

Market Value and Performance of Brazilian Companies

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Abstract

The research analyzes relation between measures of economic, financial and debt performance and market value of Brazilian companies from 2001 to 2012. The sample consisted of 57 non-financial companies listed on the São Paulo stock exchange (BM&FBOVESPA) which were analyzed using panel data regression. The research design included the analysis of all companies and of five subsamples created according to size (larger and smaller) and period (before and after 2008). Results show MVA as the main explanatory variable of Brazilian companies' market value. The other performance measures alternated in explaining the market value depending on the size and period of analysis.

Key Words: Market Value, Performance, Brazilian Companies.

1. Introduction

In recent decades, capital markets have been undergone through profound changes due to information technology advance, financial innovation and increase in compliance requirements of companies (Pinheiro, 2009). In Brazil, this context is singular, with regard to greater integration of the country into global financial market. In 2013, BM & FBOVESPA was the fifteenth largest exchange in the world by funding volume and the third among emerging markets with \$ 13.39 billion (World Federation of Exchanges, 2013).

In face of the above, companies need to direct their strategies to create value for all those involved whose perceptions and expectations manifest ultimately in market value of companies (Bacidore *et al.*, 1997; Biddle *et al.*, 1997; Perobelli *et al.*, 2007).

Thus, not only investors, but all stakeholders examine economic and financial fundamentals of companies carefully, so that performance metrics and value creation measures emerge as a major tool of control and transparency regarding the company ability to compete and stay in market (Bastos *et al.*, 2009; O'Byrne & Stewart, 1996; Sharma and Kumar, 2010).

There are several performance indicators that signal the company's ability to create value to managers, however, the relationship between performance measures and the company's market value is still controversial according to national and international empirical research (Anca & Petre, 2012; Bastos *et al.*, 2009; Biddle *et al.*, 1997; Chen & Dodd, 1997; West, 2005).

The application of a consistent set of indicators that provide the best use of these measures and broaden the understanding of relationship between performance metrics and market value becomes a key source of information for decision making in market (Kaplan & Norton, 1993; Pace *et al.*, 2003).

The importance of conventional performance measures in explaining market value has been discussed for years (Sharma and Kumar, 2010; West 2005; Bacidore *et al.*, 1997). However, EVA®

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(Economic Value Added) and MVA® (Market Value Added) are considered the main indicators of value creation, since they point to fund surplus generated by the organization and its market value after remuneration of third party capital and their own (O'Byrne & Stewart, 1996; O'Hanlon & Peasnell, 2002; Shil, 2009; Stewart III, 1990; West, 2005).

In this context, efforts are needed to analyze the relationship between performance measures and market value of companies in developing economies. Similar research was conducted in Brazil, such as Bastos *et al.*, 2009, but results were limited and the sample had a timeframe of seven years (2001-2007). Thus, a set of distinct variables was used, with samples sectioned in order to best verify the relationship between performance and market value, depending on company size and economic context in which it is inserted.

The question that guided this research was: which are the financial performance measures that explain companies' market value in the Brazilian capital market from 2001 to 2012?

Therefore, the aim of this study is to analyze the relationship between financial and economic performance and market value of Brazilian companies traded on BM & FBOVESPA in the first twelve years of the twenty-first century when economic stability was already established in the country and the capital market started to be an important source for the development of Brazilian companies.

To this end, the article was organized as follows: the next section provides the theoretical framework. The research method used and the definition of the variables are presented in the third section. Results are analyzed in the fourth section. The fifth section presents the final considerations, and finally, the references used.

2. Theoretical Framework

Business performance runs throughout several areas of organizational studies and has greater support, above all, on the Resource Based View (RBV), which brings the responsibility for managing resources and outcomes into the company (Aral & Weill, 2007). This perspective ensures variation of each company performance; not only due to market conditions, but also by the form each organization manages its resources and competences (Fernandes *et al.*, 2006).

Organizational performance assessment has different dimensions and, in effect, allows multiple forms of measurement to be proposed and analyzed; however, empirical studies indicate that economic and financial measures are prominent as proxy for corporate performance (Matitz & Bulgakov, 2011).

Notwithstanding the preference for economic-financial measures, note that the maximization of the company value is the primary goal of the capitalist company (Damodaran, 2001; Assaf Neto, 2012).

However, the existence and importance of measures associated to organizational performance is recognized, regarding marketing, operational, logistical, human aspects and the business efficiency itself when associated with strategic guidance (Merchant & Stede, 2007; Pace *et al.*, 2003).

For Bastos *et al.* (2009), there are several performance indicators that guide managers in searching results that can effectively increase company market value and, therefore, shareholder wealth. Even so, traditional indicators, such as Earnings per Share, Return on Asset (ROA), Return on Equity (ROE) and Return on Investment (ROI) are prominent in the evaluation of corporate performance (Bacidore *et al.*, 1997; Bryant *et al.*, 2004; Shil, 2009; West, 2005).

For Krauter and Sousa (2007) performance measures can be classified into five distinct groups: 1) Residual Income Measures, which includes the cost of equity capital and third party's; 2) Components of the Residual Income, describes profit elements without the cost of capital component; 3) Market Based Measures, which are derived from companies traded in the stock market, i.e., publicly traded company; 4) Cash Flow Measures, used to mitigate the effects of the accrual basis used by accounting; and 5) Traditional Profit Measures, used by managers and market agents.

However, these financial performance indicators do not incorporate important economic assumptions such as the opportunity cost and the risk of the assets or of the company itself (O'Byrne & Stewart, 1996).

For Araújo Neto and Assaf Neto (2003) and Kaplan and Norton (1983), the traditional metrics give way to more consistent tools, techniques and management processes oriented to maximizing value. This approach surrounds the value drivers, where the emphasis is on cost of capital. The foundation of this theory arises from the assumptions of Modigliani and Miller (1958 and 1963); in

order to clarify issues about which measure of value the market truly considers evaluating a company. Thus, the structure of capital and the weighted average cost of capital (WACC), as well as the effects of taxes, emerge as factors that explain variations in market value (Anca & Petre, 2012; Araújo & Assaf, 2003).

Thus, it is necessary to monitor the financial indicators and other measures that add to the concept of value creation (Bryant *et al.*, 2004). In this sense the main measures of economic performance used are EVA®, MVA® (O'Byrne & Stewart, 1996) and RROI (Residual Return on Investment) (Perez & Famá, 2006).

Empirical studies carried out in Brazil with market analysts also suggest the combined use of financial and economic measures as shown in Table 1.

Classification	Performance Measures
1º	ROI – <i>Return on Investment</i>
2º	EVA® – <i>Economic Value Added</i>
3º	ROE – <i>Return on Equity</i>
4º	EPS – <i>Earnings Per Share</i>
5º	ROA – <i>Return on Assets</i>
6º	MVA – <i>Market Value Added</i>
7º	CVA – <i>Cash Value Added</i>
8º	TSR – <i>Total Shareholder Return</i>
9º	CFROI – <i>Cash Flow Return on Investment</i>
10º	IPL – Índice Preço/Lucro

Table 1 – Classification of Performance Measures Used in Brazil

Souce: Adaptation (Basso *et al.*, 2002)

Empirical studies show that there is no single performance measure that accounts for the variation in the market value of a company (Biddle *et al.*, 1997; Bastos *et al.*, 2009).

For O'Hanlon and Peasnell (2002), both the EVA® and MVA® are good measures of value creation. The results found by Stankeviciene and Nokonorova (2014) point out that the EVA® is efficient in measuring shareholder value in financial institutions. Differently, Fiordelisi and Molyneux (2010) observed a positive relationship between leveraging and economic profit, but not with the EVA®. Therefore, higher financial advantage increases economic profits.

Talebnia, Salehi, Valipour and Yousefi (2010) investigated 92 companies listed on the Tehran Stock Exchange from 2004 to 2008, the authors found a significant relationship between traditional accounting measures such as return on investment (ROI) and earnings per share (EPS) and the creation of shareholder value. West (2005) studied the superiority of the EVA® compared to traditional performance measures of companies listed on the JSE Securities Exchange South Africa, having the MVA® as a proxy for shareholder value. The results, however, do not support the superiority of EVA®, but suggest a stronger relationship between the MVA® and cash flow from operation. There is also little correlation between the MVA® and Earnings per Share.

Biddle, Bowen and Wallace (1997) analyzed the claim that the EVA® has greater association with stock returns and company value than with profits of the financial year. The results showed a strong association with returns and values of EVA®, residual income and cash flow from operations.

In the Brazilian market, Perobelli *et al.* (2007) found evidence of an inverse relationship between debt and value, i.e., the increase in debt generated value destruction in the period of 1998-2006 in the companies of the Brazilian Metallurgical and Steel Sector.

Bastos *et al.* (2009) found low explanatory power of EVA®, while results were better for the Operating Cash Flow, followed by the Return on Investment (ROI) and Earnings per Share. Accordingly, the authors rejected the superiority of EVA® while performance measure that considers the cost of capital in the value creation analysis.

Given the theoretical discussion presented, the following hypotheses were postulated for the research:

H1 - Financial performance measures exert positive influence on the market value of companies

- H2 - Debt measures do not influence the market value of companies
 H3 - Economic Performance Measures exert positive influence on the market value of companies

3. Methodology

3.1. Research Design

This research was conducted under the quantitative perspective in terms of its form, since the interest is to describe and analyze the relationship between financial performance measures and the market value of Brazilian companies traded on the BM&FBOVESPA in the period of 2001-2012.

The sample used in the study was achieved by the Económica® System totaling an average of 57 companies in the years researched. Initially, the sample had an average of 393 entities. After selecting only companies that presented the information necessary to obtain the indicators throughout the period of analysis, the 57 companies mentioned above remained.

Furthermore, due to the differences between the companies, as well as the macroeconomic conditions imposed by the American subprime crisis in 2008, the sample analysis was performed in three stages: First, we analyzed the results of the aggregate of all companies throughout the period comprising the years 2001 to 2012. In a second step, two sub-samples for the pre-crisis (2001-2007) and post-crisis periods (2008-2012) were studied. Finally, the sample was divided by company size, according to the median of the investment value, and then the results were analyzed for the two subsamples throughout the period, as well as for the years preceding and succeeding the 2008 crisis.

The strategy of working with subsamples relative to company size and period before and after 2008 crisis is due to Brazilian market characteristics. Wherein company size is always a major factor within financial analysis depending on their capacity to access international markets, as well as its internationalization (Bastos & Nakamura, 2009; Brito *et al.*, 2007; Perobelli & Famá, 2002). BM&FBOVESPA was, among the major exchanges in the world, the one which presented the greatest volatility between the years 2008 and 2009; moreover, the pre-crisis period was characterized by the country's economic growth in taxes (5% a year) and in the post crisis period the growth rate declined, reaching 2.2% in 2012 (Brazilian Institute of Geography and Statistics, 2013).

3.2. Material

Performance metrics (ROI, RROI, ROE, ROS, EVA, and MVA) were calculated in spreadsheets, from the financial information of companies compiled by the Económica® System, which is the only one that gathers all the information from the capital market in Brazil.

Table 2 presents the consolidated descriptive results of the variables considering all the companies in the sample, from 2001 to 2012.

Variables	Mean	Medin	Minimum	Maximum	Standard Dev.
ROI	0,15%	0,13%	-1,60%	8,57%	0,36%
ROE	13,10%	13,55%	-263,40%	186,70%	25,76%
ROS	8,09%	7,30%	-431,60%	413,10%	28,74%
RROI	-0,04%	-0,02%	-8,30%	1,75%	0,38%
EVA (R\$)²	74.367	-13.679	-6.659.300	18.251.000	1.670.200
MVA (R\$)	480.760	-76.225	-381.300.000	256.540.000	23.289.000
Investment (R\$)	8.889.300	1.900.400	30.784	541.750.000	36.736.000
Market Value (R\$)	12.051.000	2.270.700	-127.040	461.470.000	42.930.000
EC	38,73%	40,61%	0,01%	99,78%	19,42%

Table 2 – Descriptive Sample Data

Source: Elaborated by the authors.

² The values were adjusted for inflation to 2012, all amounts are in thousands. The price of Brazilian Real in Dec./2012 was R\$ 1 = US\$ 2.04.

The Jacque-Bera test was used to verify the normality of the variables, and none of the variables showed significant normal distribution. This confirms the high dispersion of results among companies over the period.

In the interest of checking the existence of covariance between the performance variables that would explain the market value of companies, the correlation coefficient between the variables was calculated, as shown in Table 3.

	ROI	ROE	ROS	RROI	EVA	MVA	INV	VM	EC
ROI	1								
ROE	0,1847	1							
ROS	0,0367	0,2844	1						
RROI	-0,7126	0,3049	0,1824	1					
EVA	-0,0653	0,2023	0,1217	0,2663	1				
MVA	0,0557	0,1041	0,0529	0,0555	0,6658	1			
INV	-0,0176	0,0294	0,0316	0,0343	0,4485	0,3299	1		
VM	0,0064	0,0798	0,0604	0,0650	0,6738	0,4995	0,8857	1	
EC	-0,1661	-0,2475	-0,1064	-0,0351	-0,0670	-0,0812	-0,0186	-0,0598	1

Table 3 – Correlation Matrix

Source: elaborated by the authors.

Because of the most significant correlations (>0.4 ; <-0.4) the choice was to use the following explanatory variables in the model: RROI, ROE, ROS, MVA and EC. Notwithstanding the high dispersion between the variables whose results are financial (MVA and VM), the opportunity to relativize them by business investment was considered. Thus, the MVA1 and the CVM were created, representing the market value added to the company for each unit of investment and the CVM the ratio of market value of the company with the investment.

Importantly, the variable Market Value assumes the condition of the dependent variable, while the others are considered as explanatory variables of market value. Furthermore, it is worth noting that the Shareholders' Equity (SE) and the indebtedness attributed to companies were taken at market value.

3.3. Methods

The method used to study the relationship between the performance variables with the market value was the multivariate Regression analysis with Panel Data. The sample feature is the heterogeneity, in which the individual effects of companies cannot be considered random, so the most appropriate technique is one that uses fixed effects, in which differences between companies are captured by the constant (Marques, 2000).

However, for the number of companies studied (57) for the period of 12 years, there are 684 observations, so the use of the technique of fixed effects will require 57 dummy variables, which will reduce the degrees of freedom of the model. Therefore, the techniques of fixed and random effects were used.

Equation 1 presents the empirical model used for analysis, considering fixed effects.

$$VM1_{it} = \beta_1 i + \beta_2 MVA1_{it} + \beta_3 ROS_{it} + \beta_4 ROE_{it} + \beta_5 RROI_{it} + \beta_6 EC_{it} + u_{it} \quad (01)$$

Levin, Lin & Chu (2002) point to the need for stationarity testing in regression with panel data for samples with average dimensions, i.e., $10 < N < 250$ and $25 < T < 250$, and in this case N is the number of companies and T is the period analyzed. In face of this, the characteristics of this sample do not need to be verified in unit root, however, the KPSS test was performed for being more robust than Dickey-Fueller for all variables (Levin *et al.*, 2002; Bueno, 2008).

MVA1, ROS and ROE showed a stationary pattern for 55 companies, RROI, and EC for 54 companies, so only 11 companies did not present stationarity in some of the variables. Therefore the sample with 57 companies was maintained, for besides not falling within the limits required by literature, the absence of stationarity was sporadic and for few companies.

A feature in organizational studies is the lack of homogeneity between units observed, which can also be seen in this study as shown in Table 1 (Pindyck & Runbifeld, 2004). Therefore, the presence of heteroscedasticity is possible, considering that the variance of the variables will hardly be constant over time for all the companies, in effect; the technique of weighted fixed effects was further used, with coefficients adjusted according to variance weight.

4. Analysis of Results

In this section the results of the sample studied (57 companies) for the entire period are initially postulated, using the three main techniques for regression with panel data. The aim was to identify the best model, the level of adjustment, and then use it to analyze the subsamples with the overall result as the initial parameter.

Thus, Table 4 shows the comparative results among the three models used to identify the relationship between the market value and performance for the 57 companies from the total sample researched, considering the entire period of analysis.

Variables	Fixed Effects	Fixed Effects Weighted	Random Effects
	Coefficient		
Constant	1,534***	1,233***	1,488***
MVA1	0,206***	0,208***	0,205***
ROS	-0,001	-0,001	-0,001
ROE	0,011***	0,009***	0,010***
RROI	0,401***	0,176*	0,4103***
EC	-0,569**	-0,045	-0,429*

Note: *** Significance > 99%; ** Significance > 95%; * Significance > 90%

Table 4 – Comparative Results for the 57 sample companies between 2001-2012 .

Dependent Variable: CVM

Source: Elaborated by the authors.

It is observed that MVA, ROE and RROI were positive and significant in explaining the value creation of Brazilian companies from 2001 to 2012. Notwithstanding, except the RROI for the weighted fixed effects technique, the absolute values presented in the coefficients were close. Only ROS variable was not significant in any of the three models and capital structure coefficients were negative, being in fixed and random models it got significant effects. The results are consistent with the assumptions that the variables of traditional performance, as well as MVA, are significant in explaining the market value, according to Talebnia *et al.* (2010), West (2005) and Perobelli *et al.* (2007).

Table 5 presents the statistics for the specification of the models presented in Table 4.

Estatistics	Fixed Effects	Fixed Effects Weighted	Random Effects
R²	0,236113	0,193624	n.d.
Estatistics F	3,151742 (0,00000)	32,55984 (8,48e-30)	n.d.
Schwarz	2549,363	1950,144	2218,426
Akaike	2268,63	1922,977	2191,259
Hann-Quin	2377,265	1933,49	2201,772
Homocedasticidade (Wald)	2033,86 (0)	n.d.	5,39605 (0,0202)
Durbin-Watson	1,962208 (0,9588)	n.d.	n.d.
Normality of Residuals (χ^2)	2373,7 (0)	2894,84 (0)	2373,7 (0)
Teste de Hausman (χ^2)	n.d.	n.d.	4,65067 (0,46)

Note: n. d. – Not available. Values in parentheses are the p-values of statistics

Table 5 – Fit statistics and results for the models in Table 4

Source: Elaborated by the authors.

It is noted that all the models presented adequate statistical specification for F (fixed effects and weighted fixed effects) and the Hausman Test (random effects). Using the likelihood ratio test between the models, it is observed that the most appropriate would be the Weighted Fixed Effects for presenting the lowest values between the tests of Akaike, Schwarz and Hann-Quin; however, the

ability of explanatory variables to explain the market value decreased to 19.36%, versus 23.61% of the fixed effects.

As expected, the model with fixed effects showed heteroscedasticity between groups, which did not occur in the model with random effects.

Thus, the model with weighted fixed effects was chosen, for the R^2 is still representative considering the nature of this study and this technique avoids the problem to admit that the variable results are random for each company group. In addition, the test to differentiate the intercept between the groups showed F Statistic of 0.576801 (56,622) with p-value of 0.99, thus it is no possible to reject the null hypothesis that the groups have a common intercept.

Table 6 presents the results for the whole period under analysis, stratifying the smaller and larger companies in the sample.

Variables	Period 2001-2012		
	Total	Smaller	Larger
		Coefficient	
Constant	1,233***	1,16963***	1,6086***
MVA	0,208***	0,710576***	0,120809***
ROS	-0,001	-0,00255847***	-0,00597236
ROE	0,009***	-0,00196942	0,0297589***
RROI	0,176*	0,0794598	0,400641
EC	-0,045	0,260455	-1,31899***
R²	0,193624	0,304242	0,441534
Estatistics F	32,55984 (8,48e-30)	28,86054	54,07837 (2,75e-41)
Normality of Residuals (χ^2)	2894,84 (0)	339,6421 (76895e-074)	1673,69 (0)

Note: *** Significance > 99%; ** Significance > 95%; * Significance > 90%

Table 6 – Comparative results between the smaller and larger companies for the period 2001-2012

Dependent Variable: CVM
Source: Elaborated by the authors.

It is noted that the variables associated with the aggregate market value by the investment made is significant in explaining the market value for all companies during 2001 and 2012. The ROS was significant only for smaller companies, but its coefficient was almost null; when analyzing the confidence interval, it was found that the upper limit was positive, but also very close to zero. The return to shareholders was significant for larger companies with positive effect and influence this probably explains the result for the total of companies.

The capital structure was significant for larger companies with greater estimator and negative sign, which denotes that the companies with higher market value have lower participation of third party capital in financing their investment. This result corroborates with the finds of Perobelli *et al.* (2007), differently from Fiordelisi and Molyneux (2010), which indicates that higher leveraging increases economic profit.

Nevertheless, the models with the split sample showed higher R^2 , especially for larger companies. The lack of normality in the residuals continues to be a limiting factor to the model.

4.1. Pre-Crisis Period - 2008

Table 7 shows the results of the samples studied for the 2001-2008 period.

Variables	Pre-Crisis		
	Total	Smaller	Larger
		Coefficient	
Constant	1,3001***	1,06493***	2,03251***
MVA	0,808488***	0,684478***	0,718224***
ROS	-0,00456477***	-0,00409296***	-0,0169282***
ROE	-0,00148463	-0,00154489	0,00684394**
RROI	0,0651043	0,0531712	-0,316752
EC	0,299201*	0,407026**	-1,18174***

R²	0,453733	0,290943	0,579075
Estatistic F	65,28566 (1,62e-49)	15,59232 (7,56e-13)	54,20333 (3,22e-35)
Normality of Residuals (χ^2)	145,580 (0)	215,243 (1,82187e-047)	33,38 (5,63745e-008)

Note: *** Significance > 99%; ** Significance > 95%; * Significance > 90%

Table 7 – Comparative results for the 57 sample companies between 2001-2008

Dependent Variable: CVM

Source: Elaborated by the authors.

The MVA is, again, significant in explaining the market value of companies, regardless of size. As with O'Hanlon and Peasnell (2002) and West (2005), the MVA is a good measure to assess value creation. The ROS was also significant for all samples in the pre-crisis period, but the negative signal, which in theory would represent an inverse relationship between value creation and net profit margin, requires attention, thereby contradicting the literature. However, the economic context of the country in this period was one of growth and expansion of activities. Therefore, it is thought that companies prioritized investments with the ability to create value in the long term, considering the MVA always positive and significant to the margin gain in the short term.

The explanation of the negative ROS for the entire period also confirms the ROE significant only for larger companies and, even then, with a coefficient near zero.

The Capital Structure was significant at 95% for smaller companies and 99% for larger companies; however, the sign of influence on value creation was the reverse, denoting greater reliance of smaller companies on credit market for financing their investment. In contrary, for larger companies, which have greater market value creation for those with lower participation levels of debt in its capital structure. These results agree with the findings of Perobelli *et al.* (2007), however, oppose to the premise that certain levels of indebtedness increases the market value (Modigliani & Miller, 1963).

The analysis models showed better explanatory ability and adjustment to the segregated sample comparing to the results shown in Table 6, the limitation on normality of residuals still remains, which penalizes the quality of the estimators.

4.1. Post-Crisis Period - 2008

Table 8 presents the results for the period 2009-2012, when the Brazilian companies needed adjust in face of the volatility of financial markets and realign their strategies for a period of modest growth in domestic and international markets.

Variables	Post-Crisis		
	Total	Smaller	Larger
Constant	1,40654***	1,30553***	1,84648***
MVA	0,0483943**	0,549153***	0,0175254
ROS	-0,000810539	0,000382151	-0,0124781
ROE	0,0155645***	-0,000722962	0,0282189***
RROI	2,32493***	0,725942*	3,38499***
EC	-0,644185***	-0,140398	-1,66723***
R²	0,455880	0,411060	0,455406
Estatistic F	46,75087 (5,28e-3)	18,70549 (4,54e-14)	23,24716 (6,41e-17)
Normality of Residuals (χ^2)	1555,36 (0)	154,028 (3,57402e-034)	787,86 (8,2912e-172)

Note: *** Significance > 99%; ** Significance > 95%; * Significance > 90%

Table 8 - Comparative results for the 57 sample companies between 2009-2012

Dependent Variable: CVM

Source: Elaborated by the authors.

It is noted that in the period after the 2008 crisis, important changes occurred in explaining the market value of Brazilian companies. The influence of MVA on the value of the companies remained positive, but significant only for smaller companies and for aggregate analysis. The ROS is no longer significant in explaining the variance of the market value. For that, ROE and RROI came to exert a positive and significant influence over the total sample, especially for larger companies, which denotes

bigger investor preference for the more 'orthodox' companies. In addition, it delivers positive results to shareholders and have a positive spread between the return on investment and the cost of borrowing, as suggested by the results of Talebnia *et al.* (2010).

In this sense, the significant negative influence of the Capital Structure on the market value of companies is understood, as investors begin to prioritize companies with lower debt levels due to the volatility of financial markets and less need of cash for payment of amortization and financial expenses.

5. Conclusion

The objective of this study was to identify the influence of performance measures on the market value of Brazilian companies. The performance measures used were financial, economic and of indebtedness.

Empirical work on this subject is scarce in Brazil, and results were not significant due to the methodological design used. In parallel, empirical studies show the use of different indicators of business performance and results with market value are controversial.

From a sample of 57 non-financial companies listed at BM&FBOVESPA, an analysis of the relationship between financial, economic and debt measures and market value was carried out for the period 2001-2012. Since empirical studies identify company size importance on the performance, and recognizing that the financial crisis in 2008 brought a more volatile reality for Brazil. The samples were segregated into five subsamples: i) the smallest companies; ii) the largest companies; the smallest companies in the pre-crisis period; iii) the largest companies in the pre-crisis period; iv) the smallest companies in the post-crisis period; and v) the largest companies in the post-crisis period.

The quantitative approach used required a prior analysis of the correlation between the variables in order to avoid the inclusion of variables that would inflate the variance in explaining the dependent variable 'market value'. In face of this, the model included two measures of financial performance ROS and ROE, two measures of economic performance MVA and RROI and a measure of indebtedness EC.

The regression model with panel data used showed better adjustment and explaining ability than the found by study of Bastos *et al.*, (2009), where it is understood that the greatest extension of the sample and the use of the five subsamples allowed a more extended analysis of the relationship between performance and market value.

It was found that all the variables had an influence on the market value of the sample at some point, so segregation identified that: the main explanatory variable of market value of Brazilian companies is the MVA.

In the pre-crisis period it was noted that besides the MVA, variables ROS and EC were significant in explaining the market value. The negative sign of net sales margin must be relativized by the proximity of the estimator to zero and by the moment of economic expansion in the country, in which it is likely that the company strategy was to increase market share at the expense of short-term sales margin. However, this signal can only be confirmed in a study with a distinguished research scope.

Notwithstanding, the capital structure was significant for both the larger and smaller companies, but with different signs. Thus, the results suggest that companies with smaller investments had their market value positively influenced by debt due to the need for growth and the opposite occurs with the larger companies, whose influence was negative, including the fact that the estimator for this variable was the most representative for the largest companies in this period. This situation is consistent with the Trade-off Theory, which suggests that an optimal debt level in function of bankruptcy costs, which are more representative for large companies.

In the post-crisis period, it was observed that the ROS is no longer significant in explaining the market value and the ROE variable gains importance and positive influence on the variation of the value of Brazilian companies, which denotes the uncertainty of investors facing a more volatile environment with directing resources to companies that can deliver results to shareholders. This assertion is ratified by the positive and significant RROI influence on the market value for the samples analyzed in this period, in addition to maintaining the representativeness of capital structure on company value.

In face of this, the hypotheses made were almost completely confirmed, for in all samples at least one of the indicators of economic, financial performance and indebtedness were able to explain the variation in the market value of companies.

Nonetheless, this study limitations can be highlighted: i) results are restricted to the used sample and any extrapolation should respect the context conditions; ii) model assumes that the variables are linear in the parameters, so new longitudinal studies can test non-linear patterns due to changes in the signs of the capital structure variable and significance for the other variables; iv) the lack of normality in the residuals limits the reliability of the estimators, so should the coefficients should not be used for inference without the required adjustments.

Further studies can be developed to aggregate companies from other emerging or Latin American markets. Furthermore, the development of metrics of non-financial organizational performance are postulated for the Brazilian market, which can be associated with the market value in order to broaden the understanding of market value variation.

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