7 OLS regression results with fixed effect; Dependent variable: logAS. *Source*: own study

logAS	Coef.	St. error	t-ratio	p value	Mean dep. var	Adj Rsq	F-stat	p val. (F)	N
Model 1 Total sample					0.6190	0.0567	0.1874	0.0000	11,045
Const	0.6455	0.0025	257.1	< 0.0001					
lnTA	− 0.000049	0.0000	− 7.969	0.0154					
EPS 3	0.0002	0.0000	3.349	0.0788					
Model 2 Total sample					0.6190	0.0530	0.1866	0.0000	11,045
Const	0.6480	0.0046	137.9	< 0.0001					
lnTA	− 0.000089	0.0000	− 7.897	0.0157					
EPS 5	0.0001	0.0000	1.365	0.3055					

It was assumed that the coefficient is statistically significant for each p value lower than 0.1

Table 8 OLS estimation for 5 portfolios regarding the assets size with fixed effect; Dependent variable: logAS. *Source*: own study

logAS	Coef.	St. error	t-ratio	*p* value	Mean dep. var	Adj Rsq	F-stat	*p* val. (F)	N
Portfolio 1					11.222	0.57	24.3147	< 0.0001	1210
Const	10.8128	0.3733	28.96	< 0.0001					
EPS 3	0.00998	0.00202	4.931	< 0.0001					
Portfolio 1					11.0944	0.038	17.8463	< 0.0001	900
Const	10.9214	0.3977	27.46	< 0.0001					
EPS 5	0.0040	0.0026	1.540	0.1238					
Portfolio 2					6.7955	0.019	3.8021	< 0.0001	2135
Const	6.7955	0.1038	65.15	< 0.0001					
EPS 3	0.0013	0.0010	1.301	0.1934					
Portfolio 2					6.919	0.020	3.7401	< 0.0001	2001
Const	6.9263	0.1069	64.78	< 0.0001					
EPS 5	− 0.0002	0.0012	− 0.2096	0.8340					
Portfolio 3					5.2979	0.014	11.732	< 0.0001	2392
Const	5.3029	0.0888	59.70	< 0.0001					
EPS 3	− 0.00019	0.0009	− 0.1991	0.8422					
Portfolio 3					5.3625	0.014	11.437	< 0.0001	2296
Const	5.34865	0.09363	57.12	< 0.0001					
EPS 5	0.00055	0.0012	0.4394	0.6604					
Portfolio 4					4.4028	0.023	5.2346	< 0.0001	2407
Const	4.3722	0.0715	61.11	< 0.0001					
EPS 3	0.0012	0.0006	1.798	0.0724					
Portfolio 4					4.4153	0.023	5.0658	< 0.0001	2371
Const	4.3832	0.0736	59.55	< 0.0001					
EPS 5	0.0008	0.0006	1.482	0.1386					
Portfolio 5					3.6831	0.0040	3.628	0.0124	2703
Const	3.6597	0.0507	72.12	0.000					
EPS 3	0.0016	0.0007	2.320	0.0204					
Portfolio 5					3.681	0.0353	33.033	< 0.0001	2705
Const	2.5850	0.1235	20.92	< 0.0001					
EPS 5	1.3000	0.1345	9.659	< 0.0001					

It was assumed that the coefficient is statistically significant for each *p* value lower than 0.1

the 5-year period influence the condition of companies in a positive way only in a group of largest business units.

5 Conclusions

As it was expected the smaller the company the higher its growth index and the largest companies are characterized by the lowest growth rate represented by earnings per share.

The smallest companies with the highest growth rate are characterized by the highest level of Altman Z-Score. The results for the largest companies are opposite, their growth is the lowest and the condition the worst comparing to the smallest companies. This finding requires investigation in the field of financial strategies applied by companies characterized by different size and probably the stage of development.

From the other hand the highest standard deviation for Altman Z-Score is in the group of the smallest companies indicating that the state of a good performance is changing in this group of companies, in contrast to larger companies that grow slower, but their condition is not changing so often.

Standard deviation of growth indices is the highest in the medium size companies. It can explain the negative influence of EPS growth on a financial condition. This stage of growth related to the assets should be paid a special attention, to find the solution to improve this situation. Medium size companies are characterized by the lowest level of correlation between EPS growth and Altman Z-Score, and this finding confirms that they are causing problems with growth that need to be solved.

Fixed effects analysis of the influence of EPS growth and assets on financial condition confirmed the negative influence of the size on a financial condition and a positive influence of EPS 3-years growth in a whole sample. The analysis within portfolios confirmed a short-term positive influence of EPS growth in the smallest and large companies with 5-years EPS growth significant influence in the largest companies.

The limitation of this research is related to the growth measured in rather short periods. Many sectors are developing in longer periods and authors should take it into consideration in the future analysis. Finally, we can conclude that the management of growth in tested companies is efficient and EPS growth influences the financial condition as measured by Altman Z-Score in a positive way in most of the cases.

Further research can be related to the companies that went bankrupt and their growth dynamic before the distress stage. EPS growth dynamic and variability can influence the financial condition in a different way depending on the stage of development.

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