

[DOI: 10.20472/EFC.2018.009.007](https://doi.org/10.20472/EFC.2018.009.007)

**JACEK JAWORSKI**

WSB University in Gdańsk, Poland

**LESZEK CZERWONKA**

University of Gdańsk, Faculty of Economics, Poland

## **IMPACT OF CAPITAL STRUCTURE ON ENTERPRISE'S PROFITABILITY: EVIDENCE FROM WARSAW STOCK EXCHANGE**

### **Abstract:**

The aim of the paper is to diagnose the impact of the capital structure of companies listed on the Warsaw Stock Exchange on their profitability. The ratios used in the profitability measurement are Return on Sales (ROS), Return on Assets (ROA) and Return on Equity (ROE). The capital structure is characterised by the total debt ratio (DR) and long-term debt ratio (LDR). The method of the empirical study is panel analysis of data from financial statements of 372 companies listed in Warsaw in the years 1998 - 2016. As control variables, the size of the company and the rate of its growth were assumed.

The results of the study indicate that the impact of the total debt share in the capital structure on profitability is negative. On the other hand, the dependence between profitability and long-term debt is positive. In addition, it has been found out that a greater size of a company results in higher profitability. A similar relationship is observed for the company growth rate.

The limitations of the research are: a time-limited and number-limited research sample and lack of consideration in the study of external conditions (e.g. the general economic situation, the industry, internationalisation etc.).

### **Keywords:**

profitability, return on sales, return on assets, return on equity, leverage, sources of finance, capital structure

**JEL Classification:** G32, C23

## 1 Introduction

Profitability understood as the ability to generate a profit is one of the fundamental financial goals of each company. For this reason, profitability is the subject of research of many authors. One of the key directions of this research is the identification of factors shaping profitability. These factors can be divided into two groups: (1) external - resulting from market conditions and (2) internal - based on the paradigm of profitability management. Previous research proves that this second group of factors more than twice more strongly shapes the company's profitability than external conditions (Hansen, Wernerfelt, 1989; Brush et al., 1999).

Internal determinants of the enterprise's profitability include its capital structure. Generally, the capital structure can be defined as the relation between equity and debt used to finance the company's operations (Azhagaiah, Gavoury, 2011). The impact of this relationship on profitability (and vice versa) can be explained by contemporary capital structure theories. It is because the capital structure affects the cost of capital and financial risk, which in turn translate into the company's ability to multiply its value, and thus to generate profit.

The main aim of the paper is to determine whether the capital structure exerts a significant impact on the profitability of enterprises listed on the Warsaw Stock Exchange. The first part of the paper consists of the literature review. It is based on previous studies of the impact of the capital structure on the companies' profitability. The second part of the paper includes the authors' own empirical study based on financial statements of the selected companies in the years 1998-2016. The data was taken from the the Notoria database. The paper is closed by conclusions and recommendations.

## 2 Literature Review

Decisions regarding the selection of financing sources result in a specific capital structure of the company. These decisions are explained by the capital structure theories described in the literature: (1) Miller and Modigliani model, (2) the agency theory, (3) the signalling theory, (4) the pecking order theory and (5) the static trade-off theory.

In the first MM model (Modigliani, Miller, 1958), the authors showed that in the conditions of perfect market, the cost of capital and therefore the market value of the enterprise are independent of the capital structure. However, the introducing the income tax into the MM model (Modigliani, Miller, 1963) resulted in the emergence of benefits from incurring a debt as the interest tax shield. This phenomenon explains the relationship between profitability and the capital structure of the enterprise.

Debt in the agency theory (Jensen, Meckling, 1976) can temper a conflict between shareholders and managers. The paying back and servicing debt reduce the amount of cash that managers can spend on unprofitable projects. Therefore, for profitable

enterprises, it is more favourable to consider a higher level of debt, which can reduce the problem of excessive free cash flow. A similar direction of dependence was indicated by the signalling theory (Ross, 1977). A profitable company sends positive signals to creditors, which enables further debt growth. Under the static trade-off theory (Kraus, Litzenberger, 1973), the capital structure results from the comparison of tax benefits with the costs of financial difficulties. The risk of bankruptcy was considered as the cost of debt which counteracts benefits from lower tax amounts payable. In this context, profitable enterprises have lower costs associated with the risk of bankruptcy and more benefits from the interests tax shield. Therefore, they will be more interested in debt than less profitable enterprises. The negative relationship between the capital structure and profitability can be derived from the pecking order theory (Myers, Majluf, 1984). Higher profitability favours self-financing of the enterprise, and thus causes a decrease in the share of debt in the capital structure.

In the discussed theories, profitability occurs, on the one hand, as a determinant of the share of debt in the capital structure and, on the other hand, as the result of decisions regarding this structure. The first direction of dependence was the subject of many empirical studies aimed at identifying the determinants of the capital structure. A positive relationship between profitability and debt was pinpointed among others by: Antoniou et al. (2008), Aviral and Raveesha (2010), as well as Jerzemowska and Hajduk (2015). However, the most studies indicate that with the increase in profitability, debt decreases as well (Delcoure, 2007, Mazur, 2007, Frank, Goyal 2009, Alves, Ferreira, 2011, Czerwonka, Jaworski, 2017).

The impact of the capital structure on profitability is a relatively less frequent research subject. This relationship is described in strategic management studies (Barney, 2001). In a view of this approach, the use of debt, through the synergy effect, should increase return on equity. In the literature on finance and accounting, the dependence between the profitability and debt is described in the theory of the optimal structure of financing sources. The adequately shaped relationship of debt and equity leads to maximisation of profitability and, as a consequence, to multiplication of the enterprises value (Pirtea et al., 2010).

The majority of previous empirical studies prove that the capital structure significantly affects the company's profitability. But the results of these studies do not clearly indicate the direction and strength of this influence. Abor (2005), Salawu and Awolowo (2009), Margaritis and Psillaki (2010) Gill, et al., (2011) identified a positive relationship, i.e. together with the increase in debt, the profitability of the surveyed enterprises increased. This phenomenon is explained by the mentioned theories of agency and signalling. However, most authors (i.a. Azhagaiah, Gavoury, 2011; Stekla, Grycova, 2016; Habib et al., 2016; Le, Phan, 2017) detected a negative relationship. Together with the increase in the share of debt in the capital structure the companies' profitability decreases. This is a specific feature of the pecking order theory. There are also studies that diagnose a

positive or negative relationship between profitability and the level of indebtedness. The symptoms of this dependence were differentiated by for example: the nature of the company's ownership (Hamid et al. 2015) or its size (Jaisinghani, Kanjilal, 2017).

In the Polish conditions, the studies on the impact of the capital structure on profitability were developed mainly in agriculture. In the field of farming, this relationship was researched by Wasilewski (2005), Gołaś (2009), and Mądra (2010). These studies demonstrated that the growing profitability of farms is affected by the level of debt, in particular the long-term debt (positive dependence). In the case of the enterprise sector, the research did not go beyond the initial exploration phase. For companies listed on the Warsaw Stock Exchange, the contributory study was conducted by Szczepaniak (2009). On the basis of aggregated sector indicators, he pointed out that there is a strong negative relationship between the profitability and indebtedness of the studied enterprises. From the point of view of the previous research achievements, there is a need for extending and deepening these studies. In this respect, the following research hypotheses can be formulated: (H1) Profitability of companies listed on the Warsaw Stock Exchange depends significantly on the capital structure, (H2) The relationship between the share of debt in the capital structure and profitability is negative and (H3) as well as indebtedness profitability is also affected by the size and growth rate of companies.

### 3 Research Methods

Table 1 presents the measures of dependent and independent variables used in the study.

**Table 1. Measures of dependent and independent variables used in the study**

Variable		Abbreviation	Measure
Dependent	Return on Sales	ROS	$\frac{\text{profit from sales}}{\text{total sales}}$
	Return on Assets	ROA	$\frac{\text{operating profit}}{\text{total assets}}$
	Return on Equity	ROE	$\frac{\text{net profit}}{\text{equity}}$
Independent	Capital structure (primary measure)	DR	$\frac{\text{total debt}}{\text{total assets}}$
	Capital structure (auxiliary measure)	LDR	$\frac{\text{long - term debt}}{\text{total assets}}$
	Size	SIZE	$\ln(\text{total sales})$
	Growth	GROW	$\frac{\Delta \text{total assets}}{\text{total assets}} \times 100\%$

Source: own work.

Various profitability measures have been used in previous empirical studies. Most often these were: return on equity (Abor, 2005; Stekla, Grycova, 2016) return on assets (Salawu, Awolowo, 2009; Le, Phan, 2017; Azhagaiah, Gavoury, 2011). In this study, it was decided to supplement the above measures with the third of the key profitability indicators, namely return on sales (ROS).

Rajan and Zingales (1995) conducted a wide-ranging analysis of various approaches to defining and measuring the capital structure. These authors stated that the choice of the correct definition and measure should result from the specifics of the studied economy. In Poland, the most commonly used measures are the total and the long-term debt ratio (Wasilewski, 2005; Czerwonka, Jaworski, 2017).

As for control variables, it was decided to use the natural logarithm of sales revenues (enterprise size) and the dynamics of asset growth (enterprise growth). Similar variables were used by Hamid et al. (2015), Habib et. al. (2016) and others.

Data for the study was obtained from the Notoria database. The financial statements of 372 companies listed on the Warsaw Stock Exchange between 1998 and 2016 constitute the data source. Companies classified by the WSE as belonging to the finance macrosector were excluded from the research sample. The consolidated reports were used in the study. If the company had not published consolidated reports, separate reports were used. Similarly, if the consolidated financial statements of a given company covered a period of less than three years, and a separate statements covered several times longer periods, the separate financial reports were used. A total of 3984-4087 observation was examined. The number of observations varies because not all companies were listed in the period analysed. The GROW variable being an index, the number of cases amounted to 3671.

Table 2 presents descriptive statistics of the research sample. Cases of doubt (outliers) have been explained or eliminated from the study.

**Table 2. Descriptive Statistics of Research Sample**

<i>Variable</i>	<i>Arithmetic mean</i>	<i>Median</i>	<i>Stand. dev.</i>	<i>Min</i>	<i>Max</i>
ROS	0.045	0.053	0.739	-45.05	0.908
ROA	0.060	0.061	0.181	-5.919	1.559
ROE	-0.639	0.088	38.71	-2435	6.914
DR	0.510	0.480	0.347	0.023	14.24
LDR	0.146	0.109	0.149	0.000	1.693

SIZE	12.34	12.13	1.759	4.043	19.19
GROW	18.08	6.918	52.26	-91.80	963.3

Source: own work.

Among the profitability measures, a positive median value and an arithmetic mean was observed for ROS and ROA. The mean ROE is negative, while the median is positive. This indicates a large variability of this indicator, which is confirmed by the high standard deviation value. Large negative values of ROE are the result a bad financial condition of companies which generated losses for several years. Accumulated negative results caused a drop in equity to values close to zero. If the company still had a loss, then the negative ROE was high. Therefore, the median is definitely a better measure of the central tendency, especially in the case of ROE. The median values of all three measures of profitability are in the range of 5.3 to 8.8%, which indicates a moderate profitability of companies in the sample.

The values of debt ratios are more concentrated around the arithmetic mean than the profitability measures. The total indebtedness of Polish listed companies is about half of the total sources of finance, while the share of long-term debt is about 15% of the total sources of finance. The share of debt in financing sources may exceed 100% due to negative equity after a few years of accumulated losses. These are rare situations, but there have been cases as such in the sample researched.

The SIZE control variable indicates a fairly small variation in the size of the surveyed companies. The high value of the standard deviation of the GROW variable shows, in turn, very large differences in the growth rate of these companies.

Correlations between independent variables were verified using Pearson's coefficients. Table 3 shows the results obtained.

**Table 3. Correlation Coefficients of Variables Studied (critical value = 0.0233, n=7058)**

DR	LDR	SIZE	GROW	
1.0000	0.3338	0.0021	-0.0845	<b>DR</b>
	1.0000	0.0731	-0.0053	<b>LDR</b>
		1.0000	-0.0530	<b>SIZE</b>
			1.0000	<b>GROW</b>

Source: own work.

Although the values of correlation coefficients exceed the critical value, their low values indicate a small strength of diagnosed dependencies. It means that all assumed independent variables can be taken into account in the estimation of parameters of panel models.

For the identification and measurement of the significance and impact of the independent variables on the dependent variable the following econometric panel models were used:

- 1) regression model (Ordinary Least Squares Method):

$$DV_{it} = \beta_0 + \beta_1 DR_{it} + \beta_2 LDR_{it} + \beta_3 SIZE_{it} + \beta_4 GROW_{it} + \varepsilon_{it}$$

- 2) model with fixed effects:

$$DV_{it} = \beta_0 + \beta_1 DR_{it} + \beta_2 LDR_{it} + \beta_3 SIZE_{it} + \beta_4 GROW_{it} + \mu_{it}$$

- 3) model with random effects:

$$DV_{it} = \beta_0 + \beta_1 DR_{it} + \beta_2 LDR_{it} + \beta_3 SIZE_{it} + \beta_4 GROW_{it} + \mu_{it} + \varepsilon_{it}$$

where:  $DV_{it}$  stands for dependent variables,  $ROS_{it}$ ,  $ROA_{it}$  or  $ROE_{it}$ , respectively.

Azhagaiah and Gavoury (2011) and Le and Phan (2017), among others, used analogous or similar methods in their research.

The Ordinary Least Squares Method (OLS) is used for homogeneous samples. If the occurrences in the sample differ, it is appropriate to use a model with individual fixed effects. When individual effects are not the same in subsequent periods, a model with random effects should be adopted. In order to determine the existence of individual effects, the Breusch-Pagan test is applied. The Hausman test allows us to identify fixed or random individual effects (Greene, 2003).

Table 4 presents the results of model estimations.

**Table 4. Results of model estimations**

<i>Variab</i> <i>le</i>	<i>ROS</i>			<i>ROA</i>			<i>ROE</i>		
	1	2	3	4	5	6	7	8	9
Model	OLS	Fixed	Rand	OLS	Fixed	Rand	OLS	Fixed	Rand
Cons	-0.527 ***	-0.577 ***	-0.690 ***	0.085 ***	0.132 ***	0.109 ***	-7.250	-13.817	-7.250
DR	-0.123 ***	-0.112 ***	-0.112 ***	-0.325 ***	-0.342 ***	-0.342 ***	-17.299 ***	-39.269 ***	-17.299 ***
LDR	0.068	0.009	0.009	0.127 ***	0.163 ***	0,153 ***	12.039 **	32.118 ***	12.039 **
SIZE	0.050 ***	0.054 ***	0.055 ***	0.009 ***	0.005	0.007 ***	1.036 **	2.171	1.036 **

GRO W	0.0004 *	0,0004 ***	0.0004 ***	0.0005 ***	0.0004 ***	0.0004 ***	0.012	0.019	0.012
No. of obs.	3642	3642	3642	3641	3641	3641	3555	3555	3555
Adj. R2	0.016			0.427			0.005		
Breusch- Pagan test	LM = 5.74 p = 0.017			LM = 662.47 p = 4.34e- 146			LM = 0.030 p = 0.863		
Hausman test	H = 19.73 p = 0.0006			H = 4.03 p = 0.403			H = 18.42 p = 0.001		

\* variable significant at the level  $p=0.1$ .

\*\* variable significant at the level  $p=0.05$ .

\*\*\* variable significant at the level  $p=0.01$ .

Source: Own work.

The results of the Breusch-Pagan and Hausman tests indicate that for the ROS variable the adequate model is a model with individual fixed effects (No. 2). The model with random effects is adequate for ROA (No. 6), and the model OLS is adequate for ROE (No. 7).

Return on sales (ROS) is significantly affected by DR, SIZE and GROW. For the DR variable, this is a negative dependence, i.e. an increase in debt causes a drop in return on sales. For the SIZE and GROW variables, this is a positive dependence, i.e. their increase makes the return on sales higher.

For the dependent variable ROA, a statistically significant impact was identified for the LDR, SIZE, GROW and DR independent variables. The dependence is positive for the first three variables. Thus, when the long-term indebtedness, size and growth of an enterprise are higher, the return on assets also increases. The impact of the DR variable is negative, i.e. the higher the total debt ratio of the enterprise, the lower the profitability of its assets.

For the dependent variable ROE, variables DR, LDR and SIZE are statistically significant. Similarly to other types of profitability, the impact of DR is negative, while LDR and SIZE are positive.

## 4 Conclusions

Taking into account the above results, the first research hypothesis (H1) can be considered as confirmed. The capital structure has a significant impact on return on sales, return on the company's assets and return on equity. This applies to both the total debt (DR) and the long-term debt (LDR affects return on assets and return on equity, it

does not affect return on sales only). It means that the structure of financing exerts influence profitability in Polish enterprises.

The H2 hypothesis was also confirmed. The relationship between the share of total debt in the sources of financing and the three tested measures of profitability is negative. Such research results are consistent with the research results attained by many authors from different countries (ia Azhagaiah, Gavoury, 2011; Stekla, Grycova, 2016; Habib et al., 2016; Le, Phan, 2017). The theory in which profitability and indebtedness are negatively correlated is the pecking order theory.

Another observation resulting from the empirical study concerns a statistically significant positive relationship between all measures of profitability (ROS, ROA and ROE) and the size of the enterprise. A similar occurrence in the relationship was observed between ROS and ROA and the growth of the company. The more dynamic grow and the larger the enterprise, the higher its profitability. These results confirm hypothesis H3. This particular situation can lead us to the conclusion that the growth and size of the enterprise may affect various types of behavior of enterprises in the use of debt for shaping profitability. This will be the subject of the authors' further research.

The study shows that the increase in the share of debt in the capital structure of companies listed on the Warsaw Stock Exchange has a negative impact on profitability. It also can be concluded that –when the long-term debt has a positive impact on profitability, the negative impact of the total debt is primarily caused by the negative impact of short-term debt. Long-term indebtedness accounts for just over 10% of the companies' sources of finance, while the total debt accounts for approximately 50% of the sources of fund (Table 2). It means that short-term debt is, on average, about 4 times higher than long-term debt. This situation may provide evidence for excessive use of short-term debt by enterprises studied.

It should be noted that if the relationship between short- and long-term debts was reversed, the relationship between profitability and the total debt could be different. However, it does not mean, that the financing of business activity only by long-term indebtedness is more favorable than the combination of short-term and long-term debt. Therefore, it cannot be unambiguously stated that using only long-term debt would mean a positive relationship between indebtedness and profitability.

There is one fundamental limitation to this study. It concerns external factors. They may influence the presented results. The study was based on data for a specific period. Replicating research in the future in different external conditions, may lead to different results and conclusions.

## Reference

ABOR, J. (2005). The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana. *The Journal of Risk Finance*, vol. 6, no 5, pp. 438-445.

- ANTONIOU, A., GUNEY Y., AND PAUDYAL K. (2008). The Determinants of Capital Structure: Capital Market Oriented vs. Bank Oriented Institutions. *Journal of Financial and Quantitative Analysis*, vol. 43, no 1, pp. 59-92.
- ALVES, P.F.P., AND FERREIRA, M.A. (2011). Capital Structure and Law around the World. *Journal of Multinational Management*, vol. 21, no 3, pp. 119-150.
- AVIRAL, K.T., AND RAVEESH, K. (2010). Determinants of Capital Structure: Comparison of Empirical Evidence for the Use of Different Estimators. MPRA Paper, nr 48612.
- AZHAGAIH, R. AND GAVOURY, C. (2011). The Impact of Capital Structure on Profitability with Special Reference to IT Industry in India. *Managing Global Transitions*, 9 (4), pp. 371–392.
- BARNEY, J. (2001). Resource-based theories of competitive advantage: a ten year retrospective on the resource based view. *Journal of Management*, vol. 27, pp. 643–650.
- BRUSH, T.; BROMILEY, P. AND HENDRIKX, M. (1999). The relative influence of industry and corporation on business segment performance: an alternative estimate. *Strategic Management Journal*, Vol. 20, pp. 519-547.
- CZERWONKA, L., JAWORSKI, J. (2017). Determinants of Enterprises' Capital Structure in Poland. Evidences from Warsaw Stock Exchange, in print.
- DELCOURE, N. (2007). The Determinants of Capital Structure in Transitional Economies. *International Review of Economics and Finance*, vol. 16, no 3, pp. 400-415.
- FRANK, M.Z., AND GOYAL, V.K. (2009). Capital Structure Decisions: Which Factors Are Reliably Important. *Financial Management*, vol. 38, no 1.
- GILL, A., BIGER, N. AND MATHUR, N. (2011). The effect of capital structure on profitability: Evidence from the United States. *International Journal of Management*, vol. 28, no 4, Part 1, pp. 3-15.
- GOŁAŚ, Z. (2009). Czynniki determinujące rentowność kapitału własnego w rolnictwie (Factors of the profitability in agriculture). *Journal of Agribusiness and Rural Development*, vol. 1(11), pp. 75-91.
- GREENE, W.H. (2003). *Econometric analysis*. NJ: Prentice Hall, Upper Saddle River.
- HABIB, H.J., KHAN, F., AND WAZIR, I. (2016). Impact of debt on profitability of firms: Evidence from non-financial sector of Pakistan. *City University Research Journal*, vol. 6, no 1, pp. 70-80.
- HAMID, M.A., ABDULLAH, A., AND KAMARUZZAMAN, N.A. (2015). Capital Structure and Profitability in Family and Non-Family Firms: Malaysian evidence. *Procedia Economics and Finance*, vol. 31, pp. 44-55.
- HANSEN, G. AND WERNERFELT, B. (1989). Determinants of Firm Performance: The relative Importance of Economic and Organizational Factors. *Strategic Management Journal*, Vol. 10, No. 5, pp. 399-411.
- JAISINGHANI, D., AND KANJILAL, K. (2017). Non-linear dynamics of size, capital structure and profitability: Empirical evidence from Indian manufacturing sector. *Asia Pacific Management Review*, vol. 22, pp. 159-165.
- JENSEN, M.C. AND MECKLING, W.H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, vol. 3, no. 4, pp. 305-360.
- JERZEMOWSKA, M. AND HAJDUK, A. (2015). Wpływ rentowności przedsiębiorstwa na strukturę kapitału na przykładzie spółek akcyjnych notowanych na Giełdzie Papierów Wartościowych w Warszawie (Impact of Company Profitability on Capital Structure on Example of Companies Listed on the Warsaw Stock Exchange). *Zeszyty Naukowe UE w Krakowie (Scientific Yearbook of Economic University in Krakow)*, no 2(938), pp. 45-57. [in Polish]

- LE, T.P.V., PHAN, T.B.N. (2017). Capital structure and firm performance: Empirical evidence from a small transition country. *Research in International Business and Finance*, vol. 42, pp. 710-726.
- MARGARITIS, D., AND PSILLAKI, M. (2010). Capital Structure, Equity Ownership and Firm Performance. *Journal of Banking and Finance*, vol. 34, pp. 621-632.
- MAZUR, K. (2007). The Determinants of Capital Structure Choice: Evidence from Polish Companies. *International Advances in Economic Research*, vol. 13, iss. 4, pp. 495-514.
- MAĐRA, M. (2010). Poziom zadłużenia a dochód w indywidualnych gospodarstwach rolniczych (Debt level and income in individual farms). *Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu (Scientific Yearbook of the Association of Agricultural and Agribusiness Economists)*, vol. 12, no 3, pp. 269-274.
- MODIGLIANI, F., AND MILLER, M. (1963). The Corporate Income Taxes And The Cost Of Capital: A Correction, *American Economic Review*, vol. 53, no. 3, pp. 433-443.
- MODIGLIANI, F., AND MILLER, M. (1958). The cost of capital, corporate finance and the theory of investment. *American Economic Review*, iss. 48, pp. 261–297.
- MYERS, S.C., AND MAJLUF, N.S. (1984). Corporate Financing and Investment Decisions when Firms have Information that Investors do not have. *Journal of Financial Economics*, no. 13, pp. 187-221.
- NOTORIA DATABASE, ver. IV quarter 2017, <http://ir.notoria.pl/>, (accessed on 16.11.2017)
- PIRTEA, M., BOȚOC, C. AND NICOLESCU, C. (2010). The impact of financing policy on the company's value. *The Annals of the University of Oradea. Economic Sciences*, Tom XIX, 1st Issue – July, pp. 388-393.
- RAJAN, R. G., AND ZINGALES, L. (1995). What Do We Know about Capital Structure? Some evidence from International Data, *Journal of Finance*, vol. 50, pp. 1421- 1460.
- ROSS, S.A. (1977). The Determination of Financial Structure: The Incentive-Signalling Approach. *The Bell Journal of Economics*, vol. 8, no. 1, pp. 23-40.
- SALAWU, R.O., AWOLOWO, O. (2009), The effect of capital structure on profitability: An empirical analysis of listed firms in Nigeria. *The International Journal of Business and Finance Research*, vol. 3, no 2, pp. 121-129.
- STEKLA, J., GRYCOVA, M. (2016). The relationship between profitability and capital structure of the agricultural holdings in the Czech Republic. *Agricultural Economics – Czech*, vol. 9, pp. 421-428.
- SZCZEPANIAK, P. (2009). Struktura kapitałowa przedsiębiorstwa a cele właścicieli na przykładzie polskich spółek giełdowych (The capital structure of the company and the objectives of the owners on the example of Polish listed companies). *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu. Nauki o Finansach (Scientific Yearbook of the University of Economics in Wrocław. Science of Finance)*, vol. 1, no 61, pp. 271-280.
- WASILEWSKI, M. (2005). Efektywność gospodarstw indywidualnych w zależności od stopnia wykorzystania kapitału obcego (Dependence of efficiency of individual farms on the use of debt). *Acta Scientiarum Polonorum. Oeconomia*, vol. 4, pp. 83-95.