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THE STATISTICAL ASSESSMENT OF AN EMERGING CAPITAL MARKET USING THE PANEL DATA ANALYSIS OF THE FINANCIAL INFORMATION

Abstract. In order to obtain high returns, investors are interested in companies that have financial stability and perspectives of future gains. The daily quotations at the stock market offer investors pieces of information regarding the value and the global performance of a company. The quotations are influenced by the stock market and also by some financial factors, based on the information from the annual financial statements. The purpose of the present study concerns the assessment of the dinamics of an emerging capital market. The study employed a panel analysis on a sample of 47 companies quoted on the Bucharest Stock Exchange, BVB section, categories I and II, the time span ranging from 2007 to 2011, based on the principle of rational choice. The statistical tools used were SPSS 19.0 and SAS 9.2. The results show that financial information regarding the companies' profitability and indebtedness have a significant influence on the market value, expressed by price to book value ratio.
Keywords: emerging capital market, stock ratios, financial statements, panel data analysis, predictive capacity

JEL Classification: C33, G11, M41

1. Introduction

In a situation of economic stability, the influence of speculative determinants on the share price of the quoted companies is insignificant (Georgescu, [2010]), investors being interested mainly in the real value achieved, based on information regarding the financial position and performance, taken from

the annual financial statements. The financial information from the annual reports gains predictive meanings of the share price, being useful for inventors when taking a decision.

In an emerging capital market, the activity of attracting and placing available funds is still at the beginning, underdeveloped, with a small number of participants and stock transactions. Also, in the absence of sufficient data series is difficult to make predictions and to estimate the evolution of the stock market rate. In this context the investors are interested to obtain profits in a short period of time. Thus, the investors' behavior is notably influenced by profitability and liquidity of the traded shares, as well as by the associated risk. In order to support their decisions, investors need to be assured by the transparency and efficiency of the stock market (Fama, [1969]). Investors are interested on the market stability when placing financial assets and also as regards to the possibility of future economic benefits.

Share indexes were introduced in order to meet the investor's information needs regarding efficiency and the evolution in time of capital markets or share group (Basu, [2006]). In practice, stock market indexes are used to present the evolution of the capital market (Vek and Markovič Hribernik, [2012]). They represent a very important support for decisions regarding transactions, and also protection against risks. Stock market indexes aid in determining security portfolios prices, facilitating revenues from speculative or arbitrage operations (Leung et al [2000]) and monitoring market fluctuations by governmental agencies (Shen et al [2011]).

Because stock market indexes are synthetic results and offer an overview of the capital market, the main disadvantage of using them refers to the inability of analytically tracking the evolution of the stock price over time and between the quoted companies.The lack of information offered by the stock market indexes regarding the financial position and the financial performance of the quoted company, insufficiencies found in econometric models based on time series for estimating the stock price, require taking into consideration the influence of the financial-accounting information on the share price and exchange ratios.

The financial statements (quarterly, biannual or annual) present the financial position and financial performance at a given moment. In the case of the stock exchange, investors are interested by time evolution of each component from the financial statements. At the same time, it is very important for investors to be able to quantify the influence, over a period of time, of the financial information from the reported annual statements on the share price and thus on the market value.

In order to assess the profitability of quoted companies, stock ratios are used to compensate the inconvenience of the stock market indexes. Stock ratios use, at the same time, information provided by the market and also by financial statements. One of the most important stock ratios is the *Price to Book Value Ratio* (*PBR*) and it indicates the investments in different shares, as well as the earnings possibility in a predictable future. An important advantage of using the *PBR* is the connection with the information provided by annual financial statements. Based on

this connection, price benchmarks can be established for quoted companies, in an emerging capital market.

The *general hypothesis* states that: considering a panel of quotedcompanies on an emerging capital market, at the end of the financial year, the *PBR* is significantly influenced by information regarding the financial position and performance presented in the annual financial statements, expressed by financial ratios.

The present study aims to perform a panel data analysis for the predictive capacity of financial information, used by investors in assessing the dynamics of an emerging capital market. In order to compensate the informational limitations of the stock market indexes, the study intends to estimate the influence of the financial-accounting information, expressed by financial ratios obtained from financial statements, on the company's market value, expressed by *PBR*as a stock ratio.

The panel data analysis is used to estimate the influence of financial ratios on *PBR*, depending on the specific companies, time (reporting period) and their simultaneous interaction.

The study was conducted on a sample of 47 companies listed at the Bucharest Stock Exchange, between 2007 and 2011. Using the panel data analysis, the research results show a significant influence of the financial-accounting information on the market value of a company, and implicitly, on share prices in the case of an emerging capital market.

2. Review of prior literature

The stock exchange market focuses mainly on free share trading of companies which need financial resources and could not benefit from borrowed capital from credit institutions (Barnes, [2009]). The stock exchange, perceived as a financial capital market, plays an important role as an intermediate agent that mediates and facilitates investments, from capital owners to companies in need of financial resources (Mishkin, [2010]).

Increasing the number of transactions with capital elements, their complexity and the participants' demands in such transactions, lead to a financial market specialization (Madura, [2010]; Mishkin, [2010]) and to the development of capitalist national economies (Allen, [1993]).

In Eastern European countries the stock exchanges were reopened only after the fall of the communist regimes (Kaszuba, [2010]). Starting with 1995 the Romanian capital market began its reconstruction, with the reestablishment of the Bucharest Stock Exchange (BSE), by the decision of the National Securities Commission. Subsequently, through a series of laws, the activity is regulated and synchronized with European and international standards.

A capital market is considered efficient when the share price includes all information about the company so that investors do not need to further investigate

these pieces information (Aga and Kocaman, [2008]). Responding to the information requirements of investors, stock market indexes are used to create an accurate description of the stock markets (Curto and Pinto, [2012]). For calculating the indexes, the method uses the formula that includes the shares prices of thequoted companies, based on certain criteria demanded by different organizations (Fabozzi and Peterson Drake, [2009]). In Romania, starting with 1997, the BET (Bucharest Exchange Trading Index) is used and it comprises only the shares of ten companies listed at BET, shares with the highest liquidity.

General stock indexes offer an image of the overall capital market, without taking into consideration branch characteristic. Further development led to the use of branch stock market indexes that describe the evolution of a single economic sector, based on the performances of quoted companies from that sector (Fabozzi and Peterson Drake, [2009]).

Reflecting the company's performance through share price has always been a concern of researchers in the field to identify the market value determinants. Voineagu et al [2011], Özlen and Ergun [2012] identify the main factors that can significantly influence the stock price evolution. Among these factors, the information provided by financial statements has been given considerable attention in terms of stock market ratios that can be calculated (Horobet and Belascu, [2012]).

Based on information from the financial statements and provided by the share prices, stock ratios may provide clues on company's performance relative to the branch level, period, or expected (Bhattacharya, [2007]). Investors monitor the quoted companies by means of the information offered by them for estimating future investment returns, in relation to the past, present and future of a company (AteequrRehman et al, [2010]).

Although the use of stock exchange ratios is becoming more and more popular, there is no consensus regarding the most appropriate indicator for the value and performance analysis of a company to support the investors' decision. The stock exchange ratios are dynamic in time, their volatility being determined by a series of factors specific to the market and the company's environment, which is why the investor's decision making needs additionally to take into consideration the accounting and financial results recorded and reported (Sambharya, [2011]).

The information presented in the reported financial statements by quoted companies are assimilated as public good,whose main rolelie beyond the record-keeping activity of past transactions and evaluation of the structure and size of assets (De La Bruslerie, [2008]). The annual financial situations can significantly influence the evolution of stock exchange rate of the quoted companies' shares when they are published or when there are changes in the methods leading to information (Dumontier and Raffournier, [2002]). In the financial statements reported by the quoted companies, considerable changes in the evolution of indicators that show financial position and performance determine, on the capital market, a series of fluctuations for the share price as well as for the volume transactions with such shares (Dumontier and Raffournier, [2002]).

Among the most important financial indicators that determine changes of the shareprice, the literature mentions the gross or net accounting result, as well as the return ratios derived from them (Beaver, [1968]). On the announcement of favorable and positive accounting results, research studies have identified a significant increase of the exchange rate. Otherwise, negative accounting results, which registered losses, led to a lower rate and fewer transactions (Dumontier and Raffournier [2002]).

A very important element from the financial statements, which has an impact on the stock price and the number of transactions, is the amount of dividends given to shareholders. Calculated as dividend per share, a significant value of this indicator shows that listed companies determine an increase of the stock price (Ohlson, [1995]). There are opinions that state that the book value of a company reported to the number of shares has a noteworthy, direct influence on the stock exchange rate of the listed company (Brown et al [1995]).

Regarding the reporting of financial statements, the publication date is an important factor that may influence the share price of the company. On the eve of this date significant volatilities of the exchange rate can be observed, when the information in the statements are considered relevant for the capital market and for investors (Dumontier and Raffournier, [2002]). However, during a financial year, listed companies are asked to publish biannual or quarterly interim financial statements. In this case, the relevant disclosures for the market can contribute to the increase of the volatility of the shareprice.

In Romania, the companies listed at BSE prepare annual financial statements for a period that coincides with the calendar year, whose duration is 12 months and interim statements.

3. Research methodology

The study aims to estimate the influence of the financial information, represented by a series of financial ratios, on *PBR*, taking into account the specificity of the company, of the fiscal year in which financial statements are reported and also and the interaction between these elements. In the study, panel data analysis is used to estimate the influence of the financial ratios on the *PBR*, but also the differences that occur, between the companies and between the reporting periods.

3.1. Target population and analyzed sample

The target population that will be studied, is represented by all the listed companies at the Bucharest Stock Exchange, BSE section, categories I, II and III, between 2007 and 2011. At the end of the first semester of 2012, 79 companies were subject to trading in the BSE section, from all the three categories. Out of this population the survey base was build, after excluding companies representing

financial intermediaries, monetary intermediaries, mutual funds and other similar financial entities, and the only company from the third category that was suspended, adding up to 68.

From the survey base, another 21 companies were eliminated because they were listed starting with 2008 or they had been removed from the stock market during 2007-2011. This process of elimination was determined by the lack of information regarding trading price or quotations at the moments considered in the analysis, as well as financial information.

The final sample, proposed for analysis and on which the hypothesis was tested, comprises 47 companies, under the following structure: 12 companies from the firts category and 35 companiesfrom the second, selected on the basis of rational choice (Jaba, [2002]).

3.2. Analyzed variables and data source

In order to achieve the objectives of the study, as regards to the panel analysis of the *PBR*, based on financial determinants, the article considered a series of variables, as seen in Table 1. They are represented by financial and stock ratios.

Table 1.Variables used in the study

Symbol	Label	Formula	Data source[*]
ROA	Return on Assets	(*Operating Profit*)/ (*Total Assets*)	[WC01250]/ [WC02999]
ROE	Return on Equity	(*Net Profit*)/ (*Total Equity*)	[WC08301]
NM	Net Margin Ratio	(*Net Profit*)/ (*Turnover*)	[WC08366]
FL	Financial Leverage	(*Total Debt*)/ (*Total Equity*)	[WC08231]
OCF/share	Operating Cash Flow per Share	(*Operating Cash Flow*)/ (*Number of Shares*)	[WC04860]/ [WC05191]
EPS	Earnings per Share	(*Net Profit*)/ (*Number of Shares*)	[EPS]
PBR	Price to Book Ratio	(*Stock Price*)/ (*Book Value per Share*)	[PE]

* *Datastream code (Thomson Financial)*

The reason for selecting the ratios presented in Table 1 derives from their capacity to show financial performance (*ROA*, *ROE*, *NM*, *OCF/share*) and financial position (*FL*), as well as market value for a company (*EPS*, *PBR*).

For calculating the ratios for each company involved in the analysis, the data was collected from annual financial statements reported at the Bucharest Stock Exchange and Romanian National Securities Commission. To eliminate the errors that may occur in the collection process, the data was collected using *Datastream Advanced 4.0* to acces the financial databases from *Thomson Financial*.

3.3. Method for data analysis

For the analysis of the *PBR* variation, under the influence of the financial ratios, considering both the cross-section dimension and the time-series dimension, the panel data analysis is used.

A panel of data represents the record of a cross-section data set, obtained by using statistical observation of some variables specific to a group of *n* companies, periodically, in a defined time interval, *T* (Baltagi, [2005]). Starting from this definition, it can be said that panel data is characterized by a double dimension, cross-section and temporal, which offers a significant advantage next to other types of data (Sevestre [2002]).

The cross-section or individual dimension allows the observation of characteristical variations from one company to another, no matter the period of time *t* over which observations were recorded. In this case, the total variance can be decomposed into *inter-individual variance* and *intra-individual variance* (Sevestre, [2002]).

The temporal dimension allows observation of the evolution of a company, over a period of time, in connection to the studied variables. This dimension determines statistical recording for the data, collected under the form of time series, for each studied statistical unit. For this particular dimension, decomposition of total variability in the recorded observations must first of all take into consideration the number of periods of time over which the study was conducted. In this situation, the total variance can be decomposed into *inter-temporal variance* and *intra-temporal variance* (Sevestre, [2002]).

By effectively combining the two dimensions, the total variance for the recorded observations can be split into (Sevestre, [2002]): *Total variance = Intra-individual-temporal variance + Inter-individual variance + Inter-temporal variance*.

The main difference between the last decomposition and the first two is taking into account, at the same time, the intra-temporal and the intra-individual differences. The advantage of this particular method of decomposition allows the study of individuals' behavior in terms of the two dimensions, both individual and temporal.

As regards to the structure of the analyzed data, the panel consists in recording the values for $K = 7$ variables (financial and stock exchange ratios; 6 determinants and one resultative variable), for a sample of $N = 47$ companies, at $T = 5$ different moments (closing date of the Romanian fiscal year).

In the panel data analysis, for estimating the variation of a dependent variable, explained by its determinats, the following model is considered:

$$y_{it} = b_{0it} + b_{1it}x_{1it} + ... + b_{kit}x_{kit} + ... + b_{Kit}x_{Kit} + w_{it} \tag{1}$$

with $i = 1,...,n$ and $t = 1,...,T$, where y_{it} represents the values of the depedent variable and x_{kit} represents the values of the factors, X_k. The value b_{0it} is the model's intercept, the b_{kit} represents the estimations of the coefficients associated to the X_k

factors, recorded for a i company, in a fiscal year t, and w_{it} is the estimated error (Baltagi, [2005]).

If the b_{kit} coefficients are equal to each other, then we can say that the influence of the K variables on the dependent variable is constant in time. That describes the existence of homogeneity in the proposed model. If the b_{kit} are not equal to each other, then the model shows no homogeneity and the influence of the independent factors is not constant over the analyzed period.

Because the number of coefficients ($nT(K+1)$) is superior to the number of total observations (nT), the model is difficult to estimate using traditional methods. For this reason in the model we consider a series of contrasts between coefficients. Based on these differences, four basic models can be defined: with fix effects (individual and temporal), with random effects, with composite coefficients and with random coefficients.

In the study, in the panel data analysis of the influence of the financial ratios on the *PBR* variation, the fixed effects model is considered. Also, we asumed that the influence of K factor variables on the explanatory variable (Y) is the same for all companies ($b_{kit} = b_k$), during all the period considered in the study and the constant (b_{0it}) can be decomposed as follows:

$$b_{0it} = b_0 + a_i + d_t \qquad (2)$$

where b_{0it} is the intercept of the panel regression model, b_0 is a constant, a_i indicates the unobserved differences between companies (individual fixed effects or the individual specificityof a company), and d_t indicates the time differences that exist for a company to a period to another (time fixed effects or temporal specificity to the company).

For testing the model with fixed effects the *Haussman* test is used. Thus, when the intra-individual variation of the variables is greater than the inter-individual variation, the model with fixed effects is considered, otherwise the model with random effects is applied.

To obtain research results the data was analyzed with SPSS 19.0 and SAS 9.2.

4. Results and discussions

For assessing the dynamics of an emerging capital market, like the one in Romania, we take into consideration the evolution of the *PBR* for the 2007-2011 period. Within the context of the 2007-2011 financial crises, the capital market in Romania reported a significant decrease, with notable losses in the 2008 financial year. Even if, starting with the 2009 financial year and continuing in 2010, an increase in market profitability is recorded, the descending trend is maintained during the 2011financial year.

Based on the results presented in Table 2, a descending trend of the *PBR* mean values can be observed starting with the 2007 financial year, until 2011. A decrease of this ratio can be explained by the very rapid diminish of the company's market mean value based on the decline of the share prices, relative to the accounting net asset presented in the financial statements.

For the companies quoted on *BSE*, in 2007, the *PBR* was on average 1.44. This result indicates that the market value was1.44 times higher than the net book value. This allowed the investors to gain benefits when wanting to capitalize the shares for companies quoted at *BSE*. The end of the 2008 financial year showed a noteworthy decrease of the *PBR*, reaching a value of 0.50. This result indicates, for a company, a major decrease of the market value, up to half of the net book value. Starting with the 2009 financial year and continuing in 2010 and 2011, there is a recovery and stabilization of the *PBR* values.

After testing the distribution of the *PBR* with the Kolmogorov-Smirnov Test (K-S), significant asymmetries from the normal distribution were identified. In order to get a normal distribution relating to each financial year, with the purpose of introducing *PBR* in the panel analysis, the logarithm values of the *PBR* were considered.

Table 2. Descriptive statistics and testing the normality of the distribution for *PBR* and *ln(PBR)* during 2007-2011

	Year	Descriptives		K-S Test of Normality	
		Mean	**Std. Error**	**Statistic**	**Sig.**
PBR	2007	1.440204	0.5453408	0.346	0.000
	2008	0.506370	0.0758693	0.189	0.000
	2009	0.981647	0.3527788	0.379	0.000
	2010	0.689179	0.1231115	0.202	0.000
	2011	0.697294	0.5594224	0.393	0.000
ln(PBR)	2007	0.4175	0.11562	0.116	0.147
	2008	-0.9781	0.12096	0.074	0.200
	2009	-0.5621	0.12489	0.103	0.200
	2010	-0.5474	0.11889	0.068	0.200
	2011	-0.6880	0.13438	0.104	0.200

(Source: own processingin SPSS 19.0)

The use of panel data analysis for the variables in the sample involves estimating the following model parameters, accordingto the fixed or random effects that will result from the analysis.

In the study, the regression model will be as follows:

$$ln(PBR)_{it} = \beta_{0it} + \beta_{1it}ROA_{it} + \beta_{2it}ROE_{it} + \beta_{3it}FL_{it} + \beta_{4it}NM_{it} + \beta_{5it}OCF/share_{it} + \beta_{6it}EPS_{it} + w_{it} \tag{3}$$

with $i = 1,\dots,47$ and $t = 1,\dots, 5$.

After analyzing the data in SAS, the results show the 82.62% out of the PBR variation can be explained using this model (Table 3). Thus, within the study the preliminary hypothesis regarding the significant influence of the financial information on the market value of the company is confirmed.

Table 3. Fit Statistics

SSE	6.934194E18	**DFE**	$180 = 5·47 - (47- 1) - (5 -1) - 5$
MSE	3.85233E16	**Root MSE**	196273529.7
R-Square	0.8262		

(Source: own processing in SAS 9.2)

In the panel data analysis, one of the main problems is selecting the model that explains the variation in time of *ln(PBR)*for the analyzed sample.

In the model with fixed effects it is assumed that the influence of the determinant variables on the explained variable, *ln(PBR)*, is identical for all the companies, regardless of the considered financial year ($\beta_{kit} = \beta_k$). The presence of the fixed effects is tested using the F test.

Table 4. F Test for No Fixed Effects

Num DF	Den DF	F Value	Pr> F
50	180	9.86	< 0.0001

(Source: own processing in SAS 9.2)

The model with random effects shows the randomness of the specific effects, and their existence is tested using the *Hausman test*. What is more, this test also shows the homogeneity of the model.

Tabel 5.Hausman Test for Random Effects

DF	m Value	Pr> m
2	6.15	0.0461

(Source: own processing in SAS 9.2)

Following the data processing, the results lead to the existence of fixed effects in the model. Based on the information from Tables 4 and 5, it can be seen that the influence of the information from the annual financial statements (financial ratios) is unique, representative and manifests itself homogeneously on the market value of the listed companies at BSE, expressed through the *PBR*. Regarding the evolution of *PBR* for quoted companies, there are some cross-section differences, but also temporal differences, highlighted using the fixed effects (47-1 individual effects and 5-1 time effects).

Thus, the model based on estimating the parameters (Table 6) is as follows:

$$\textbf{\textit{ln(PBR)}}_{it} = -1.2·10^8 + 1.9596·10^9\textbf{\textit{ROA}}_{it} -2.852·10^8\textbf{\textit{ROE}}_{it} -1.676·10^7\textbf{\textit{FL}}_{it} - 2.294·10^8\textbf{\textit{NM}}_{it} + \textbf{\textit{cs}}_i + \textbf{\textit{ts}}_t + w_{it} \tag{4}$$

or

$$PBR_{it} = e^{(-1.2 \cdot 10^8 + 1.9596 \cdot 10^9 ROAit\ -2.852 \cdot 10^8 ROEit\ -1.676 \cdot 10^7 FLit\ -2.294 \cdot 10^8 NMit\ +\ csi+\ tst\ +\ wit)} \quad (5)$$

or

$$PBR_{it} = (e^{1.9596 \cdot 10^9 ROAit} \cdot e^{csi} \cdot e^{tst} \cdot e^{wit})/(e^{1.2 \cdot 10^8} \cdot e^{2.852 \cdot 10^8 ROEit} \cdot e^{1.676 \cdot 10^7 FLit} \cdot e^{2.294 \cdot 10^8 NMit})$$

$$(6)$$

where cs_i represent the fixed individual effects and ts_t represent the fixed temporal effects. The cs_i coefficients measure the differences between distinct values of *ln(PBR)* for the quoted companies. The ts_t coefficients measure the temporary changes in the characteristics of company from one period to another.

Table 6. Parameter Estimates

Variable	Estimate (millions)	Pr> |t|	Variable	Estimate (millions)	Pr> |t|
cs$_1$	-84.62	0.4998	cs$_{29}$	-1,858.00	<.0001
cs$_2$	16.36	0.8954	cs$_{30}$	104.46	0.4061
cs$_3$	-46.83	0.7073	cs$_{31}$	-67.58	0.5880
cs$_4$	-14.23	0.9121	cs$_{32}$	-171.10	0.1812
cs$_5$	-68.53	0.5831	cs$_{33}$	44.54	0.7209
cs$_6$	-96.12	0.4758	cs$_{34}$	-137.20	0.2914
cs$_7$	-93.57	0.4559	cs$_{35}$	-46.54	0.7087
cs$_8$	58.39	0.6398	cs$_{36}$	-30.84	0.8042
cs9	-17.79	0.8862	cs$_{37}$	-28.30	0.8203
cs$_{10}$	-143.20	0.2597	cs$_{38}$	-35.58	0.7749
cs$_{11}$	-19.25	0.8770	cs$_{39}$	87.37	0.4906
cs$_{12}$	-44.99	0.7179	cs$_{40}$	29.65	0.8119
cs$_{13}$	18.14	0.8841	cs$_{41}$	92.04	0.4682
cs$_{14}$	24.35	0.8448	cs$_{42}$	33.12	0.7902
cs$_{15}$	22.30	0.8577	cs$_{43}$	-41.61	0.7398
cs$_{16}$	-26.46	0.8316	cs$_{44}$	4.43	0.9716
cs$_{17}$	-296.00	0.0240	cs$_{45}$	41.33	0.7400
cs$_{18}$	46.29	0.7100	cs$_{46}$	77.76	0.5352
cs$_{19}$	87.26	0.4878	ts$_1$	116.27	0.0061
cs$_{20}$	39.51	0.7526	ts$_2$	137.67	0.0010
cs$_{21}$	118.95	0.3500	ts$_3$	116.93	0.0054
cs$_{22}$	56.88	0.6480	ts$_4$	83.24	0.0448
cs$_{23}$	45.49	0.7210	**Intercept**	-120.00	0.1944
cs$_{24}$	-34.15	0.7901	**ROA**	1,959.60	<.0001
cs$_{25}$	27.65	0.8244	**ROE**	-285.20	<.0001
cs$_{26}$	40.53	0.7452	**FL**	-16.76	<.0001
cs$_{27}$	-861.50	<.0001	**NM**	-229.40	0.0086
cs$_{28}$	17.64	0.8873			

(Source: own processing in SAS 9.2)

The estimations of the parameters for the regression model are presented in Table 6. Based on the results obtained through the panel data analysis, it can be said that, for BSE, the financial information presented in the annual financial statements (expressed through financial ratios) have a significant impact on the *PBR*, for *Pr = 1%*. Among the financial ratios that have a significant influence on the *PBR*, the return and profitability ratios (**ROA**, **ROE**, **NM**) and indebtedness ratio (**FL**) can be mentioned. Thus, the **OCF/share** and **EPS** have not a significant influence.

In order to estimate the individual differences, the last company from the sample was considered as a reference in the panel data analysis. For this company, in the case of recording a zero level of all financial ratios analyzed in the model, **PBR** records a value of 3.012 millions units ($e^{-1.2 \cdot 107}$).

As regards to the influence of the financial rates on **PBR**, for the quoted companies it can be said that during the considered period, **ROA** had a positive influence, while the other variables (**ROE**, **FL** and **NM**) had a negative influence.

For an increase with one percent of **ROA**, **PBR** recorded an increase $exp(1.9596 \cdot 10^{-9}) = 7,096.5$ millions times. The positive impact of **ROA** on the variation of the **PBR**, for quoted companies, can be explained based on the indicator's informational value on the operating activities of the company. High values for **ROA**, as well as their increase in time, indicate a favorable situation for the company, under development, determined by a high operating result that remunerated assets used. This rate is useful to investors because it show the company's capabilities to obtain future economic benefits, with impact on business continuity, in a foreseeable future.

The increase of one percent of **ROE** determined a diminish for **PBR**, $exp(2.852 \cdot 10^{-8}) = 1,732.2$ millions times. For BSE quoted companies, the **ROE** has a negative influence on the evolution of the **PBR**, with a major impact in reducing the market capitalization. This is a signal for investors to purchase the company's shares. The decrease of **PBR** based on **ROE** takes into account the variation in different proportions of net result and equity. A more rapid increase of the net income than the increase of equity resulting from the incorporation of reserves or making new capital contributions leads to an increase in book value and so of the **ROE**.

For the companies quoted at BSE, the increase with one procent of **NM** determined a decrease for **PBR**, $exp(2.2940 \cdot 10^{-8}) = 991.45$ millions times. This decrease must be correlated with the remuneration policy for investors. A superior net result for a company, which is intended for reinvestment and not for payment of dividends, is not attractive for the capital market. Here, the exchange rate for the company's share will drop and so will the market value of the company.

At the same time, the increase with one unit of the level of indebtness, **FL**, determined a decrease for **PBR**, $exp(1.6760 \cdot 10^{-7}) = 53.441$ millions times. This decrease takes into account the investor's interest in the companies' capability to continue as a going concern. A high level of indebtness can signal the risk of insolvency or bankruptcy. The registration of future economic benefits must be correlated with remuneration policy for investors. A high level of indebtness also

implies a high financing cost, the will diminish the gross result and, by default, the amounts for the dividends payment.

The cross-section and temporal differences between companies are estimate based on the cs_i and ts_t fixed effects. Statiscally, a series of significant cross-section differences between the group of the companies with cs_{17}, cs_{27}, cs_{29} and the group that contains the rest of all the quoted companies has been observed. The specificity of the first group refers to a faster decrease in time of *PBR* by comparison to others. Furthermore, the absence of fixed cross-section effects for the remaining 44 companies expresses the homogeneity of the listed companies regarding the evolution of *PBR*.

Regarding the fixed temporal effects (ts_t) it can be said that there were significant differences between the 5 financial years, with the minimum values recorded in the 2008 financial year. The fixed temporal effects also explain the influence different time of the financial information on the market value of the company.

5. Conclusions

The empirical results in the study lead to the validation of the hypothesis. Using the panel data analysis of the financial-accounting information with the aim of assessing the dynamics of an emerging capital market, a significant influence of the financial ratios on the *PBR* was identified, which describes profitability and financial structure.

The positive influence of *ROA* on *PBR* can be explained in connection with the investor's interest towards the companies' capability to continue as a going concern. Depending on the remuneration policy for investors or shareholders, obtaining future economic benefits can be the basis for distribution of dividends. This policy can lead to an increase of the company's attractiveness on capital markets, and hence for the stock prices.

The negative influence of the other financial ratios on the *PBR* takes into account the variation of net result recorded by a company in a financial year. A more rapid increase in net income from the equity growth or turnover determines higher rates of return (*ROE* and *NM*). A positive variation of net income, in the absence of a policy to pay dividends to shareholders, leads to the increase of the company's book value.

The *PBR* decrease, compared with the book value growth, indicates a decrease in market capitalization and is a signal to the stakeholders to purchase shares at a favorable price.

Regarding the level of indebtedness, *FL*, its negative influence on *PBR* can be explained first of all by the listed companies' policy towards payment of dividends to shareholders. Future economic benefits, when resorting to foreign financing, impose the reimbursement of borrowed capital at the fixed deadlines and also remuneration of creditors by paying interest. The creditors' privileges can

determine a decrease of the amounts allocated for dividend payments, which results in a decrease for the company'sattractiveness, the share prices and the market value.

The panel data analysis results indicate homogeneity of BSE listed companies regarding information in the annual financial statements. This homogeneity of the financial ratios influences on the **PBR** is supported by the absence of fixed cross-section effects. Their absence shows that for listed companies at BSE their market value represent a uniform single trend, no matter the listing category. At the same time, based on the panel data analysis, a series of fixed longitudinal effects were identified, which indicate for **PBR** an evolution specific to every financial year, in accordance with the results.

Unlike the BSE indexes, that show a synthetic evolution of the market, the panel analysis offers an analytical image of the stock market, which will allow investors to focus on investing in companies with high performances.

The predictive character of the information presented in the annual financial statements allows the assessment of thecapital market stability. In this way stakeholders can get sufficient information regarding the market value of companies, which will allow the establishment of secure milestones in forming the stock exchange rate.

The limits of the study come mainly from the analysis that is orientated only to the Romanian cases, on companies quoted at the Bucharest Stock Exchange.

The future directions of research propose a long-term analysis of the phenomenon, by including in the sample companies from other emerging markets and comparing the results with those from developed markets.

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