Dividend Policy and Recession Periods: Evidence in the Brazilian Capital Market

ABSTRACT

Objective: To observe the dividend distribution behavior of Brazilian stock market [B]³ listed companies, comparing periods of expansion and recession in the Brazilian economy.

Method: Two panel data models were carried out, with the payout index and the dividend yield index as dependent variables and a dummy classified as 1 for years of economic recession and 0 for years of economic rise as an independent variable. In addition, the financial leverage, size and earnings per share control variables were added to the model.

Originality/Relevance: The study addressed the distribution of dividends according to the cycle of the Brazilian economy, which makes the research original, since no similar studies were found.

Results: Regardless of the proxy used for dividend distribution, companies increase dividend distribution in periods of recession, when there is greater market uncertainty. Regarding the control variables, for the model estimated using the proxy payout index, all variables were significant, while for the model that has the proxy dividend yield as a dependent variable, earnings per share were not significant.

Theoretical/Methodological contributions: Identification of the economic aspect in the dividend policy of Brazilian companies and in the creation of value for shareholders in periods of economic recession.

Keywords: Economic cycle, Dividend policy, Payout index, Dividend yield index.

Camila Teresa Martucheli [iD]
UFMG, Minas Gerais, Brasil
E-mail: camila.martucheli@gmail.com

João Eduardo Ribeiro [iD]
UFMG, Minas Gerais, Brasil
E-mail: joaoribeiro.cco@gmail.com

Eduardo Amat Silva [iD]
UFMG, Minas Gerais, Brasil
E-mail: eduardo.amat@gmail.com

Antônio Artur de Souza [iD]
UFMG, Minas Gerais, Brasil
E-mail: antonioarturdesouza@gmail.com

Juliano Lima Pinheiro [iD]
UFMG, Minas Gerais, Brasil
E-mail: jlp@gold.com.br

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

37

1. INTRODUCTION

Over the years, the Brazilian economy has shown a cyclical behavior, with periods of growth and periods of recession. Therefore, the term 'chicken flight' has always expressed this behavior well, since it showed the rise and fall of growth and deceleration cycles. The last cycle of expressive growth occurred at the time of the "economic miracle" (1968-1971), in which the Brazilian economy grew at relevant rates. However, this was done through external indebtedness, making it necessary, in the late 1970s and early 1980s, to make several macroeconomic adjustments to pay off the loans and financing taken out. The expression "lost decade" emerges, since it was a strongly recessive and inflationary period for the economy (Nakabashi, 2006).

With the implementation of the Real Plan in 1994, the Brazilian economy maintained a stable behavior during the 1990s and 2000s, although it presented some bumps in that period. However, the subprime crisis, caused by subprime mortgage lending in the United States in 2008, peaked in Brazil in 2012, when several macroeconomic indicators showed a lower behavior than those observed in several other countries, thus signaling a period of low economic growth for the Brazilian economy (Sousa Filho, Silva & Menezes, 2018).

According to Silva, Moreira, Pereira, Rezende and Pitangui (2016), Brazil had its investment grade downgraded by three of the largest international risk assessment agencies: Fitch, Moody's and Standard and Poor's. Such evaluation serves as a relevant indicator to attract possible investors to apply in the domestic market, serving as a guideline for the decision making of foreign investments in the country. Due to the various types of investments available to investors, the potential for value growth and the good stock offerings of solid and representative companies, the capital market is the most attractive of Brazilian markets (Carvalho, 2015).

In this context, one of the main attractions for investors' attention is the dividend distribution policy, given the remuneration to be achieved according to the company's behavior in its segment (Silva et al., 2016). Bliss, Cheng and Denis (2015) point out that in times of crisis, companies prefer not to distribute dividends in order to finance new projects and reduce costs. However, it is precisely these moments that do not present attractive investment opportunities, which encourages the company to distribute dividends (capital efficiency). In this sense, based on the duality of economic oscillations and distribution of dividends and on the importance of understanding how the process of remunerating the shareholders and creating value in periods of crisis occurs, this study seeks to answer the following question: Do companies in periods of low growth distribute dividends differently from periods of expansion?

In view of this, the objective of this study is to observe the behavior of dividend distribution of companies listed in the Brazilian stock market [B]³, comparing the periods of expansion and recession of the Brazilian economy. The hypothesis of this research is that companies distribute more dividends in periods of recession than in periods of economic expansion. This hypothesis is supported by the signaling theory (Ross, 1977) and the "bird in the hand" theory (Gordon, 1963; Lintner, 1962), since firms would "calm" shareholders by distributing dividends in times of crisis and these, in turn, would prefer to receive dividends rather than have their profits reinvested in new projects, due to uncertainties of future cash flows.

In order to give more reliability to the information presented from the economic point of view, the reference chronologies for the Brazilian economic cycles disclosed by the Economic Cycle Dating Committee (CODACE) of the Getúlio Vargas Foundation of Rio de Janeiro (FGV-RJ) were adopted. CODACE refers to a quarterly dating with data from the 1st

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

38

quarter of 1981 to the 4th quarter of 2016. According to the Getúlio Vargas Foundation (IBRE/FGV) (2019) Brazilian Institute of Economics portal, CODACE is an independent committee that aims to determine a chronology that serves as a reference for the Brazilian economic cycles. As it is an independent council with no political party ties and also no business ties, it aims to contribute, in various spheres, to give greater credibility to economic decision-making in the governmental and business spheres.

In addition to this introduction, this study is composed of four other sections. The following section reviews the literature, presenting seminal papers on dividend policy, as well as recent empirical studies on the subject. The third section presents the methodology used to achieve the proposed goals. The fourth section presents and discusses the results observed and, finally, the fifth and final section presents the final considerations of the study.

2. LITERATURE REVIEW

In this section a review of the literature on the topic surrounding this research was conducted. For this, seminal works for the development of theories are presented and, later, empirical works on the subject were portrayed.

2.1. Dividend Policy

From the 1950s on, the debate began about the importance of dividend policy for the creation of shareholder value. The classic studies by Lintner (1956) and Gordon (1959) kicked off this discussion by stating that the return to shareholders is lower as the distribution of dividends increases, since investors have less certainty if they will receive any future capital gains. This current of thought, later called by Brealey and Myers (1992) as a conservative or traditional theory, since it favors the receipt of dividends in the present over a possible capital gain at a future date.

In a counterpoint to traditional theory, Miller and Modigliani (1961) defend the irrelevance of dividend policy for value creation, given a perfect market situation. That is, in a tax-free environment, with no transaction costs, no information asymmetry and with equal interest rates for all market participants, the shareholder would be oblivious to dividend policy. In this sense, the creation of value would be a result only of the risk of the business and the capacity of profit generation by the assets of the company.

Unlike Miller and Modigliani (1961), Gordon (1963) and Lintner (1962) defend the theory of the relevance of dividends, also called the "bird in the hand" theory, in which the payment of dividends reduces the risk of shareholders of a company in an uncertain environment. According to this theory, shareholders prefer to receive dividends at the present time rather than expect future gains, since they are certain gains. The valuation of shares in the future represents an uncertainty, which is reduced when dividends are distributed. In other words, a dividend in the hand (in the account) is worth more than a higher, but uncertain, valuation of the stock in the future.

In the 1970s, Brennan (1970) and Litzenberger and Ramaswamy (1979) inserted a third theory into the debate called tax preference. For the authors, in a market with dividend taxation and higher rates than capital gains, shareholders will be prone to a dividend policy that has the lowest possible distribution, since taxation will absorb a large part of their income. Thus, an increase in dividend payments may reduce the price of shares.

From these classic studies, the way was opened for new discussions in finance theory, mainly those related to capital structure and dividend distribution, which were developed and improved, among them, agency theory, information asymmetry and the clientele effect. In a

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

39

seminal article on agency theory, Jensen and Meckling (1976) showed mathematically the presence of costs arising from conflicts between executives and shareholders, the so-called agency costs, in a situation of separation between ownership and control. In this context, where agents seek to maximize their own interests, according to Grossman and Hart (1980), the payment of dividends is capable of reducing agency conflict, since it reduces the resources available to managers.

The distribution of dividends can also be explained by the signaling theory, defended by Ross (1977). According to the author, changes in a company's dividend policy can be interpreted as signaling to the market, which receives and analyzes information in order to assess the impact of such changes on the company's future cash flow, as well as its value. The increase in dividend distribution is viewed positively by market players, as it increases shareholder confidence. The reduction of this distribution is seen in a negative way, because it can be interpreted with bad news. Still according to the signaling theory, a company can increase the dividends distributed in a strategic way to transmit positive signals to the market, calming shareholders and even attracting new investors.

In Brazil, differently from international literature, the agency conflict occurs with more intensity between controlling shareholder and minority shareholders, since in the country there is a high concentration of control of the companies in the hands of a few shareholders, and there are two different classes of shares, the common, with voting rights and the preferred without this right. This way, a great part of the Brazilian stockholders has the right to the distribution of dividends, but they don't have the right to intervene on the company's management (Procianoy, 1996; Bellato, Silveira & Savoia, 2006).

The hypothesis of information asymmetry emerges when it is found that managers have more information about the company's possible future investments than the other shareholders. Within this perspective, some theories relate dividend policy to investment policy, such as pecking order theory, which assumes that companies choose to use retained earnings rather than debt. In this sense, profit distribution varies negatively with investment and positively with profitability. By the trade-off theory, from the perspective of information asymmetry, tax benefits and agency costs lead the most profitable companies to take on more debt and commit to paying more dividends. This is because shareholders choose to decrease the free cash flow in the hands of managers (Brito & Silva, 2005). La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000) corroborate this idea by pointing out that companies in a relatively 'poor' information environment usually increase the distribution of dividends in order to establish a better reputation among shareholders, thus acting in their interests.

Finally, the customer effect hypothesis was initially demonstrated by Miller and Modigliani (1961), who pointed out investors' preference for shares with dividend payments according to the tax band. Elton and Gruber (1970) empirically pointed out that, if there are different tax rates for dividends and capital gains and assuming the existence of rational investors, they will opt for the option of remuneration where the tax is lower, i.e. that results in higher net income, thus meeting the claims of Miller and Modigliani (1961).

Although the evolution of theories and research involving dividend policy is noticeable, as well as the modification of the unrealistic assumptions initially worked out by the authors, there is still no consensus on the creation of value for shareholders in the context of the distribution of profits of organizations. Thus, in order to provide support to this work and the next researches on the subject, some recent empirical studies on dividend policy and value creation are presented in the next subsection.

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

40

2.2. Recent Empirical Studies

In view of recent empirical studies on the subject, more research on the determinants of dividend policy is being conducted. Few are those that focus on analyzing external influences, such as the economic one, as this study proposes. Thus, a good part of the studies presented in this section are surveys on factors that determine dividend distribution, such as the study conducted in Brazil by Ferreira Júnior, Nakamura, Martin and Bastos (2010), which analyzed the main determining factors of dividend policies, through a non-probabilistic sample of 108 Brazilian companies listed in [B]³, in the period from 1997 to 2004. The authors performed a multiple linear regression with panel data and the results showed that the factors revenue instability, growth opportunities, market value size and dividend stability were statistically significant in explaining the dividend distribution of the analyzed companies.

Saravanakumar (2011) studied the determinants of dividend distribution in emerging countries, using a sample of India's top 50 companies over a five-year period. According to the observed results, net profit, sales, liquidity and financial reserve position are the factors that most affect the dividend policy.

Regarding periods of uncertainty and dividend distribution, Julio and Yook (2012) and Jens (2017) conducted a study in which they investigated the relationship between the US presidential elections and dividend distribution. Both came to the conclusion that election periods create the expectation for negative changes in the economic environment and companies prefer to wait for the outcome, i.e., the reduction of uncertainty, to return to invest in new projects. Thus, there are less capital expenditures and more cash, which ends up being converted into dividends for shareholders.

Santos and Galvão (2015) also sought to investigate the factors that lead the company to the decision of distributing or not distributing dividends. Among the factors investigated were profitability, indebtedness, liquidity, ownership control, business risk, size, life cycle and the economic sector. For the authors, there is no consensus on the hypotheses and factors that define dividend policy, which makes the area a fertile field for research that seeks to continue investigations on the subject.

As Ferreira Júnior et al. (2010), Forti, Peixoto and Alves (2015) sought to identify the factors that determine the dividend policy of Brazilian companies listed in [B]³, between 1995 and 2011. The authors studied the relationship between the dividend/total assets ratio and the following determinants pointed out by the literature: firm size, investments, corporate governance, return on assets (ROA), profit growth, leverage, market to book, liquidity, risk, information asymmetry and agency conflicts. As results, Forti et al. (2015) found that the variables size, ROA, market to book, liquidity and profit growth were positively significant. On the other hand, the variables leverage, liquidity, investments, risk and tag along 100% (agency conflicts) were negatively significant.

Specifically on the influence of economic crises on dividend distribution policy, Attig, Boubakri, El Ghoul and Guedhami (2016) state that dividend distribution policy can be influenced by the environment when there is a global financial crisis, affecting mainly family-owned companies. The authors studied 923 family-owned companies in East Asian economies and concluded that those with controlled families were associated with lower dividend payout rates. In addition, the authors also state that this negative association is valid only for companies with greater agency problems, whose proxy analyzed was the available cash flow. Complementing the study, the authors also concluded that in periods of crisis, especially the years analyzed (2008-2009), the negative association between companies with family control and dividend distribution is even stronger. In this context, the authors point out

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

41

that the literature suggests that this negative association is due to the controllers' caution in face of the crisis. The aim is to preserve the company's resources and, therefore, the dividend payout index is low.

Nadeem, Bashir and Usman (2018) argue that studies on dividend policy are focused on developed markets and that, therefore, it would be necessary to conduct studies in developing countries to explore the factors that influence the dividend policy of these markets. The authors examined the determinants of the Pakistani banking sector's dividend policy by using a sample of 24 banks listed on the Karachi (Pakistan) Stock Exchange during 2005-2015. The panel data and multivariate regression methodology was applied with the following variables: total assets, revenue growth, loan deposit ratio, investment opportunities, financial leverage, previous year's dividend, GDP and profitability. The results obtained by the authors reveal that the previous year's profitability, investment opportunities and dividends have a positive and significant effect on the payment of dividends by Pakistani banks, while the growth and deposit rate of loans influence negatively. In addition, the results also showed that the previous year's dividend is the most significant factor affecting the banks' dividend payment rate and that there is no significant difference in factors affecting dividends paid before and after the Pakistani financial crisis.

Garcia, Arnaud and Gomes (2018) sought to identify the determinants of dividend distribution from [B]³ listed financial institutions in the period from 2010 to 2016. To this end, the authors investigated the relationship between dividends and the variables usually studied in the literature in an initial sample of 30 companies with shares active in [B]³ in the year 2017. The results showed that among the variables studied, only investment and size had significant results. The result of the variable size corroborates with the literature, showing that larger companies tend to distribute more dividends. On the other hand, the investment variable did not coincide with what is presented by previous studies.

In one of the most recent empirical studies on corporate dividend policy, Farooq and Ahmed (2019) provided evidence on how the political uncertainty surrounding U.S. national elections affects U.S. companies and their dividend policy. The authors point out that financial markets hold higher information asymmetries during election years than in other years. For the study, they used data from U.S. non-financial companies during the period 1996 to 2016 and built a dummy variable that assumes the value of 1 for the years in which the presidential elections were held and 0 otherwise. The dividend policy was measured by the percentage of earnings paid as dividends, defined as dividend policy or dividend payout. In addition to these two variables, Farooq and Ahmed (2019) also used the following control variables: size, financial leverage earnings per share, growth, total number of analysts who emit predicted earnings for a company in one year and percentage of shares held by insiders. For the analysis, the authors used a multiple regression model and concluded that the dividend policies adopted by U.S. companies are sensitive to presidential elections, since they pay a higher percentage of their earnings as dividends during election years than non-election years, due to uncertainty. It has also been shown that this sensitivity is limited only to presidential elections. Elections for governor have no impact on the dividend policies adopted by companies. Thus, the results suggest that the greater the economic uncertainties (evidenced in election years), the higher the rate of dividend payments.

Silva, Morgam, Machado and Montebelo (2019) studied, through a sample of 223 publicly-held companies listed in [B]³ in the period from 1/1/1998 to 12/31/2016, the relationship between the dividend policy, represented by the indicators payout, dividend yield and dividends to be paid, and the creation or destruction of value for the shareholder, represented by the economic value added (EVA) indicator. The authors concluded that the

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

42

companies that retain the greater part of the profit create more value for the stockholders, once they minimize the cost in relation to the search of other external sources of financing.

3. METHOD

3.1. Classification, Sample and Data Collection

This study is characterized as a quantitative approach, as it makes it possible to test theories and hypotheses, as well as to analyze the results found (Creswell, 2007). It is also classified as descriptive regarding objectives and ex-post-fact regarding procedures (Sampieri & Collado, 2006). According to Cooper and Schindler (2003), the descriptive researches represent a group of researches that describe an observed phenomenon and establish relations between variables. The ex-post-fact researches are a type of research carried through from past facts, in order to identify the factors that determine or contribute for the occurrence of the phenomena. In this sense, the researcher does not control the independent variable(s), once they have already occurred; he only identifies the situations that have naturally evolved and works with them (Cooper & Schindler, 2003).

As a temporal cut of this research, the period from 1995 to 2016 was adopted, comprising, therefore, 22 years of analysis. This period was chosen because of the beginning of the Real Plan, which came into effect in July 1994, as well as the data regarding the years of economic ascension and recession obtained in Codace 2017, which are limited to the year 2016. The initial sample was composed of the companies listed in [B]³, whose data, secondary and collected via the Economatica® system, refer to their accounting and financial information.

After data collection, two tables were created, one for model 1, with the Payout variable as dependent and another for model 2, with the Dividend Yield variable as dependent. After the construction of the tables, all the rows with missing data were removed. In this way, the table of model 1, which was previously composed of 86,856 observations and seven variables, now has 16,092 observations, with the same seven variables. The table of model 2, which was previously composed of the same 86,856 observations, now has 18,134 with the same variables. From this filter, the sample of model 1 had 49 companies between the years 2004 and 2016; and the sample of model 2 had 88 companies between the years 1995 and 2016. Initially, there were 987 companies in the sample.

Then, tests were performed to check the presence of outliers (discrepant data) in both tables, which could compromise the proposed econometric analysis. Once the presence of outliers was detected, it was decided to treat these data, avoiding their elimination, through the winsorization technique, which seeks to stabilize the variance of a normal population (Mande & Son, 2012). In this way, the variables were individually winsorized in 1% and 99%. In the sequence, the variables of both models studied were organized in two unbalanced panels. As the data made available by Codace are quarterly, the variables of this study were also obtained by quarter. The data treatment and the econometric tests obtaining, as well as the models estimation, were operated via R programming language.

3.2. Variables and Econometric Models

The independent variable (ECO) is a dummy classified as 1, for the years when there was a fall in economic activity and 0 for the years when there was economic growth in Brazil, a procedure similar to that of Farooq and Ahmed (2019). Besides the ECO variable representing the economic situation of the country (recession or ascension), other independent variables were also used as control variables. These are them: (i) financial leverage (LEV),

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

43

calculated by the ratio between debt and total assets; (ii) size (SIZE), calculated by the natural logarithm of total assets and; (iii) earnings per share (EPS), calculated by the ratio between profit and share value. Such control variables were also used by Farooq and Ahmed (2019), Nadeem et al. (2018), Silva et al. (2019), among others.

Two proxies for dividends were used as dependent variables. The first is the payout index, calculated through the quotient between the distributed dividend and the net profit. Studies such as Saravanakumar (2011), Silva (2004), Silva et al. (2019), among others, also used the payout in their models. The second proxy is the Dividend Yield (DY), obtained through the quotient between the dividend per share and the share value. As an example of studies that used DY in their analyses, we can mention Leite, Bambino and Hein (2017), Pinto (2017), Silva et al. (2019), among others.

In order to test the hypothesis that firms distribute more dividends in years of economic recession, two panel data models were used. According to Duarte, Lamounier and Takamatsu (2007), models estimated using panel data have several advantages over those of cross-section and time series, such as controlling the heterogeneity present in the data, increasing the number of degrees of freedom, allowing the use of more observations, and decreasing the collinearity between variables. The general estimated models are represented by Equations 1 and 2.

$$Payout_{it} = \beta_{0it} + \beta_{1it}ECO_{it} + \beta_{2it}LEV_{it} + \beta_{3it}SIZE_{it} + \beta_{4it}EPS_{it} + e_{it} \tag{1}$$

$$DY_{it} = \beta_{0it} + \beta_{1it}ECO_{it} + \beta_{2it}LEV_{it} + \beta_{3it}SIZE_{it} + \beta_{4it}EPS_{it} + e_{it} \tag{2}$$

In what: β_0 refers to the intercept parameter β_1, β_2, β_3 e β_4 refer to the coefficients corresponding to each of the explanatory variables of the model; e_{it} refers to the idiosyncratic error, since it varies randomly for all individuals and periods; represents the individual, which in this case are the actions of each company studied; e *t* represents the period being analyzed.

Panel data models can be estimated in three different ways. In the first one, the model is estimated with pooled data, which assumes the same constant and coefficients for all the companies. The second form is estimated through fixed effects, in which it is admitted that each company has distinct and invariant characteristics in time, captured by the constant. Finally, the last form is the estimation of the model by means of random effects, which considers the constant as an unobservable random parameter, in this model the differences between companies are captured by the error term (Wooldridge, 2010). As this set of data models is in panel, it is necessary to define which of these three forms is the most appropriate for the study sample.

To select the most suitable model, first the Breusch-Pagan test and then the Hausman test should be applied. Initially, the Breusch-Pagan test is used to compare the pooled data model with the random effects model. If the test result indicates that the variance of the unobservable effects is equal to zero (acceptance of H0), the pooled data model is the most appropriate. Otherwise (rejection of H0), the random effects model is the most appropriate. In case of H0 rejection, the Hausman test is applied in the sequence, for the choice between fixed effects and random effects models. If the result of this test indicates that the correlation between the unobserved effects and the variables is null (acceptance of H0), the random effects model is the most appropriate. Otherwise (H0 rejection), the fixed effects model is the most appropriate (Wooldridge, 2010).

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

44

Besides the tests to choose the best model, the econometric literature indicates that diagnostic tests, such as multicollinearity, normality of residues, homoscedasticity and autocorrelation are done in order to verify if the model meets the required assumptions. However, it is possible to estimate a more robust model that treats the mentioned problems, using coefficient tests. Thus, two coefficient tests were chosen, one for the random effects model and another for fixed effects. The first one, for the random effects model, is the procedure called "Standard Robust Errors (HAC)", type HC1, which dispenses with the need for tests of heteroscedasticity and autocorrelation of residues. This procedure, proposed by Newey and West (1987), is valid especially in cases of large samples. Still in relation to the coefficient test of the random effects model, the multicollinearity test was performed using the variance inflation factor (IVF). The second coefficient test applied in this study is used in the fixed effects model, in which the t tests are calculated for each coefficient estimation in an adjusted linear regression model. For this, it uses a sandwich estimator for standard errors and a small sample correction for the p-value. This correction is based on the Satterthwaite approximation (1946). This method was developed by Pustejovsky and Tipton (2018) and implemented in R programming language through the package "ClubSandwich" - function coef_test. Like the HAC procedure, the coeftest function also dispenses with the other tests.

Regarding the normality of the residues, Wooldridge (2010) states that, if the sample size is large enough, by the theorem of the central limit, the residues tend to a normal distribution. Therefore, the estimation of the models is not invalidated and the test of normality of the residues becomes dispensable.

4. RESULTS

In order to fulfill the objective of observing the dividend distribution behavior of [B]³ listed companies, comparing the periods of ascension and recession in the Brazilian economy, this section begins by presenting the descriptive statistics of the payout and DY dependent variables and the independent variables. Table 1 shows the descriptive statistics of the winning variables, with the exception of the dummy that did not go through the winning process. From the results shown in Table 1, it is possible to observe that the ECO variable had an average of 0.2959 and standard deviation of 0.4564, thus evidencing that in the analyzed period, there were more quarters of economic growth than of decrease in activity. Since it is a dummy variable, the minimum and maximum values were 0 and 1, respectively.

Table 1
Descriptive statistics of the variables

Variables	Mean	Minimum	Masimum	Standard Deviation
Payout	2.130	2.000	8.245	0.7661987
LEV	26.733	2.00	1177.553	125.4971
SIZE	6271647	2	119987489	15899845
EPS	46.599	2.000	2097.954	240.9219
DY	2.000	2.000	29.166	4.688997
LEV	26.03	2.00	286.87	35.77076
SIZE	5753633	4	120125982	15517327
EPS	2.000	2.000	479.504	60.27521

After winsorizing process, as far as payout is concerned, the average observed was 2.130, with a standard deviation of 0.766, a result close to that observed by Vancin and Procianoy (2016), who studied the relevant aspects for dividend distribution in Brazil between

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

45

2007 and 2013. The average DY was 2.00, with a standard deviation of 4.688, a higher result than that documented by Pinto (2017). This author analyzed the predictability of returns on [B]³ listed shares based on the dividend yield between 2001 and 2017 and observed values close to 2.5. However, Pinto's (2017) study analyzed weekly data.

The correlation test between the independent variables was performed for both models, as shown in Table 2. In the payout model, size and earnings per share presented a negative correlation; size and leverage, a negative correlation; size and economic situation a negative correlation; earnings per share and leverage, a positive correlation; earnings per share and economic situation a positive correlation; leverage and economic situation a positive correlation. It is important to note that in model 1 (payout), the larger the company is, the lower its earnings per share and the lower the leverage.

Tabela 2
Correlation Matrix of Dependent Variables

Variables	Payout				DY			
	ECO	LEV	SIZE	EPS	ECO	LEV	SIZE	EPS
ECO	1				1			
LEV	0.010393	1			0.033602	1		
SIZE	-0.03198	-0.10858	1		0.045642	-0.06323	1	
EPS	0.007176	0.29860	-0.02341	1	0.013472	0.056225	-0.03776	1

In the estimated model for DY, size and earnings per share presented a negative correlation; size and leverage, a negative correlation; size and economic situation a positive correlation; earnings per share and leverage, a positive correlation; earnings per share and economic situation a positive correlation; leverage and economic situation a positive correlation. As in the payout model, in the DY model, the larger the company is, the lower its earnings per share and the lower the leverage.

Once the correlations and the descriptive statistics are analyzed, we proceed to the tests to choose the most appropriate model. As recommended by Wooldridge (2010), the pooled data, fixed effects and random effects models were estimated and then the Breusch-Pagan and Hausman tests were performed for the appropriate choice. Table 3 shows the p-values found in the tests.

Table 3
Testing Panel Data Models

Test	*Payout*	*DY*
Breusch-Pagan	0.02494	2,2e-16
Hausman	0.1537	2,2e-16

The Breusch-Pagan test performed on the payout model as a dependent variable rejected the null hypothesis (p-value = 0.02494), that is, it indicated the use of the random effects model. By Hasuman's test, whose p-value was 0.1537, it was not possible to reject the null hypothesis, that the model with random effects is the most indicated. In this sense, for the model estimated with the payout as dependent variable, the random effects were chosen. For the model whose dependent variable is DY, both tests, Breusch-Pagan and Hasuman, rejected the null hypothesis (p-value = 0), indicating fixed effects as the most appropriate model.

Selecting the random effects and fixed effects models for the payout and DY, respectively, it is necessary to verify, through the variance inflation factor (VIF), if the random effects model presents collinearity problems. The results of these factors are shown in Table 4. As pointed out by Wooldridge (2010), although it is an arbitrary choice, it is

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

46

generally assumed in the literature that values above 10 for VIF indicate collinearity problems. Thus, there are no signs of problems with collinearity among the variables studied. Regarding the fixed effects model, once the control variables are kept constant, multicollinearity is not a problem.

Tabela 4
VIF of Variables Independent of the random effects model for payout

Variables	VIF	1/VIF
ECO	1.001	0.999
LEV	1.110	0.900
SIZE	1.013	0.987
EPS	1.097	0.911

Performed the tests for the choice of models, the coefficients, with the respective level of significance, the Wald test for the significance of the model estimated through random effects (proxy payout) and the F test for the significance of the model estimated through fixed effects (proxy DY) are presented in Table 5. For the regression of model 1 (payout), as shown in the methodology, the coefficient test with robust standard errors (HAC), type HC1, was used. For the regression of model 2 (DY), it was used the coefficient test with Satterthwaite approximation.

Table 5
Regression Results

Variables	Payout				DY			
	Coef.	SD	z	p-value	Coef.	SD	t	p-value
Constant	1.9079e+00	1.73e-02	110.2698	2.2e-16***	-	-	-	-
ECO	4.4288e-02	1.30e-02	3.3982	0.0006799***	0.76372	0.13296	5.744	0.001***
LEV	-4.385e-05	1.53e-05	-2.8581	0.0042675**	-0.0120	0.00292	-4.126	0.001***
SIZE	1.5521e-02	1.45e-03	10.6624	2.2e-16***	-0.4297	0.13724	-3.132	0.00249**
EPS	-4.617e-05	1.78e-05	-2.5870	0.0096898**	0.00114	0.00129	0.882	0.38846
	Unbalanced Panel: n = 49, N = 16092				Unbalanced Panel: n = 88, N = 18134			

Note: The significance degree of the variables' coefficients is given by: 0 '***'; 0.001 '**'; 0.01 '*'; 0.05 '.'; 0.1 ' ', 1

5. DISCUSSION

As a result of these estimates, the economic factor (ECO) has proved to be significant for the distribution of dividends, regardless of the proxy used (payout and DY). This result confirms the initial hypothesis that in periods of falling economic activity (years with a high degree of uncertainty), companies distribute more dividends than in periods of economic growth, as a way of signaling to the market that they are doing well financially, in addition to calming shareholders and attracting more investors, since they are increasing remuneration. The result also goes against the "bird in the hand" theory, in which the investor prefers to have his gain, the dividend, assured, instead of waiting for a possible future gain with the stock valuation. According to Lintner (1956) and Gordon (1959), shareholders would rather receive dividends at the present time than await the company's future cash flows, which are uncertain.

The distribution of higher dividends in periods of low economic activity is also based on the signaling theory (Ross, 1977), since this decision is viewed positively by shareholders, who become more confident about the company's management. Thus, in moments of uncertainty, such as economic recessions, companies choose to distribute more dividends, as a way to increase shareholder confidence.

The main findings of this research are also based on studies by Grossman and Hart (1980). For these authors, the increase in dividend distribution minimizes agency conflicts by reducing available free cash flow and also reflects the good faith of managers by signaling the low existence of agency problems in periods of uncertainty. Similarly, La Porta et al. (2000) defend the idea that companies in environments with little information available, i.e. permeated with uncertainty, increase dividend distribution to ensure a better reputation with shareholders.

The positive correlation between recession periods and higher dividend distribution, result of this survey, can be compared with the positive correlation between election years in the U.S., characterized by periods of great uncertainty, and higher dividend distribution, result of the studies by Julio and Yook (2012) and Jens (2017). According to these authors, in times of asymmetry of information, companies choose to wait to make new investments, resulting in lower spending and more money available, convertible into dividends.

A similar result was also found by Farooq and Ahmed (2019), who concluded that in years of political elections for the US presidency, that is, years with a high degree of uncertainty, the companies distributed more dividends than in other years. It should be added that, in a similar way, Ferreira Júnior et. Al. (2010) found that revenue instability is one of the factors directly related to dividend distribution. In other words, this instability leads to increased uncertainty regarding the company's cash flow. Therefore, periods of instability are inferred, leading to increased uncertainties and increased asymmetry of information, which causes companies to adopt strategies that seek positive signals to the market and the guarantee that the investor will have his remuneration (dividends), regardless of the uncertainties of the moment.

Even so, it is important to emphasize that studies such as Attig et al. These authors identified that in moments of crisis, the researched companies distributed less dividends than in moments of economic rise. However, it is important to point out that the sample was composed by companies with family control.

Despite the control variables, in what concerns the model that uses the payout as proxy for dividend distribution, the financial leverage (LEV) and the earnings per share (EPS) were significant at 1% and had a negative relation with the payout index, demonstrating that the companies more indebted and with higher earnings per share distribute less dividends. The size variable (SIZE), on the other hand, was significant at 1% and positively related to the payout, that is, in this model, the larger companies were the ones that distributed the most dividends. It appears from this result that the most indebted companies use their profits to pay the debt and, therefore, distribute less dividends.

In the model that has DY as a dependent variable, only the EPS variable was not significant, a result that goes against Farooq and Ahmed (2019) for the American market. On the other hand, the LEV and SIZE variables were significant at 1% and both negatively correlated to the dividend distributed, when measured by the DY proxy. These results corroborate the findings of Souza, Peixoto and Santos (2016) and Paiva, Ribeiro and Fodra (2016). Souza et al. (2016) who also found a negative and significant relationship between financial leverage and distributed dividends. The authors analyzed the relationship between corporate governance and dividend distribution of publicly traded Brazilian companies between 2002 and 2013. It is important to note that the different relationship found between

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

48

the size control variable (SIZE) and the payout dependent variables (positive) and DY (negative) can be explained by the number of companies in each model and the years selected after the filter that was carried out with the missing data lines removed.

6. CONCLUSION

This study aimed to observe the dividend distribution behavior of [B]³ listed companies, comparing periods of expansion and recession in the Brazilian economy. For this purpose, secondary data were collected regarding the accounting information and financial indicators of shares of active and inactive public companies, in the period from 1995 to 2016, as well as data on the quarters of ascension and economic recession collected from Codace 2017. The data were collected via Economatica® and the econometric procedures performed from panel data models, via R programming language.

Analyzing the two models presented in this study, in both, the ECO dummy was positively and significantly correlated with the dividend proxies. The result showed that in recession quarters, companies seek to have a greater policy of dividend distribution (payout) and in fact perform a greater distribution of dividends per share (DY). Thus, answering the question in this survey, it was concluded that companies in periods of low economic growth distribute more dividends than in periods of economic expansion. Thus, according to the theories presented in the theoretical framework of this research, especially the "bird in the hand" theory and the signaling theory, and the initial hypothesis, firms seek to reduce the asymmetry of information and calm investors in times of economic uncertainty, signaling in a positive way with the increased distribution of dividends.

This study offers an important contribution to the expansion of the financial literature, especially in relation to the identification of the economic aspect in the dividend policy of Brazilian companies and the creation of value for shareholders in periods of economic recession. In addition, this research is also relevant for investors who have an interest in investing their capital in the shares of these companies, since they will be able to make better decisions by observing the variables analyzed here. Another positive point of this research concerns the analyzed period, as it is longer than that adopted in other studies on the subject. As for the limitations, it is worth mentioning the non-availability of all the data of the companies listed in [B]³ in the Economatica® database, as well as the variables used in the model, since there may be other relevant factors that were not incorporated in this study.

Therefore, it is suggested for future studies, in addition to the financial information on organizations and economies made available by Codace, to also analyze macroeconomic variables such as inflation, GDP growth, interest rates, among others, since organizations can modify their dividend distribution policies due to these variables and the economic and political moment in which the country finds itself. Moreover, it is necessary in future studies to analyze not only the dividends distributed, but also the distribution of profits through interest on equity, a practice increasingly common in Brazilian companies. It is also suggested to evaluate whether the increase in the distribution of dividends in periods of recession has led to an increase in the value of companies, as recommended by the "bird in the hand" theory.

REFERENCES

Attig, N., Boubakri, N., El Ghoul, S., & Guedhami, O. (2016). The global financial crisis, family control, and dividend policy. *Financial Management*, *45*(2), 291-313. https://doi.org/10.1111/fima.12115

Bellato, L. L. N, Silveira, A. D. M, & Savoia, J. R. F. (2006). Influência da estrutura de propriedade sobre a taxa de pagamento de dividendos das companhias abertas brasileiras.

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

49

In: *Encontro Nacional da Associação Nacional dos Programas de Pós-Graduação em Administração – ANPAD*.

Bliss, B. A., Cheng, Y., & Denis, D. J. (2015). Corporate payout, cash retention, and the supply of credit: Evidence from the 2008–2009 credit crisis. *Journal of Financial Economics*, *115*(3), 521-540. https://doi.org/10.1016/j.jfineco.2014.10.013

Brealey, R. A., Myers, S. C., & Allen, F. (1992). *Princípios de finanças empresariais*. 3. ed. Lisboa: McGraw-Hill de Portugal.

Brennan, M. J. (1970). Taxes, market valuation and corporate financial policy. *National Tax Journal*, *23*(4), 417-427.

Brito, R. D., & Silva, J. C. G. D. (2005). Testando as previsões de trade-off e pecking order sobre dividendos e dívida no Brasil. *Estudos Econômicos*, 35(1), 37-79. https://doi.org/10.1590/S0101-41612005000100002

Carvalho, F. B. D. (2015). *A importância do mercado de capitais: considerações das teorias econômica e financeira*. Trabalho de conclusão de curso em Ciências Econômicas, Universidade Estadual Paulista Julio de Mesquita Filho, Araraquara, SP.

Cooper, D. R., & Schindler, P. S. (2003). *Métodos de pesquisa em administração.* 7. ed. Porto Alegre: Bookman.

Creswell, J. W. (2007). Tradução Luciana de Oliveira da Rocha.–. *Projeto de pesquisa: métodos qualitativo, quantitativo e misto. 2ª ed. Porto Alegre: Artmed*.

Duarte, P. C., Lamounier, W. M., & Takamatsu, R. T. (2007). Modelos econométricos para dados em painel: aspectos teóricos e exemplos de aplicação à pesquisa em contabilidade e finanças. In *Congresso USP de Controladoria e Contabilidade* (Vol. 4, pp. 1-15).

Elton, E., & Gruber, M. (1970). Marginal Stockholder Tax Rates andthe Clientele Effect. *Review of Economics and Statistics 52(1)*, 68-74. https://doi.org/10.2307/1927599

Farooq, O., & Ahmed, N. (2019). Dividend policy and political uncertainty: Evidence from the US presidential elections. *Research in International Business and Finance*, *48*, 201-209. https://doi.org/10.1016/j.ribaf.2019.01.003

Ferreira Júnior, W. O., Nakamura, W. T., Martin, D. M. L., & Bastos, D. D. (2010). Evidências empíricas dos fatores determinantes das políticas de dividendos das firmas listadas na Bovespa. *FACEF Pesquisa-Desenvolvimento e Gestão*, *13*(2).

Forti, C. A. B., Peixoto, F. M., & Alves, D. L. (2015). Fatores determinantes do pagamento de dividendos no Brasil. *Revista Contabilidade & Finanças*, *26*(68), 167-180. https://doi.org/10.1590/1808-057x201512260

Garcia, I. A. S., Arnaud, H. M. V., & Gomes, A. K. L. J. (2018). Fatores Determinantes da Distribuição de Dividendos de Instituições Financeiras Listadas na B3. In: *XVIII USP International Conference in Accountng*. Disponível em https://congressousp.fipecafi.org/anais/Anais2018/ArtigosDownload/1127.pdf.

Gordon, M. J. (1959). Dividends, earnings, and stock prices. *The Review of Economics and Statistics*, *41*(2), 99-105. https://doi.org/10.2307/1927792

Gordon, M. J. (1963). Optimal investment and financing policy. Journal of Finance, v. 28, n. 2, p.264-272. https://doi.org/10.1111/j.1540-6261.1963.tb00722.x

Grossman, S., Hart, O., 1980. Disclosure laws and take-over bids. J. Finance 35 (2), 323–334.

Instituto Brasileiro de Economia da Fundação Getúlio Vargas. (2019). *Comitê de Datação de Ciclos Econômicos.* Disponível: https://portalibre.fgv.br/estudos-e-pesquisas/codace/.

Jens, C.E., 2017. Political uncertainty and investment: causal evidence from U. S. gubernatorial elections. J. Financial Econ. 124 (3), 563–579.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics, 3*(4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

50

Julio, B., Yook, Y., 2012. Political uncertainty and investment cycles. J. Finance 67 (1), 45–84.
 https://doi.org/10.1111/j.1540-6261.2011.01707.x

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., Vishny, R.W., 2000. Agency problems and dividend policies around the world. J. Finance 55 (1), 1–33.

Leite, M., Bambino, A. C., & Hein, N. (2017). Relação entre política de dividendos e desempenho econômico financeiro em empresas brasileiras e chilenas. *Revista de Gestão, Finanças e Contabilidade,* *7*(1), 205-221. http://dx.doi.org/10.18028/2238-5320/rgfc.v7n1p205-221

Lintner, J. (1956). Distribution of incomes of corporations among dividends, retained earnings, and taxes. *The American economic review*, *46*(2), 97-113.

Lintner, J. (1962). Dividends, earnings, leverage, stock prices and the supply of capital to corporations. The Review Economics and Statistics, v. 44, n. 3, p. 243-269. https://doi.org/10.2307/1926397

Litzenberger, R. H., & Ramaswamy, K. (1979). The effect of personal taxes and dividends on capital asset prices: Theory and empirical evidence. *Journal of Financial Economics*, *7*(2), 163-195. https://doi.org/10.1016/0304-405X(79)90012-6.

Mande, V., & Son, M. (2012). CEO centrality and meeting or beating analysts' earnings forecasts. *Journal of Business Finance & Accounting*, *39*(1-2), 82-112. https://doi.org/j.1468-5957.2011.02262.x.

Miller, M. H., & Modigliani, F. (1961). Dividend policy, growth, and the valuation of shares. *The Journal of Business*, *34*(4), 411-433. https://doi.org/10.1086/294442

Nadeem, N., Bashir, A., & Usman, M. (2018). Determinants of dividend policy of Banks: Evidence from Pakistan. *The Pakistan Journal of Social, Issues Special Issue (June)*, 19-27. https://doi.org/10.5829/idosi.mejsr.2013.18.3.12200

Nakabashi, L. (2006). Crescimento da Economia Brasileira e Fluxo de Capitais a Partir do Modelo de Thirlwall: 1968-1980 e 1992-2000. *Revista Economia Ensaios*, *21*(1).

Newey, W.K. e K.D. West (1987). A Simple, Positive Semi-definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. *Econometrica*, 55, 703–708. https://doi.org/10.3386/t0055

Paiva, J. F. M., Ribeiro, K. C. S. & Fodra, M. (2016). Governança corporativa e a distribuição de dividendos no setor bancário brasileiro. *Revista Espacios, 37*(25).

Pinto, B. P. (2017). *Dividend yield e os retornos das ações brasileiras*. Dissertação de mestrado em Finanças e Economia Empresarial, Fundação Getúlio Vargas, Rio de Janeiro. RJ.

Procianoy, J. L. (1996). Dividendos e tributação: o que aconteceu após 1988-1989. *Revista de Administração*, *31*(2), 7-18.

Pustejovsky, J. E., & Tipton, E. (2018). Small-sample methods for cluster-robust variance estimation and hypothesis testing in fixed effects models. Journal of Business & Economic Statistics, 36(4), 672-683. https://doi.org/10.1080/07350015.2016.1247004

Ross, S. A. (1977). The determination of financial structure: the incentive-signalling approach. Bell Journal of Economics, n. 8, p. 23-40. https://doi.org/10.2307/3003485

Sampieri, R. H., & Collado, C. F. (2006). Lúcio P.B. Metodologia de Research. 3. ed. São Paulo: MacGraw-Hill.

Santos, J. F., & Galvão, K. S. (2015). Política de dividendos e seus fatores determinantes: evidenciando a ausência de consenso teórico-empírico. *Revista da FAE*, *18*(1), 52-69.

Saravanakumar, S. (2011). Determinants of corporate dividend policy. *Asia Pacific Business Review, 7(*2), 25-36.

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

51

Satterthwaite, F. E. (1946). An approximate distribution of estimates of variance components. Biometrics bulletin, 2(6):110–114. https://doi.org/10.2307/3002019

Silva, A. L. C. (2004). Governança corporativa, valor, alavancagem e política de dividendos das empresas brasileiras. *Revista de Administração da Universidade de São Paulo - RAUSP, 39*(4).

Silva, N. D., Moreira, K. D. S., Pereira, V. S., Rezende, C. F., & Pitangui, C. (2016). Empresas Brasileiras Emissoras de ADRs: Um estudo da distribuição de dividendos em períodos de crise. In *Anais do Congresso Brasileiro de Custos-ABC*.

Silva, J. E., Morgan, L. M., Machado, M. J. D. C. M., & Montebelo, M. I. D. L. M. (2019). Política de dividendos e criação de valor: um estudo no mercado brasileiro. *Revista Ambiente Contábil, 11*(1), 77-97. https://doi.org/10.21680/2176-9036.2019v11n1ID15985

Souza, D. H. O., Peixoto, F. M., & Santos, M. A. (2016). Efeitos da Governança Corporativa na Distribuição de Dividendos: Um Estudo em Empresas Brasileiras. *Advances in Scientific & Applied Accounting, 1*(1). http://dx.doi.org/10.14392/asaa.2016090104

Sousa Filho, J. F., Silva, L. A., & Menezes, V. B. (2018). A Dinâmica das Exportações Brasileiras nos Períodos Pré e Pós-Crise Financeira Mundial de 2008/2009: Uma Análise Shift-Share. *RDE-Revista de Desenvolvimento Econômico*, *2*(40). http://dx.doi.org/10.21452/rde.v2i40.5667

Vancin, D., & Procianoy, J. L. (2016). Índices contábeis e a decisão do pagamento de dividendos. *Revista Contemporânea de Contabilidade, 13*(28), 57-80. http://dx.doi.org/10.5007/2175-8069.2016v13n28p57

Wooldridge, J. M. (2010). *Introdução à econometria:* uma abordagem moderna. 2. ed. São Paulo: Cengage Learning.

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

52

Política de Dividendos e Períodos de Recessão: Evidências no Mercado de Capitais Brasileiro

RESUMO

Objetivo: *Observar o comportamento da distribuição de dividendos das empresas listadas na B3 comparando os períodos de expansão e de recessão na economia brasileira.*

Método: *Foram realizados dois modelos de dados em painel, o qual contaram com o índice payout e com o índice dividend yield como variáveis dependentes e uma dummy classificada como 1, para os anos em que houve queda na atividade econômica e 0 para os anos em que apresentou crescimento econômico, como variável independente. Além disso, foram acrescentadas ao modelo, as variáveis de controle alavancagem financeira, tamanho e o lucro por ação.*

Originalidade: *O estudo abordou a distribuição de dividendos de acordo com o ciclo da economia brasileira, o que torna a pesquisa original, uma vez que não foram encontrados estudos semelhantes.*

Resultados: *Independentemente da proxy de distribuição de dividendos utilizada, as empresas aumentam a distribuição de dividendos em períodos de recessão, quando há maior incerteza no mercado. No que tange às variáveis de controle, para o modelo estimado utilizando a proxy índice payout, todas as variáveis se mostraram significantes, enquanto para o modelo que tem a proxy dividend yield como variável dependente, o lucro por ação não se mostrou significante.*

Contribuições: *Identificação do aspecto econômico na política de dividendos das empresas brasileiras e na criação de valor para os acionistas em períodos de recessão econômica.*

Palavras-chave: *Ciclo econômico, Política de dividendos, Índice payout, Índice dividend yield.*

Camila Teresa Martucheli
UFMG, Minas Gerais, Brasil
E-mail: camila.martucheli@gmail.com

João Eduardo Ribeiro
UFMG, Minas Gerais, Brasil
E-mail: joaoribeiro.cco@gmail.com

Eduardo Amat Silva
UFMG, Minas Gerais, Brasil
E-mail: eduardo.amat@gmail.com

Antônio Artur de Souza
UFMG, Minas Gerais, Brasil
E-mail: antonioarturdesouza@gmail.com

Juliano Lima Pinheiro
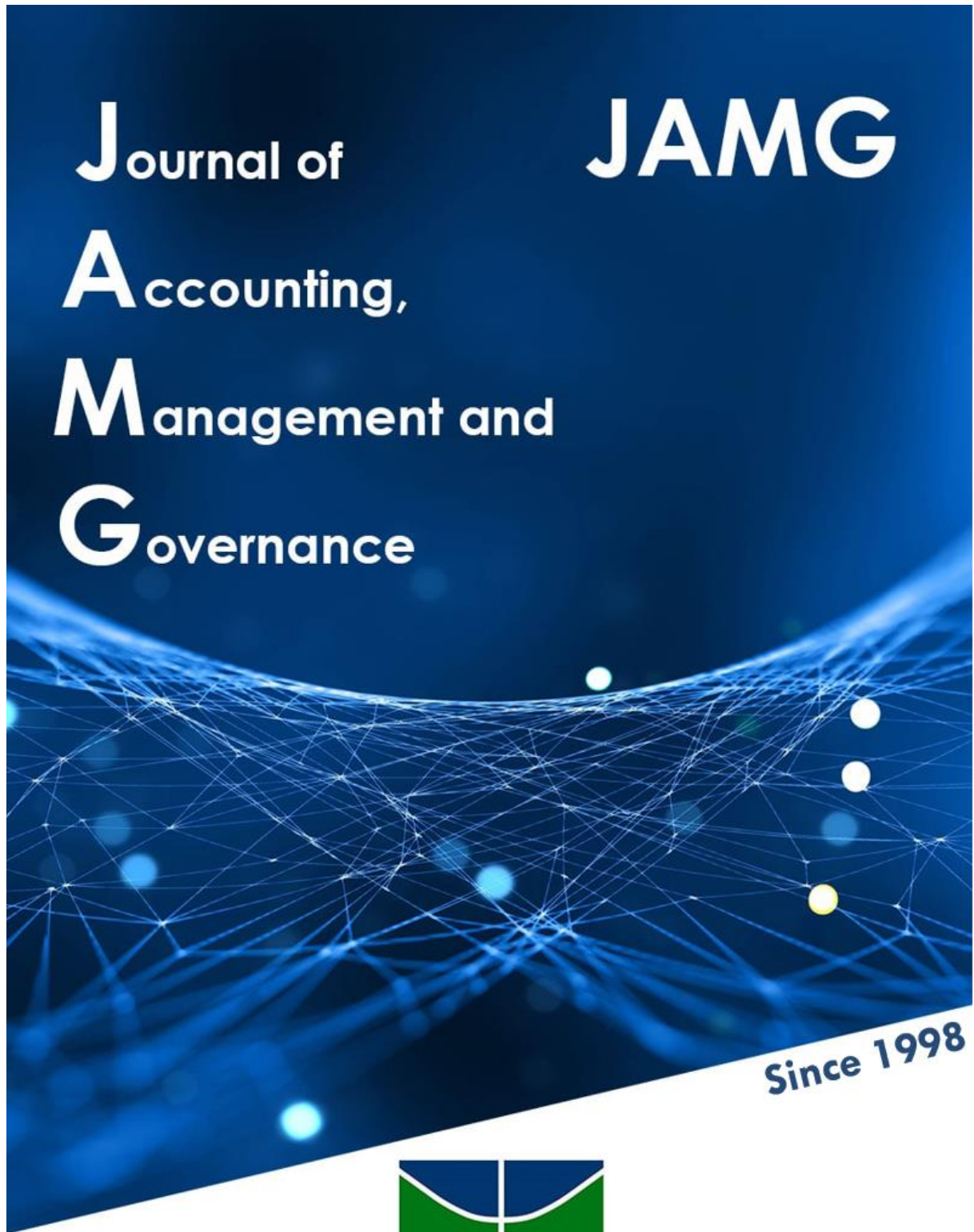*UFMG, Minas Gerais, Brasil*
E-mail: jlp@gold.com.br

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

53

Journal of Accounting, Management and Governance. Brasilia, V.24 N.1, p. 37-54, Jan.-Apr. 2021

54