



ENDOGENOUS FACTORS IN THE PERFORMANCE OF BRICS COMPANIES

FATORES ENDÓGENOS NO DESEMPENHO DAS EMPRESAS DO BRICS

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ABSTRACT

Results and contributions of the article: The results indicated positive relationship between capital structure (size) and stock market performance. The current liquidity variable showed a negative and significant 1% relationship with the stock market performance. The capital structure showed a positive and significant relationship at 1% with the share return. We concluded that there is impact of the endogenous variable on the stock return of BRICS companies, corroborating the work of Idada, Atu and Kingsley (2019) and Tran et al. (2019). Purpose of the paper: In this context, we analyzed the impact of endogenous variables on the performance of BRICS companies. Gap: The focus on emerging countries reinforces the results of research in developed countries and other economic groups. In time, several studies reinforce the analysis considering macroeconomic variables and performance in an aggregate manner, either by sector or country. Relevance of the chosen theme: Performance has become the target of all companies at a time with increased competitiveness. Thus, several researchers worldwide aim to study performance and its determinants in order to assist managers, investors, and





entrepreneurs through fundamentalist indicators, whether being accounting or macroeconomic indicators. Impact on the area: Highlight the endogenous fundamentals of companies that impact the performance of emerging economies. Thus, performance focused on companies, without focus on sectoral indexes. Methodology: Research included annual data from 2014 to 2019 of the 323 companies. Data were collected from the Reuters Eikon. For analysis, we adopted a panel data approach through descriptive statistics and multiple regression using three hypotheses and control variables.

Keywords: Performance; Stock return; BRICS; Endogenous factors; Capital structure.

RESUMO

Resultados e contribuições do artigo: Os resultados indicaram relação positiva entre estrutura de capital (tamanho) e desempenho do mercado acionário. A variável liquidez corrente apresentou uma relação negativa e significativa de 1% com o desempenho do mercado de ações. A estrutura de capital apresentou uma relação positiva e significativa em 1% com o retorno das ações. Concluímos que há impacto da variável endógena no retorno das ações das empresas BRICS, corroborando o trabalho de Idada, Atu e Kingsley (2019) e Tran et al. (2019). Objetivo do artigo: Neste contexto, analisamos o impacto de variáveis endógenas no desempenho das empresas do BRICS. Gap: O foco em países emergentes reforça os resultados de pesquisas em países desenvolvidos e outros grupos econômicos. Com o tempo, diversos estudos reforçam a análise considerando variáveis macroeconômicas e desempenho de forma agregada, seja por setor ou país. Relevância do tema escolhido: O desempenho tornou-se o alvo de todas as empresas em um momento de maior competitividade. Assim, diversos pesquisadores em todo o mundo buscam estudar o desempenho e seus determinantes a fim de auxiliar gestores, investidores e empresários por meio de indicadores fundamentalistas, sejam eles contábeis ou macroeconômicos. Impacto na área: Destacar os fundamentos endógenos das empresas que impactam o desempenho das economias emergentes. Assim, o desempenho é focado nas empresas, sem foco nos índices setoriais. Metodologia: A pesquisa incluiu dados anuais de 2014 a 2019 das 323 empresas. Os dados foram coletados do Reuters Eikon. Para análise, adotou-se a abordagem de dados em painel por meio de estatística descritiva e regressão múltipla utilizando três hipóteses e variáveis de controle.

Palavras-chave: Atuação; Retorno das ações; BRICS; Fatores endógenos; Estrutura Capital.

1 INTRODUÇÃO





One of the expectations of entrepreneurs is to attract investors to their organization. However, investors are concerned with the risks of investing capital in companies. For Mantin and Rubin (2018), investors hope to obtain a fair return for the risk of investing in a company and seek security for their investment, either through analysis of accounting information, or through other fundamentals (Lerman, 2018).

Financial performance is clearly important for measuring the achievements of companies, indicating good conditions of a company in a given period (Idada, Atu & Kingsley, 2019). Performance is heavily dependent on how it is influenced. Hoang et al. (2019) stated that identifying and evaluating factors that impact the financial performance of companies has become so important that it draws attention of researchers worldwide.

Liu and Peng (2015) highlighted that investors seek specific fundamentals of the company, i.e., endogenous factors, in order to process information to update their beliefs on the perspectives of the company. According to Mardones and Cuneo (2019), the main endogenous fundamentals of companies are financial leverage, operational risk, liquidity, cash flow, and company size (e.g. sales revenue).

Akintimehin et al. (2019), who recently studied the effect of endogenous factors (e.g. Capital structure) on the financial performance of small businesses in Nigeria, analyzed shareholders' equity as endogenous factor. Mehmood, Hunjra and Chani (2019) studied financial structure regarding the impact of financial performance in corporate diversifications in South Asia in companies from Pakistan, India, Sri Lanka, and Bangladesh.

In view of the diversity of research presented, the present work fills the gap in the literature regarding endogenous factors in the stock market. Thus, the following research problem was raised: What is the impact of endogenous variables (i.e. Liquidity, indebtedness and size) on the performance (i.e. equity return) of BRICS companies? In order to analyze the impact of endogenous variables on the performance of BRICS companies.

As a practical contribution, this study reports the relationship between endogenous factors and company performance, which can be used by managers to compare





competitors and also by public entities to improve the national economy. In the theoretical scope, this study related performance to endogenous factors (e.g. size and capital structure), complementing the studies by Akintimehin et al (2019), Ivascu & Barbuta-Misu (2017), Mehmood, Hunjra and Chani (2019), Nezhad, Nasab and Bakhshani (2017), Mardones and Cuneo (2019), Musah and Kong (2019), Gunawan & Daulay (2016), and Machado and Faff (2018), among other authors.

2 THEORETICAL FRAMEWORK

Company performance is considered a source of sustainable growth for economies, being one of the most important factors analyzed by investors in the decision-making process (Vieira, Neves & Dias, 2019). Analyzing this performance is necessary for all businesses, as obtaining and maintaining performance are the conditions to be part of the ideology of progress (Ivascu & Barbuta-Misu, 2017).

Nezhad, Nasab and Rakhshani (2017) highlighted that performance can be measured using several indicators, with emphasis on ROA (return on assets), ROE (return on equity), and Tobin's Q. ROA is a performance index that shows the return on total assets, while ROE shows the return on equity, i.e., how much value the company generates with its own resources and those of its stockholders (Gunawan & Daulay, 2016). Finally, Tobin's Q defines the value of the company to investors (Nezhad, Nasab & Rakhshani, 2017).

There are several factors that influence performance, being divided into exogenous and endogenous (Vieira, Neves & Dias, 2019; Yang, Xia and Cheng, 2017). These authors performed a study in 2019 observing both factors in performance, using liquidity and company size as example of endogenous factors and GDP, public debts, and investor opinions as exogenous factors.





We highlight that endogenous and exogenous factors influence companies differently (Vieira, Neves & Dias, 2019), being positive or negative. Pham, Tran and Nguyen (2018) stated that everything depends on the structure of the company or its reaction to impacts received from the macro environment.

There are several studies worldwide addressing endogenous factors on company performance. Nohiu and Dermaku (2017) performed a study in which working capital management influenced company performance and stated that this is a competitive advantage against other companies, contributing to the profitability of the company and to the security of its liquidity. Nenu, Vintilă and Gherghina (2018) studied the relationship between capital structure and performance of companies from Bucharest and stated that there is no significant relationship at 10% probability level. Gunawan and Daulay (2016) studied capital structure in Indonesia and found that short- and long-term debts negatively affected company performance, i.e., increasing debt and reducing performance.

Ivascu and Barbuta-Misu (2017) studied capital structure and performance of a company from the Engie group and observed small companies from France, Poland, United Kingdom, Germany, Italy, Romania, and Spain, stating negative relationship between variables. Yin and Sheng (2019) analyzed the performance of companies from the municipality of Shenzhen, China, investing in asset inputs such as research and development (R&D) and observed positive relationship with future performance, as the company improves competitiveness and its position in the stock market with new products. Vieira, Neves and Dias (2019) observed that the company's liquidity had a negative effect on the performance of Portuguese companies.

2.1 PERFORMANCE AND CAPITAL STRUCTURE

Ganiyu, Adepolo, Rodionova and Samuel (2019) and Oke, Saheed and Quadri (2019) stated that capital structure can influence company performance. According to Nguyen and Nguyen (2020), capital structure referred to how a company finances its assets by combining liabilities and stocks. Tran, Dang, Ly, Vu and Hoang (2019) defined





capital structure as a combination of liabilities (short- and long-term) and equity, values that can finance company's operations.

Gunawan and Daulay (2016) stated that capital structure regarding short- and long-term debt is negatively correlated with company performance. Ivascu and Barbuta-Misu (2017) studied capital structure and performance and observed negative relationship in European companies except for the United Kingdom, which showed positive relationship. Nenu, Vintilă and Gherghina (2018) also analyzed capital structure and performance and also observed negative results.

Similarly to the other authors aforementioned, Peizhi and Ramzam (2020) observed negative relationship between capital structure and company performance. The same result was also observed by Mouna, Jianmu, Havidz and Ali (2017) on companies based in Morocco.

Musa and Kong (2019) also studied the impact of capital structure and liquidity on the financial performance of companies and observed negative relationship between capital structure and performance. Moreover, Pham, Tran and Nguyen (2018) found similar results in an Asian country. In general, we noticed that companies change their performance when they change their capital structure. Thus, we formulated the following hypothesis:

H1: Is there a negative relationship between performance and capital structure in BRICS?

2.2 PERFORMANCE AND SIZE (TOTAL ASSETS)

Company size can be measured by the total value of assets. According to Tran et al. (2019), company size is the resource of a company through assets and revenues. Nezhad, Nasab and Rakhshani (2017) observed in their hypothesis tests that company size is positively associated with Tobin's Q and ROA. Vieira, Neves and Dias (2019) and Sayidah, Assagaf and Possumah (2019) also performed similar analyzes and have not confirmed the hypothesis that company size is correlated with performance.





Mardones and Cuneo (2019) studied Latin American companies from 2000 to 2015 and observed positive relationship between company size and financial performance by using ROA, ROE, and Tobin's Q. They noted that company size is extremely important, as large companies tend to generate higher returns, collaborating to increase their performance.

Mouna, Jianmu, Havidz and Ali (2017) and Tran et al. (2019) observed positive relationship between performance and company size, although studies by Phan, Tran and Nugyen (2018) and Rachman, Firdaus and Sanim (2019) showed negative relationship. Based on the articles, we raised the following hypothesis:

H2: Is there positive relationship between company performance and size in BRICS?

2.3 COMPANY PERFORMANCE AND LIQUIDITY

Bogdan, Ban and Popa (2017) and Tran et al. (2019) identified that liquidity is one of the main determinants of company financial performance. Thus, Durrah, Rahman, Jamil and Ghafeer (2016) stated that liquidity reflects the organization's ability to pay its short-term liabilities. In other words, liquidity is how quickly and easily a company pays its obligations. Thus, Mardones and Cuneo (2019) expected that Latin American companies with increased liquidity would also tend to perform better. However, the expected results were not confirmed in their research.

Sheikhdon and Kavale (2016) highlighted that current liquidity is essential for the continuity of financial institutions. Vintilă and Nenu (2016) and Dahiyat (2016) complemented stating that liquidity is important for company performance and can impact profitability, considering other endogenous and exogenous factors.

In this context, Garanina and Belova (2015) highlighted that in order to obtain higher returns, it is necessary to maintain a level of current liquidity that would allow





positive financial performance. Durrah, Rahman, Jamil and Ghafeer (2016), Dermingunes (2016) and Idada, Atu and Kingsley (2019) highlighted that lack of liquidity could compromise company performance. In other words, low liquidity reduces company performance. Based on these researches, we elaborated the following hypothesis:

H3: Is there relationship between performance and current liquidity of companies in BRICS?

3 METHODOLOGY

We used a quantitative approach in this research, relating variables through panel data regression. We observed company performance in relation to the endogenous variables of accounting in Brazilian companies by hypothesis testing. For Creswell (2016), the quantitative approach uses deductive theory at the beginning of a study in order to test or verify a theory.

Thus, the researcher collects data and reflects on whether or not the results are confirmed. Our study highlighted the relationship of endogenous variables, i.e., the relationship between indicators obtained in the financial statements of the company and the stock return. We considered the 323 companies with the BRICS during the period from 2014 to 2019. In short, Brazilian, Indian, Chinese and South African companies (except Russia).

We considered the following endogenous data in the research: (i) current liquidity, (ii) capital structure, and (iii) total assets of the company. Data collection considered the annual period of accounting information. We collected data on the Eikon. Thus, we adopted the annual percentage change in the stock price (i.e., stock return) as the dependent variable for performance. In addition, we adopted current liquidity, capital structure, and total assets as independent variables. The model adopted in the research is expressed as follows:





$$RA = \beta_1(CL) + \beta_2(CS) + \beta_3(TA)$$

Where,

RA = Measured by the annual percentage change in the stock price

CL = Measured by current liquidity

CS = Measured by capital structure

TA = Measured by Total Assets

We summarized variables and their expected relationship in Table 1.

Table 1 – Summary of variables

Explanator y Variables	Expected Signal	Previous studies
Capital structure (CS)	Negative	Nenu, Vintilă and Gherghina (2018) and PeiZhi and Ramzam (2020)
Size (TA)	Positive	Mouna, Jianmu, Havidz and Ali (2017) and Tran <i>et al.</i> (2019)
Current liquidity (CL)	Relationship	Durrah, Rahman, Jamil and Ghafeer (2016) and Idada, Atu and Kingsley (2019)

Source: Elaborated by the authors.

4 ANALYSIS AND DISCUSSION OF RESULTS

Descriptive statistics, through Table 2, shows that: I) research variables showed high coefficient of variation (i.e., higher than 30%); II) EC average of 0.5795 (indicating a higher share of third party capital); III) average annual return of approximately 8%; IV) Current liquidity higher than 3.64 (showing a higher ability to pay in the short-term).



**Table 2:** Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Standard Deviation
RA	0.0849	0.0649	0.9839	-0.7373	0.2316
CL	3.6464	1.8149	19.99	0.0344	4.4389
CS	0.5795	0.5866	0.9806	0.0825	0.1992
Percentage change in TA (PCTA)	0.0852	0.0683	0.9127	-0.6998	0.1848

Source: Prepared by the authors.

We performed robustness tests for the model adopted in our research. We performed the variance inflation factor (VIF) test and found absence of multicollinearity. We also performed the central limit theorem for normality and Fisher type unit root test (ADF and PP) for stationarity (observing stationarity in the research variables)

For Creswell (2016), the quantitative approach uses deductive theory at the beginning of a study in order to test or verify a theory. Thus, the researcher collects data and reflects on whether or not the results are confirmed. In order to best fit the model, we performed Breusch-Pagan and Chow F tests. In face of autocorrelation and heteroscedasticity, the Newey-West technique was used.

Table 3 – Analysis of the Regression of the RA Independent Variable

<i>Newey-West</i>	
INTERCEPT	-0,0515***





PCTA	0,9811***
CL	-0,0024***
CS	0,1051***
R ²	0,6303
R ² adjusted	0,6292
F	561,10
(sig)	0,0000

* Statistically significant indicators at 1% ($P < 0,10$)

** Statistically significant indicators at 5% ($P < 0,05$)

*** Statistically significant indicators at 10% ($P < 0,01$)

Source: Prepared by the authors.

The results of the model adopted in the research in Table 2. Thus, current liquidity presented a negative and significant relation at 1% in the research model, confirming hypothesis three of our research and corroborating Durrah, Rahman, Jamil and Ghafeer (2016) and Idada, Atu and Kingsley (2019).

In turn, the percentage change in the company's total assets (size) showed a positive and significant 1% relationship with the performance of BRICS companies. Thus, confirming the work of Mouna, Jianmu, Havidz and Ali (2017) and Tran et al. (2019) and accepting Hypothesis 2 of the research. Capital structure was positively and significantly relationship with company performance at 1% probability level, not confirming hypothesis one of our research and not corroborating Nenu, Vintilă and Gherghina (2018), Musa and Kong (2019), and Pei Zhi and Ramzam (2020).

Hypothesis 1 of the research was not confirmed, possibly due to the intrinsic characteristics of companies in the emerging market, different from other developed countries. Yet, another important foundation is the importance of considering macroeconomic variables in research related to stock performance. In time, all research





variables were related to performance. The intercept shows significant relationship at 1% probability level in the model adopted.

FINAL CONSIDERATIONS

Considering our objective of analyzing the impact of endogenous variables on the performance of BRICS companies, we observed significant relationship of company performance in the stock market with some endogenous variables at 1% probability level.

However, considering relationship between endogenous variables and performance in the stock market of companies BRICS, we have not confirmed all of research hypotheses. Absence of hypothesis confirmation does not mean absence of relationship, but a relationship that did not corroborate the studies addressed in this research.

Theoretically, the work corroborates the work of Idada, Atu and Kingsley (2019) and Tran et al. (2019) highlighting the impact of endogenous factors on company performance. In the practical scope, the work highlights the importance of managers, investors and others to consider endogenous factors in their investments / financing.

We highlight some main limitations of the research as follows: (i) analysis period of only five calendar years; (ii) absence of macroeconomic variables in the research; (iii) considering only the national stock market; and (iv) not processing data considering a sectoral cut.

We suggest for further research (i) to verify the impact of endogenous and exogenous variables (concomitantly) on stock return; (ii) to consider a longer analysis period with several countries in the sample; (iii) perform analysis considering segregation by business sectors or also by economy sectors.

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