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Analysis of the impact of financial balance indicators on the stock market performance of companies listed on the Bucharest Stock Exchange

ANALYSIS OF THE IMPACT OF FINANCIAL BALANCE INDICATORS ON THE STOCK MARKET PERFORMANCE OF COMPANIES LISTED ON THE BUCHAREST STOCK EXCHANGE

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Abstract

This paper deals with the topic of the impact brought by the factors that contribute to the determination of financial balance indicators on the profitability of Romanian companies listed on the Bucharest Stock Exchange during several consecutive financial years.

The subject under research was the subject of several studies that make up the specialized literature. The purpose of the research is to analyse the existence and intensity of the link between the financial balance indicators, determined semi-annually, and the economic performance of the companies, expressed through the profitability indicators. The research method used in the elaboration of the present study is that of multiple regression analysis of the data, applied using the SPSS statistical program.

Introduction

In today's economic environment, investors and financial analysts focus their attention on the financial ratios and stock market performance of companies listed on various stock exchanges. So, in a constantly changing world, understanding the factors that influence the stock market performance of these companies becomes increasingly important.

One of the crucial aspects that can affect a company's stock market performance is its financial balance. This complex concept reflects a company's ability to finance its current activities and to meet its short- and long-term financial obligations.

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Several financial indicators are used to assess financial balance, such as liquidity, solvency and profitability. In this research paper, we aim to analyse the impact of financial balance indicators on the stock market performance of companies listed on the Bucharest Stock Exchange (BSE).

The objective of the study is to examine the relationship between financial balance indicators and the stock market performance of companies listed on the BSE.

The research method used in the elaboration of the study is that of the multiple regression analysis of the data, applied with the help of the SPSS statistical program. The research is conducted on the real data reported by 50 companies listed on the Bucharest Stock Exchange, which make up the studied sample. The financial data were extracted from the financial reports prepared by the companies, and the stock market data from the history of the Bucharest Stock Exchange.

The results of this study can provide investors, financial analysts and other stakeholders with valuable information on the importance of financial balance in making investment decisions. Also, the results can contribute to the development of more effective strategies for managing the financial balance and improving the stock market performance of companies listed on the BSE.

1.　Review of the scientific literature

The article entitled "The impact of accounting indicators and growth on the market value" (2014), by Farouq Rafiq Altahtamouni and Zaher Abdelfattah Alslehat from the National University of Irbid, Jordan, focuses on the study of the impact of accounting indicators on the market capitalization value of banking companies. The researchers used accounting data from 2002 to 2011 and applied simple regression and least squares to examine the relationship between these indicators and the share trading price and market value of the companies in the sample. The results obtained by the authors showed that the financial-accounting indicators have a direct influence on the share trading price and the market value of the studied companies, which suggests that the financial performance and accounting position of banking companies have a significant impact on the valuation by investors and their market value.

The study by Altahtamouni and Alslehat (2014) brings to the fore the importance of accounting analysis in evaluating the performance and market value of banking companies. The obtained results can be useful for investors, financial analysts and other entities interested in understanding and evaluating the risk and return of investments in the banking sector. The study carried out by the researchers from Jordan is part of a wider context of research that explores the connection between the communication of financial-accounting data and the trading price of the analysed companies' shares.

Previous studies have highlighted this relationship and provided support for further investigation of this link. For example, Lambert and Larcker (1987) found an interdependence between accounting information and stock performance in 370 companies from various sectors in the United States of America.

At the same time, Hanlon (1991) analysed the data of 222 British companies and concluded that there is a significant correlation between financial information and the value of the stock market capitalization.

Studies such as the one carried out by Olson and Pagano (2005) or by Pandey (2005) also focus on the influence of the publication of financial data on the stock market performance of the analysed companies. These researchers examined data from companies in the US and Malaysia, respectively, and found that the share trading price, which is a key factor in determining market capitalization, is strongly influenced by financial communication made by the business environment, regardless of the sector of activity of companies.

Thus, the research fits into a wider context of studies that emphasize the importance of financial data communication and their impact on the evaluation and performance of companies on the stock market. These findings contribute to the understanding of the complex link between financial-accounting information and the market values of companies.

Masoud (2013), in his paper entitled "The Impact of Stock Market Performance upon Economic Growth", analyses the causal link between stock market performance and economic growth in a simple theoretical and empirical framework. The author investigates various views of researchers regarding the importance of securities markets in economic growth processes by performing the following functions: improving liquidity, aggregating, and mobilizing capital, monitoring managers and exercising corporate control.

The findings suggest a positive relationship between efficient stock markets and economic growth in both the short and long run, with evidence of an indirect transmission mechanism through the effect of stock market development on investment.

2. Research methodology

The research was carried out using the SPSS computer program. This is a software program widely used around the world, contributing to social science research by performing statistical analysis of data.

The primary data on which the present study was developed were taken both from the financial reports published by the companies listed on the Bucharest Stock Exchange, and from the securities trading history, available on bvb.ro. These allowed the determination of the analysis indicators, which constitute the quantitative variables. Thus, the Pearson correlation coefficient determination methodology is applied in the correlation analysis.

In addition to the correlation analysis, in order to characterize as accurately as possible, the impact brought by the balance indicators on the stock market performance of the companies listed on the Bucharest Stock Exchange, a multiple regression analysis was also performed.

The financial balance, through the information it denotes regarding the company for which they are calculated, characterizes the enterprise from the point of view of the materialized financial flows at its level. Prudent investors will not place money for capital formation of companies facing financial problems, which is why the demand for shares issued by companies in this category decreases. With this fact taking place, the capital market will also automatically record price drops for the respective securities, which will also generate a drop in the stock market indicator that measures the capitalization value of the company. In this case, knowing the values of general liquidity (LG), general solvency (SG), working capital (FR), fixed assets financing (FI) or current assets financing rate (RFAC), will determine an impact on share price (PA) and market capitalization (MK).

Table no. 1. Description of variables

No.	Variables	Symbol	u.m.
1.	**Dependent variables**		
2.	Share price	lnPA	%
3.	Market capitalization	lnMK	%
4.	**Independent variables**		
5.	general liquidity	lnLG	%
6.	general solvency	lnSG	%
7.	working capital	lnFR	%
8.	financing of fixed assets	lnFI	%

Source: authors' contribution

The sample of data based on which the study is carried out includes 50 companies listed on the Bucharest Stock Exchange, and the period covered by the research is between June 2018 and June 2022. The data were collected from the BSE website, based on published financial statements, for the entire analysed period.

To estimate the impact of the financial balance on the stock market performance, it is necessary to carry out a regression analysis, two regression models being developed.

Table no. 2. Proposed econometric models

Share price	$lnPA = \beta_0 + \beta_1 * lnLG + \beta_2 * lnSG + \beta_3 * lnFR + \beta_4 * lnFI + \varepsilon$
Market capitalization	$lnMK = \beta_0 + \beta_1 * lnLG + \beta_2 * lnSG + \beta_3 * lnFR + \beta_4 * lnFI + \varepsilon$

Source: authors' contribution

The estimated econometric models are based on both the stock market performance component of the companies, expressed through the dependent variables share price and stock market capitalization, and the balance component, expressed through the

independent variables selected to explain the econometric model, these being general liquidity, general solvency, the fund of rolling stock and fixed asset financing.

The research question from which the study starts sheds light on the effect of financial balance indicators on the stock market performance of companies, the research question being formulated as follows: to what extent can the financial balance indicators manifest their impact on the stock market performance of companies?

Through the information they provide, financial statements contribute to the possibility of their users to determine the value of a wide range of economic indicators, with the help of which the financial position of the company can be characterized at a certain moment. These indicators are determined by applying the theory in the field of economic-financial analysis, using the amounts found under the various balance sheet items.

When substantiating the decision to invest in the formation of the capital of a company listed on the stock exchange, stakeholders show a major interest in having information regarding indicators such as: general liquidity, general solvency, working capital, financing of fixed assets or the financing rate of current assets.

All these data contribute to the knowledge of the state of financial balance of a company, aspects closely related to its results and the rates of return recorded.

Financial balance indicators focus on the company's treasury and its cash flows. Through them, it can be established whether the company is going through difficult periods from the point of view of liquidity availability or from the point of view of covering due debts.

By determining the overall liquidity, the investor discovers the company's ability to honour its short-term debts, which can represent salaries, unpaid suppliers, current interest, based on the current assets held, such as cash available in the company's cash register or bank accounts, receivables or stocks. Mathematically, general liquidity is calculated by relating current assets to current liabilities, an indicator value between 1 and 1.50 representing the ideal scenario experienced by a company.

The proposed research hypothesis to be tested is the following: Hypothesis H1 - The indicators that define the financial balance of the company, as an expression of the financial-accounting information, have a direct impact on the share price and the stock market capitalization.

3. Results and discussions

Based on the results obtained after performing the correlation analysis and the regression analysis, a set of information was obtained that characterizes the link between the financial balance of the companies and the stock market performance.

Based on the financial balance indicators calculated according to the accounting information contained in the reports of the companies listed on the Bucharest Stock Exchange, both the correlation and the regression analysis were developed. Keeping the

unity of the research methodology, the determination of the Pearson correlation coefficient can be summarized by the following table:

Table no. 3. Correlation analysis results

		lnPA	lnLG	lnSG	lnFR	lnFI	lnRFAC	lnMK
lnPA	Pearson Correlation	1	-.161(*)	.281(**)	.467(**)	.142(*)	0.121	.508(**)
	Sig. (2-tailed)		0.024	0.000	0.000	0.048	0.138	0.000
	N	196	196	196	151	195	151	196
lnLG	Pearson Correlation	-.161(*)	1	-.710(**)	-.395(**)	-.629(**)	-.648(**)	-0.079
	Sig. (2-tailed)	0.024		0.000	0.000	0.000	0.000	0.269
	N	196	200	200	153	199	153	200
lnSG	Pearson Correlation	.281(**)	-.710(**)	1	.226(**)	.267(**)	.462(**)	.240(**)
	Sig. (2-tailed)	0.000	0.000		0.005	0.000	0.000	0.001
	N	196	200	200	153	199	153	200
lnFR	Pearson Correlation	.467(**)	-.395(**)	.226(**)	1	.241(**)	.496(**)	.727(**)
	Sig. (2-tailed)	0.000	0.000	0.005		0.003	0.000	0.000
	N	151	153	153	153	153	153	153
lnFI	Pearson Correlation	.142(*)	-.629(**)	.267(**)	.241(**)	1	.524(**)	-0.110
	Sig. (2-tailed)	0.048	0.000	0.000	0.003		0.000	0.121
	N	195	199	199	153	199	153	199
lnRFAC	Pearson Correlation	0.121	-.648(**)	.462(**)	.496(**)	.524(**)	1	0.002
	Sig. (2-tailed)	0.138	0.000	0.000	0.000	0.000		0.982
	N	151	153	153	153	153	153	153
lnMK	Pearson Correlation	.508(**)	-0.079	.240(**)	.727(**)	-0.110	0.002	1
	Sig. (2-tailed)	0.000	0.269	0.001	0.000	0.121	0.982	
	N	196	200	200	153	199	153	200

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: data processed by the authors using SPSS.

The correlation analysis of the financial balance indicators, determined annually, with the share price shows a trend similar to that of the half-yearly reports, in the sense that the working capital and general solvency indicators establish the strongest links with the dependent variable, the Pearson coefficient having the values of 0.467 and 0.281, respectively. Asset financing is also directly and significantly correlated, and general liquidity inversely and strongly, with the coefficient having values of 0.142 and -0.161 respectively. A weaker correlation is established between the stock price and the current

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asset financing ratio, at 0.121. The accuracy of the results of significant correlations is ensured by the value of Sig < 0.05.

Complementarily, the correlation analysis of the stock market capitalization with the financial balance indicators reinforces the idea that the accounting information provided by these parameters influences the market value of the companies.

Next, the most significant values of the Pearson correlation coefficient are found in relation to working capital and general solvency, of 0.727 and 0.240, respectively.

An almost imperceptible but positive correlation is established between the stock market capitalization and the financing rate of current assets, having the coefficient equal to 0.002. Inverse correlations appear between stock market capitalization and fixed assets financing (-0.110), respectively general liquidity (-0.079). Also, Sig values < 0.05 certify the two correlations as significant.

In addition to correlation analysis, multiple regression analysis was also addressed on the same statistical data. Regarding the stock price, the regression model can be summarized as follows:

Table no. 4. Model Summary(b) for share price

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.566(a)	.321	.297	1.81891	.698

a Predictors: (Constant), lnRFAC, lnSG, lnFR, lnFI, lnLG;
b Dependent Variable: lnPA;
Source: data processed by the authors using SPSS.

The regression model means that the analysis has a coefficient of determination R^2=0.321, which represents an explanation of 32.10% of the change in the stock price, in relation to the independent variables, the profitability indicators analysed.

Table no. 5. ANOVA(b) for share price

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	226.583	5	45.317	13.697	.000(a)
	Residual	479.723	145	3.308		
	Total	706.306	150			

a Predictors: (Constant), lnRFAC, lnSG, lnFR, lnFI, lnLG;
b Dependent Variable: lnPA;
Source: data processed by the author using SPSS

The table above confirms the results of the analysis, reflecting the fact that the regression model is statistically valid, based on the p-value=0.0000 (Sig. column). According to the theories applied in the statistical analysis of economic-financial data, a p-value lower than 0.05 gives validity to the consequences observed following the processing of the respective data.

Table no. 6. Coefficients(a) for share price

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	-15.056	3.894		-3.866	.000
	lnLG	1.222	.370	.443	3.303	.001
	lnSG	.807	.253	.356	3.186	.002
	lnFR	.705	.099	.564	7.155	.000
	lnFI	-.229	.578	-.038	-.397	.692
	lnRFAC	.073	.321	.024	.228	.820

a Dependent Variable: lnPA;
Source: data processed by the authors using SPSS

Based on the coefficients of the multiple regression model determined for the annual reports, an equation of the influence of the financial balance indicators on the share price can be estimated in the form:

lnPA = -15,056 + 1,222lnLG + 0,807lnSG + 0,705lnFR - 0,229lnFI + 0,073lnRFAC

In this case, it is observed that when one of the indicators general liquidity, general solvency, working capital and the financing rate of current assets increases by a percentage, the stock market price of the shares appreciates by 1.222%, 0.807%, 0.705%, respectively 0.073%. Conversely, when the asset financing indicator decreases by one percent, the trading price of shares decreases by 0.229%.

Considering the regression analysis of the dependent variable, the stock market capitalization, in relation to the independent variables, the financial balance indicators, we can synthesize the following model:

Table no. 7. Model Summary(b) for market capitalization

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.904(a)	.816	.810	.81890	1.252

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.566(a)	.321	.297	1.81891	.698

a Predictors: (Constant), lnRFAC, lnSG, lnFR, lnFI, lnLG;
b Dependent Variable: lnMK;
Source: data processed by the authors using SPSS

The regression model means that the analysis has a coefficient of determination $R^2=0.816$, which represents an explanation of 81.60% of the volatility of the companies' market value, in relation to the independent variables, the analysed financial balance indicators.

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Table no. 8. ANOVA(b) for market capitalization

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	438.479	5	87.696	130.773	.000(a)
	Residual	98.578	147	.671		
	Total	537.057	152			

a Predictors: (Constant), lnRFAC, lnSG, lnFR, lnFI, lnLG;
b Dependent Variable: lnMK;

Source: data processed by the authorss using SPSS

This table validates, from a statistical point of view, the results of the regression analysis, based on the value p-value=0.0000 (column Sig.). A p-value less than 0.05 gives increased validity to the results obtained from statistical data processing.

Table no. 9. Coefficients(a) for market capitalization

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	1.122	1.684		.667	.506
	lnLG	.760	.153	.317	4.950	.000
	lnSG	.829	.107	.439	7.771	.000
	lnFR	1.069	.044	.995	24.079	.000
	lnFI	-.271	.258	-.051	-1.049	.296
	lnRFAC	-1.101	.129	-.462	-8.529	.000

a Dependent Variable: lnMK;

Source: data processed by the authors using SPSS

Based on the coefficients determined in the regression analysis of the dependent variable, the stock market capitalization, in relation to the independent variables, the financial balance indicators, an equation of the form can be estimated:

lnMK = 1,122 + 0,760lnLG + 0,829lnSG + 1,069lnFR - 0,271lnFI - 1,101lnRFAC

The previously determined coefficients show us that with a 1% increase in an indicator between general liquidity, general solvency and working capital, the stock market capitalization will appreciate by 0.760%, 0.829%, and 1.069%, respectively. On the contrary, when the financing of fixed assets and the financing rate of current assets decrease by one percent, the market value of the companies will decrease by 0.271% and by 1.101%, respectively.

The results obtained following the substantiation of the methodology regarding the multiple regression analysis applied to the data from the companies listed on the Bucharest Stock Exchange, allow the validation of those achieved following the correlation analysis. Also, in this way the unity of the research is ensured.

Conclusions

According to the results of the model, we can see that there is a significant relationship between the indicators general liquidity, general solvency, working capital, current assets financing ratio and share trading price.

A one percent increase in the general liquidity indicator is associated with a 1.222% appreciation in the stock's trading price. Similarly, a one percent increase in overall solvency is associated with a 0.807% appreciation in stock trading price.

In terms of working capital, a one percent increase in this indicator is associated with a 0.705% appreciation in the share trading price. Likewise, a one percent increase in the current asset financing ratio is associated with a 0.073 percent appreciation in the stock's trading price. On the other hand, we note that a one percent decrease in the asset financing indicator is associated with a 0.229% decrease in the share trading price.

These results suggest that the factors of liquidity, solvency, working capital and financing of current assets have a positive influence on the share trading price, while financing of fixed assets has a negative influence. It is important to keep these relationships in mind when evaluating and investing in the stock market.

A 1% increase in the indicators of general liquidity, general solvency and working capital is associated with an appreciation of the stock market capitalization by 0.760%, 0.829% and 1.069%, respectively. This means that an improvement in financial indicators leads to an increase in the market value of companies listed on the Bucharest Stock Exchange. On the other hand, we observe that a 1% decrease in fixed assets financing indicators and the current assets financing ratio is associated with a decrease in the market value of companies by 0.271% and 1.101%, respectively. This suggests that a decrease in the value of these financial indicators has a negative impact on the market value of companies.

The results obtained from the multiple regression analysis confirm the correlations previously identified in the correlation analysis.

The research work shows us that accounting information is the basis of economic processing, and it plays a decisive role in substantiating the decision to invest in the formation of a company's capital. Regardless of the type of investor, he will be curious about concrete data about the progress of a company over a certain period of time. Thus, knowing the level of financial balance indicators, investors will be much more concerned with investing in that company that is making progress in this regard. At the same time, to increase the market value of the company they represent, the managers of the companies listed on the Bucharest Stock Exchange will strive for the financial balance indicators to register the best possible values, this fact representing a profitable activity developed by the company.

In other words, through the present research we manage to understand the role of determining financial balance indicators, as well as their applicability in the practice of transactions on the capital market. Moreover, by grouping the information provided by these indicators, it is possible to quantify the impact brought by their appropriation by

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investors on the stock market performances recorded by the companies listed on the Bucharest Stock Exchange.

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