

**STUDY ON APPRECIATION OF FINANCIAL EQUILIBRIUM IN
THE COMPANIES LISTED ON THE BUCHAREST STOCK
EXCHANGE**

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Abstract:

This paper presents the development of two important indicators in assessing the financial equilibrium of an economic entity, namely the working capital and financial leverage for 24 companies listed and traded on the Bucharest Stock Exchange, that belong to industry hotels and restaurants, during a period of 8 financial years (2007-2014). Starting from 2011 the economic and financial crisis had a severe impact on the companies included in the research, the financial health been altered to the extent that half of the companies registered a state of financial disequilibrium. By using simple linear regression model, it was concluded that the change in value of financial leverage has a strong influence of the opposite size on the working capital.

Key words: *financial equilibrium, working capital, financial leverage, linear regression, permanent capital*

JEL classification: G320, C260

1. Introduction

The concept of financial equilibrium suggests the idea of harmony between system components or sources of financing of an economic entity and their financing needs. In appreciation of financial position, the financial equilibrium economic entities has been and remains a constant concern for financial analysts, researchers and external users of information from the annual financial statements.

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The main rules of financial equilibrium (M. Petcu, 2009, p.437), characteristic of a moderate financial policy, consisting in time correlation of liquidity of assets and liabilities exigibility, as follows:

- for ensuring financial equilibrium in the long term assets should be financed by permanent capital;
- the financial equilibrium in the short term is ensured when the current assets are financed by current liabilities.

The working capital indicator, often used in economic practice, is an important factor in the appreciation of the financial equilibrium, as it highlights the financing and investing policy of a company in the long term (Șușu Ș. 2014, p.187). Is determined based upon the information provided by financial statement, representing the surplus of financial sources that are released after covering permanent assets of permanent sources, which can be used for financing current assets. Concretely, the net working capital is the permanent capital that exceeds the value of net assets, which is intended for the financing current assets.

Debt to equity ratio (financial leverage) is the indicator which, through correlation with other specific indicators helps to determine the state of financial equilibrium a company's (Hristea A.M. 2015, p.263).

Georgescu, G. (2013, p.5) considers that the financial equilibrium is important to analyze at the macroeconomic scale, also other financial experts appreciate the idea of financial equilibrium at the level of economic entities (Miron Vasile C.I. 2015 p.324).

In the paper *Fondements de gestion financière-Manuel et Applications*, the authors Corhay and Mbangala (2007, p.195) highlight the need for financial equilibrium, relying on the principle that companies long-term investment should be financed by permanent sources.

Other specialists (Balteș N., 2010, p. 86; Suciu G., Bârsan P.N. 2013, p.160), stress the need to determine financial equilibrium based on two levels, namely the top part of the financial balance sheet, between permanent sources and permanent needs, and the bottom part of the financial balance sheet between current sources and current needs.

2. Literature review

The consideration of the financial equilibrium is important for all external users of information provided by the annual statements: shareholders,

creditors, potential investors, employees, financial analysts, etc., been confirmed by the multitude of research conducted on this topic.

The analysis of the financial equilibrium for 11 companies in the construction sector (period 2001-2006) performed by Bărbuță-Mișu N. (2009), leads the authors to denote the relevance of the specific indicators in assessing the financial equilibrium state.

Solomon C.D. and Bucur I. (2014) conducted a detailed study on the financial equilibrium of a company for a period of 10 years (2004-2013), highlighting that the specific indicators they use to create a picture of the current state of the company and underline the measures that must be taken for a good operation of the business in the future.

Specialist literature brings out several studies on the correlation between working capital and financial leverage, as well as their relations with other indicators. Taleb G., Zoued A., Zoued N. și Shubiri, F.N., using data of 82 industrial companies listed on the Amman Stock Exchange, for a period of 3 years, emphasizes in their study the a strong negative correlation between financial leverage and working capital. We meet the same conclusions in the study conducted by Akinlo, O.O. (2012) on a total of 66 companies from Nigeria, period 1997-2007. On the contrary, the working capital needs and profitability, according to some studies (Asmawi, N.S. and Faridah, S. 2012) are in positive and tight relationship.

Musazadeh A., Aslani A. and Hassanzadeh M. (2014), have studied in 430 companies, listed on the Tehran Stock Exchange, the relationship between working capital and economic value added, validating the hypothesis that there is a positively correlation between the two indicators.

The studies performed by Goela U., Chadha S. and Sharma A.K. (2015), Šarlija N. and Harc M. (2012), have shown that there is a close connection between financial leverage and liquidity rates and the relationship is stronger in the short term.

3. Research Methodology

Our study was performed on 24 companies listed and traded on the Bucharest Stock Exchange (BVB), which operate in the hotel industry (CAEN code 5510) and restaurants (CAEN code 5610) over a period of 8 financial years, respectively 2007-2014. Data was collected from the individual

companies annual financial statements published on the website www.bvb.ro, and published annual reports on their websites.

For the achievement of the correlation between the working capital and financial leverage, a simple linear regression model was used, thus establishing a single independent variable influencing the dependent variable. The testing for correlation between variables was performed with the program IMB Statistics SPSS V22. The dependent variable (working capital) was determined based on the top of the financial balance sheet as the difference between permanent capital and assets net marks the plus or availability of permanent equity across the net value of assets, that can be allocated to finance current assets, according to the model (Petrescu, S., 2008, pp.196):

$$\text{Working Capital} = \text{Permanent capital} - \text{net assets}$$

(1)

The independent variable, represented by the financial leverage, has been determined as the ratio between total debt and equity (Ross S.A., Westerfield R.W., Jorda B.D, 2002, p.98):

$$\text{Financial Leverage} = \text{Total debts} / \text{Equity} * 100$$

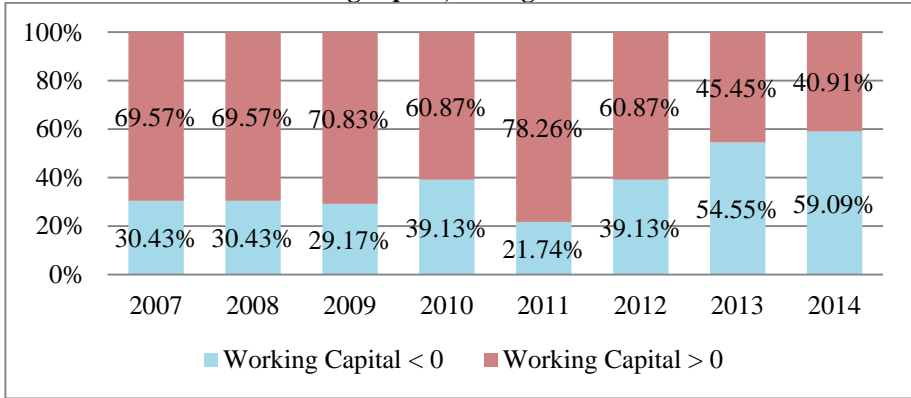
(2)

Financial leverage is used for assessment of the financial risk, the recommended maximum level is 60% (Balteş N., Vasiu, D.E. 2015, p. 128).

4. Empirical study on the assessment of financial equilibrium based on the correlation of working capital - financial leverage

Figure no. 1 shows the grouping of companies belonging to the sector of hotels and restaurants listed and traded on the BVB, according to the recorded values of the working capital (positive or negative).

Figure 1: Grouping companies according to positive or negative values of working capital, during 2007-2014

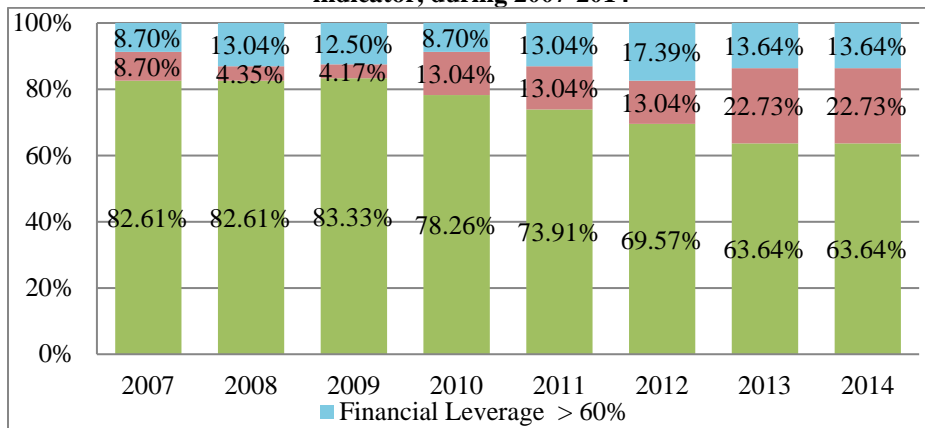


Source: Authors processing based on the annual financial statements, the period 2007-2014, of listed and traded companies on the BVB, the hotel and restaurants industry available on site www.bvb.ro

The share of companies that recorded positive working capital is relatively constant in the first three years analyzed. Since 2010 we observe a variable evolution of this share, the share of companies with positive working capital increasing as of 2011, followed by a reduction from 2012. If, at the end of 2011, the share of companies that have registered positive working capital was over 78% in the next period we are witnessing substantial reduction of their share, so that, in the years 2013-2014 the majority of the companies registered negative working capital. It can be said with certainty that, from 2013, most of the companies included in the research, were in a situation of financial disequilibrium, following the de-capitalization of their financing assets being accomplished in a large part from debt with chargeability of less than a year.

Grouping of companies included in the research according to each financial leverage indicator is shown in figure no. 2.

Figure 2: Grouping companies according the values of financial leverage indicator, during 2007-2014



Source: Authors processing based on the annual financial statements, the period 2007-2014, of listed and traded companies on the BVB, the hotel and restaurants industry available on site www.bvb.ro

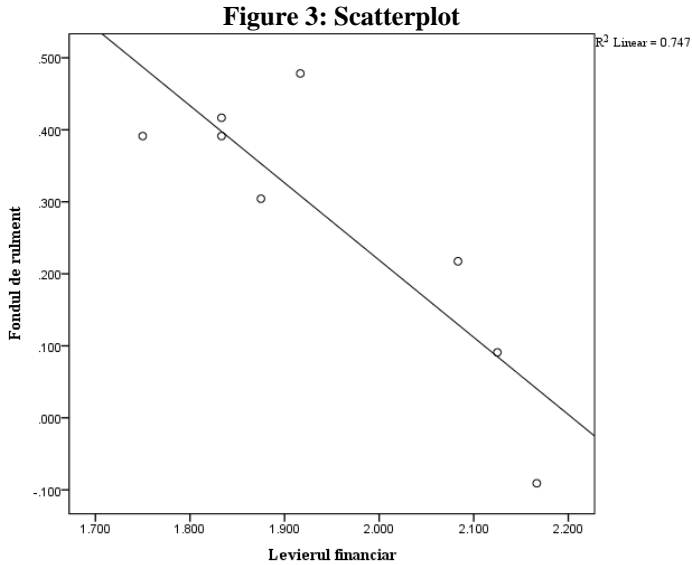
Though slightly decreasing, the share of companies that record values of financial leverage below 30% is relatively high throughout the period under research. In the years 2007-2009, over 82% of companies recorded had a low level of debt. Since 2010, it emphasizes the growth of debt (especially long term) so that the indebtedness of the companies included in the research is increasing slightly, towards the end of the reviewed period only 63% of companies registered normal levels for this indicator.

Starting from the standard model for determining the linear relationship between two variables (Baltagi B.H., 2008, p.49), $Y = \alpha + \beta X + \mu$, wherein: Y = dependent variable; X = independent variable; α and β point of intersection and the ordinate and μ = residual variable of the regression model, the linear regression equation is represented as follows:

$$\text{Working Capital} = \alpha + \beta \text{ Financial Leverage} + \mu \quad (3)$$

The scatterplot graph (Figure 3) shows on the OX axis the evolution of the independent variable (financial leverage) and on the OY axis the evolution of the dependent variable (working capital). The coefficient of determination

R^2 linear is 0.747, confirms the existence of a significant correlation between the two variables, but the descending trend line demonstrates a negative relation between variables.



Source: authors processing via the SPSS program

Correlations table (table no. 1), indicate the connection between the two variables and the risk threshold (Sig.).

Table 1: Correlations

		Working Capital	Financial Leverage
Pearson Correlation	Working Capital	1.000	-.865
	Financial Leverage	-.865	1.000
Sig. (1-tailed)	Working Capital		.003
	Financial Leverage	.003	
N	Working Capital	8	8
	Financial	8	8

Leverage

Source: authors processing via the SPSS program

Pearson Correlation indicator, used for the determination of the relationship between the observed values, records the value of -0.865, which indicates a very strong correlation, but negative between the two indicators, an increase in working capital will cause a reduction in financial leverage.

The recorded value of R^2 linear = 0.747 (table no. 2), confirms the hypothesis, 74.7% of the variation of working capital is correlated to the change financial leverage, the difference of 25.3% being due to variation residual variable (μ).

Table 2: Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.865 ^a	.747	.705	.104687

a. Predictors: (Constant), Financial Leverage

Source: authors processing via the SPSS program

The data presented in table no. 3 confirms the relevance of regression equation and table 4 provides specific information for the estimated coefficients of the regression model, meaning that the independent variable influences the dependent variable.

Table 3: ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	.195	1	.195	17.760	.006 ^b
Residual	.066	6	.011		
Total	.260	7			

a. Dependent Variable: Working Capital

b. Predictors: (Constant), Financial Leverage

Source: authors processing via the SPSS program

Table 4: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	2.364	.497		4.756	.003	1.148	3.580
Financial Leverage	-1.072	.254	-.865	-4.214	.006	-1.695	-.450

a. Dependent Variable: Working Capital

Source: authors processing via the SPSS program

The independent variable has a calculated regression coefficient of -1.072, respectively with an increase of 1 unit in the value of financial leverage, the value of working capital is decreased by 1.072. The standard error for the financial leverage has a small value of 0.254, respectively 0.497 for the constant, which leads us to the validation of the linear regression model with all the included records with standard errors, which are at a low level, so that the independent variable can be considered consistent in terms of prediction.

The registered value of Sig 0.003 for the constant is respectively 0.006 for the independent variable is below the threshold of risk, which leads us to conclude that the statistical model is relevant, the null hypothesis is rejected and we accept the correlation between the dependent variable and the independent.

Based on the recorded values of α and β parameter estimation regarding simple linear regression model (Table no. 4) was obtained the following model on determining the working capital:

$$\text{Working Capital} = 2.364 + (-1.072 \times \text{Financial Leverage})$$

(4)

5. Conclusions

The research conducted revealed that the companies in the hotel and restaurants industry, listed and traded on the BVB during the period 2007-

2014, reported difficulties in ensuring a financial equilibrium on the long-term. Since 2013, most of the companies included in the research, were in a situation of financial disequilibrium, following their de-capitalization, financing assets being accomplished in a large part from debt with chargeability of less than a year.

Pearson Correlation indicator, used for the determination the relationship between the observed values, recorded a value of -0.865, which indicates a strong correlation in negative direction between the two indicators, respectively an increase in value of working capital will cause a decrease in the value of financial leverage, and vice versa. The study showed that over 74% of the variation of working capital is accounted by the variation of financial leverage, and the difference 25.3% is due to variation of the residual variable.

In our future research, we intend to witch extend the developments of other indicators such as solvency, liquidity, profitability and economic value added influences the financial equilibrium of the companies in the hotel and restaurant industry, listed and traded on the BVB.

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