Revista UNEMAT de Contabilidade

v. 10, n. 20, 2021

Could increasing dividends predict asset valuations in the Brazilian electricity sector?

Os dividendos crescentes podem prever avaliações de ativos no setor elétrico brasileiro?

¿Podría el aumento de dividendos predecir las valoraciones de los activos en el sector eléctrico brasileño?

Nome: Alexandre Rodrigues da Silva
Instituição: Universidade Federal do Rio Grande do Sul - UFRGS
E-mail: alexandrerodriguesdasilva1976@gmail.com

Nome: Guilherme Kirch
Doutor em Administração
Instituição: Universidade Federal do Rio Grande do Sul – UFRGS
E-mail: silvaalexandre763@yahoo.com

Resumo

De acordo com Wang (2004), os mercados de ações têm comportamentos distintos no curto e no longo prazo. O investimento em dividendos vê menos anos com perdas, adicionando utilidade significativa ao investidor (CLEMENS, 2012). O objetivo deste estudo é demonstrar se o pagamento de dividendos pode se relacionar com o futuro ganho de valor das suas respectivas ações em empresas do setor elétrico brasileiro. Resultados: os achados mostraram variação positiva do valor dos ativos um ano após sua aquisição naquele grupo que teve variação positiva de dividendos no ano anterior, compatível com a estratégia "Dogs of Dow", não sendo encontrada essa relação para períodos de tempo mais longos, tanto para dividendos quanto para cotações. Assim, sugere-se que a estratégia de buscar valorização de ativos com base no seu pagamento prévio de dividendos deve ater-se ao período de um ano anterior de pagamento de dividendos visando um horizonte limitado a um ano após a compra da ação da respectiva empresa.

Palavras-chave: política de dividendos; setor elétrico, finanças corporativas

Abstract

According to Wang (2004), the stock markets have different behaviors in the short and long term. Dividend investment sees fewer years with losses, adding significant utility to the investor (CLEMENS, 2012). The purpose of this study is to demonstrate whether the payment of dividends can relate to the future gain in value of their respective shares in companies in the Brazilian electricity sector. Results: the findings showed a positive variation in the value of assets one year after their acquisition in that group that had a positive change in dividends in the previous year, compatible with the "Dogs of Dow" strategy, and this

relationship was not found for longer periods of time, both for dividends and for stocks prices. Thus, it is suggested that the strategy of seeking asset valuation based on its previous dividend payment should be limited to the previous year's dividend payment period, aiming at a horizon of one year after the purchase of the respective company's share.

Keywords: dividend policy; electric sector, corporate finance

Resumen

Según Wang (2004), los mercados de valores tienen comportamientos diferentes a corto y largo plazo. La inversión en dividendos ve menos años con pérdidas, lo que agrega una utilidad significativa para el inversionista (CLEMENS, 2012). El propósito de este estudio es demostrar si el pago de dividendos puede relacionarse con la ganancia futura en valor de sus respectivas acciones en empresas del sector eléctrico brasileño. Resultados: los hallazgos mostraron un cambio positivo en el valor de los activos un año después de su adquisición en ese grupo que tuvo un cambio positivo en los dividendos en el año anterior, compatible con la estrategia “Dogs of Dow”, y esta relación no se encontró para períodos de tiempo más largos, tanto para dividendos como para cotizaciones. Por lo tanto, se sugiere que la estrategia de buscar la valoración de activos con base en el pago de dividendos anterior debe ceñirse al período de pago de dividendos del año anterior, con un horizonte limitado a un año después de la compra de la acción de la respectiva empresa.

Keywords: política de dividendos; sector eléctrico, finanzas corporativas

1 Introduction

According to Clemens (2012), a place of special interest for recent investors has been investing in dividends. Investing in dividends has historically outperformed the broader market and investing in value, while at the same time presenting less risk. Dividend investment "overrides" value investment and low volatility investment, but it is its own independent investment style. The specific reasons for the superior performance of investment in dividends are a reduction in agency costs associated with high free cash flows and a probable systematic pricing error (undervaluation) of shares with a high dividend payment. Dividend investment sees fewer years with losses, which, according to Prospect Theory, adds significant utility to the investor's experience. The author demonstrates that the superior performance of shares with high dividend yield was robust in the period 1928-2011. Since the underlying reasons for this superior performance are more behavioral than institutional in nature, history is likely to repeat itself.

Wang (2004) demonstrated the stock markets have different behaviors in the short and long term. In the short term, all stocks react to similar imminent economic forces and reflect investors' risk appetite. In the long run, some companies will disappear and fall by the wayside, while others may prosper and last for several human lives. Many of the short-term effects disappear in the long run with just a few macro themes and the economic forces remain intact. Only with the historical perspective is it clear which are the secular trends and which are just whims and fantasies of the markets. As shown by the term structure of the correlations, positive correlations between stocks or different classes of assets tend to decrease with the investment horizon, which highlights the divergent business realities and economic forces between companies, sectors and countries. Some structural issues in the fund management industry create their own fallacies. For example, with more and more money invested in index funds or S&P 500 companies, the index premium has increased over the past decade, creating a new anomaly, which may eventually lead to underperforming passive investment. With fund managers focusing on short-term performance and under business pressure, some inefficiencies and differences in the long-term market remain under-exploited. The behavioral finance theory offered more insight into market inefficiency and investors' overreactions in the long run. Excessive investor confidence about the accuracy of private information and its ability to forecast leads to a short-term price boost, excess volatility and eventual reversion to the average.

DeBondt and Thaler (1985) show that, based on Center for Research in Security Prices CRSP data between 1926 and 1982, previous "losing" shares gained about 25% more than previous "winning" shares thirty-six months after the portfolio was formed. Lakonishok *et al*. (1994) argue that market participants appear to have consistently overestimated the future growth rates of glamorous stocks in relation to value stocks. Consequently, value strategies produce higher returns than glamor strategies in the long run, with an average annual spread of around 10%. Using conventional risk measures, value strategies also seem to be no longer risky. The notion that stock returns are more explainable and predictable in the long run is also supported by Fama and French (1988b), Fama (1990) and Cochran *et al.* (1993).

Firms from the Brazilian electricity sector, unlike other sectors, have their own characteristics that put them in a separate group, distinct from conventional economic theory. Because they

are public utility companies (utilities), they operate from public concessions (hence also the term “concessionaires”). Despite its form of operation, which varies from electricity generation to transmission and distribution, its service is subject to regulatory agencies that, in addition to inspecting the quality of service provision, define the pricing of the fees charged (SILVA and KIRCH, 2020).
The electricity sector, not only because it is classified as part of the public concession sectors that makes it different from other sectors of the economy, but, due to its specific form of regulation, places it on a different level. According to Bernardino *et al.* (2015), it is a regulated sector and subordinated to public policies related to price, contribution margin and returns. In the Brazilian case, its regulatory structure resulting from the time of privatizations that occurred in the 1990s creates, in a sector already full of challenges, very important issues, such as the dividend policy (SILVA; KIRCH, 2019). Companies in the electricity sector are characterized by paying high dividends (BRIGHMAN et al., 2001), in some cases with a payout of more than 100%, a fact also presented in companies belonging to Brazilian electricity sector (RODRIGUES et al., 2016; SILVA, 2019).

The purpose of this study is to demonstrate whether the payment of dividends can relate to the future gain in value of their respective shares within the Brazilian electricity sector. This article is divided as follows: this introduction, followed by the theoretical framework where a bibliographic review is demonstrated which will support the working hypotheses. Then, the methodology details how the data was collected and analyzed. In the results section, the data analysis is shown according to the hypotheses and the results are discussed in the light of the literature. The article ends with the final considerations, where the conclusions are taken up.

2 Theoretical Reference

Clemens (2012) explain the literature on the performance of dividend yield as an investment strategy that can be divided into two broad categories: 1) the return forecast literature, which is more academic in nature and 2) the more oriented long-term return studies for the practice of various dividend strategies. The first category includes studies like Fama and French (1988), which found an increasing predictive power of dividend yield as the forecast horizon extended from months to years. The work of Ang and Bekaert (2007), concludes that the dividend yield is not (more) a good predictor of the subsequent return. One of the reasons may be the increase in the use of share buybacks as a way to return money to shareholders, as proposed by Robertson and Wright (2006), leaving the dividend yield to explain a smaller proportion of the shareholders' total cash return. The second category of literature is more concerned with the long-term returns of "simple" investment strategies, such as "The Dogs of the Dow", for example. “The Dogs of the Dow” is a simple investment strategy whereby, at the beginning of the year, the investor buys the ten shares in the Dow Jones index with the highest dividend yield. In the following year, the same procedure is repeated, etc. Looking at the gross or risk-adjusted return, the “Dogs of the Dow” dividend investment strategy has been a success throughout the 1961-1998 period in the USA. More interesting, however (given its lower level of diversification), is that the portfolio of 10 stocks with high dividends actually saw better overall risk metrics than the 30 stocks on the Dow Jones index.

A 38-year time series combining data from Hirschey (2000) and O'Higgins (2000) was created by Clemens (2012). Based on the analysis of this sample, the following general

conclusion can be drawn about investment in dividends: a) being unique in its own right, investment in dividends overrides investment of value and investment of low risk; b) stocks with a high dividend yield tend to outperform stocks with a low dividend yield in the long run. However, Clemens (2012) demonstrates that extreme dividend yield actions carry some risks that can be avoided by focusing not only on dividend yield, but also on the persistence and sustainability of dividends.

Silva and Dantas (2015) point out that there is no conclusion regarding the relevance of dividends to the company's market value, but generally the management of companies treats dividend policy as an important factor. Ziv and Nissim (2001) provide strong evidence to support the information content of the dividend hypothesis. After controlling for the expected change in future earnings, changes in dividends are positively related to changes in earnings in each of the two years after the change in dividends. The authors also showed that changes in dividends are positively related to the level of future profitability, after controlling for book value, past and current profitability, expectations of the future profitability market as reflected in the price before the change in dividends, past dividends and dividend changes and consensus analyst earnings forecasts, when available. Results are maintained when profitability is measured in terms of future profits and future abnormal profits, but are stronger for abnormal profits. In this sense, it is possible to verify that, in the majority, the studies that investigated the theme in Brazil signaled a possible relationship between the variables market value and dividend policy (BRUGNI *et al*., 2012; CORSO *et al*., 2012; FORTI *et al*., 2015).

Viana Junior et al. (2017), based on the Theory of the Relevance of Dividends, investigated the relationship between dividend policy and market value at companies listed on the BM&F Bovespa. Through correlation tests between the variables analyzed and multiple regression with data in a balanced panel, data from 189 companies were analyzed, referring to the period from 2009 to 2014. The results showed that, when considering all companies, payout did not it presents itself in a significant way to explain the market value, which contradicts the findings of Brugni et al. (2012), Anjos and Monte (2013), Forti *et al.* (2015) and Viana and Ponte (2015). However, in a sectoral analysis, it was observed that, in Non-Cyclical Consumption and in Public Utility, the distribution of dividends can explain, statically, the market value. In these sectors, moreover, whose companies usually distribute high amounts of dividends due to, among other factors, the regulation by government agencies.

Silva and Kirch (2019), when applying the model of Elton and Gruber (1970) in the comparison among shares of the Brazilian electric system with the assets that make up the Ibovespa index, demonstrated that the shares of the electric sector have a greater possibility of generating price increases shares higher than 2% than those of the Ibovespa group after payment of dividends. This effect, however, was restricted to the first day ex-dividend and for companies with a yield below 2%.

In view of the above, the following hypothesis was reached:

Hypothesis: a) the amount of dividends paid in the Brazilian electric sector is related to the share prices in later periods; b) this correlation is positive; c) this correlation expands beyond the short term (fiscal year).

3 Methodology

Public companies in the electricity sector listed on B3 were selected from the Yahoo finance website. The collection period ranged from the IPO[1] of the shares until December 31, 2019. Dividend payment and quotation data for each company were collected. Initially, the data were grouped by means of annual variation of the share price and the annualized aggregate of dividend payments. Secondly, it was divided on a semi-annual basis. In each case, stocks whose quotes were below the 25th percentile and those whose quotes were above the 75th percentile were separated based on the annual variation of 1 or 3 years (t +1 in relation to t0 and t+3 in relation to t0). The dividends of these 2 groups of percentiles were calculated as mean ± standard error for the previous three years (t-1, t-2 and t-3 in relation to t0) in the case of 3 years and for the two previous years (t -1 and t-2 in relation to t0) in the case of 1 year. Then, the variation in the payment of dividends compared to the previous year and to the previous two and three years was compared. The same was done with the averages of the previous semester and of the previous 2 semesters of dividends and compared the variations in prices of semesters t-1, t-2 with semester t0. Student's t test was used with a significance level set at 0.1.

Chi-square test with a significance level of 0.1 was also used in two different situations: the first, on the subsample composed of shares with dividend variations below the 25th percentile and above the 75th percentile of the sample. Positive (negative) changes in dividends were compared to positive (negative) changes in share prices. The second form of evaluation consisted of using the entire sample in the analysis.

4 Results

Eighteen publicly traded companies in the Brazilian electricity sector were evaluated during the period from January 1, 2009 to December 31, 2019, totaling 155 companies-year or 324 companies-semester. Table 1 shows the variation of stock prices in 3 years (t3 in relation to t0), on average ± standard error, divided into two groups according to the percentiles (below the 25 and above the 75) due to the variation in the dividends paid in one, two and three years prior to t0. Despite the variation in the dividends paid between the different groups of percentiles always showing statistically significant differences, the same did not happen with the stocks in the three periods studied.

However, the variation in dividends paid in the previous year showed that in the 75th percentile group there was an average appreciation of 42% in the following three years, compared to the 25th percentile group, which fell by 1.8%. The great dispersion of the results, however, explains the absence of statistical significance and the refutation of the hypothesis.

[1] Initial stock offering

Table 1 – Change in share prices (%) in 3 years based on the change in dividends paid (%)

Variation in dividends paid in the previous year		
	Dividends (mean ± standard error)	Share price (mean ± standard error)
Above 75th Percentile	121,3±15,7	42±32,8
Below 25th Percentile	-37,5±3,1	-1,8±12,9
P value	$2x10^{-12}$*	0,22
Variation in dividends paid in the previous two years		
	Dividends (mean ± standard error)	Share price (mean ± standard error)
Above 75th Percentile	124,7±10	27±38,5
Below 25th Percentile	-35,9±2,2	51,8±37,1
P value	$3x10^{-16}$*	0,74
Variation in dividends paid in the previous three years		
	Dividends (mean ± standard error)	Share price (mean ± standard error)
Above 75th Percentile	141±19,8	35,1±55
Below 25th Percentile	-29,6±2,9	15,6±34,3
P value	$6x10^{-9}$*	0,77

* statistical significance

Table 2 shows the variation in stock prices in 1 year (t1 in relation to t0), on average ± standard error, divided into two groups according to the percentiles (below the 25 and above the 75) according to the variation in the dividends paid in one and two years prior to t0. Despite the fact that dividends always present statistically significant differences, the same did not happen with prices in the two periods studied. However, the variation in dividends paid in the previous year showed that in the 75th percentile group there was an average appreciation of 47.4% in the following year, compared to the 25th percentile group, which suffered a 1.5% devaluation. The great dispersion of results, however, again explains the absence of statistical significance and the acceptance of the null hypothesis.

Table 2 – Change in share prices (%) in 1 year based on the change in dividends paid (%)

Variation in dividends paid in the previous year		
	Dividends (mean ± standard error)	Share price (mean ± standard error)
Above 75th Percentile	58,3±5,3	47,4±31,8
Below 25th Percentile	-21,8±3,3	-1,5±15
P value	$1,9x10^{-18}$*	0,16
Variation in dividends paid in the previous two years		
	Dividends (mean ± standard error)	Share price (mean ± standard error)
Above 75th Percentile	91,9±9,1	4,6±21
Below 25th Percentile	-31,6±3,6	13,5±17,9
P value	$5x10^{-17}$*	0,75

* statistical significance

Table 3 shows the variation of stock prices in one and two semesters (t2 and t1 in relation to t0), on average ± standard error, divided into two groups according to the percentiles (below the 25th and above the 75th) according to the variation in dividends paid in the semester prior

to t0. Despite the fact that the dividends always present statistically significant differences, the same did not occur with the stocks prices in the two periods studied, despite the difference among the prices: both the variation of the subsequent semester and of the two subsequent semesters showed that in the group with the greatest positive variation in payment dividends, the share price also suffered a positive variation.

Table 3 - Variation in share prices (%) based on the variation in dividends paid in the previous semester (%)

Variation of share prices in the subsequent semester		
	Dividends (mean ± standard error)	Share price (mean ± standard error)
Above 75th Percentile	27,7±1,9	13,1±34,4
Below 25th Percentile	-19±1,8	-7,3±30,5
P value	$5x10^{-30}$*	0,66
Variation of share prices in the two subsequent semesters		
	Dividends (mean ± standard error)	Share price (mean ± standard error)
Above 75th Percentile	50±4,1	3,1±27,2
Below 25th Percentile	-28,4±13,2	-38,9±13,5
P value	$5x10^{-28}$*	0,17

* statistical significance

The application of the chi-square test is shown in table 4, where the only statistically significant results occurred only in the evaluation of semiannual periods. Surprisingly, in both cases (average variation of prices of one and two years) the increase (decrease) in the payment of dividends was related to negative (positive) changes in the value of the shares. In order to better clarify, the chi-square test was performed on the entire sample. The results are presented in table 5, where the results disappear in the semiannual periods, suggesting a specific behavior of this sample extract in relation to the total. However, two new statistically significant results appeared: the first, according to the hypothesis, shows a positive change in the value of assets one year after their acquisition in that group that had a positive change in dividends in the previous year, compatible with the “Dogs of Dow ”(CLEMENS, 2012) and with the refutation of the null hypothesis.

The second, which occurred in the group where the shares were valued at their average price variation in the following three years, considering the average dividend variation in the previous two years, was similar to the findings in table 4: the increase (decrease) in the payment of dividends were related to negative (positive) changes in the value of the shares. Thus, it is suggested that the strategy of seeking asset valuation based on its previous payment of dividends, should stick to the period of a previous year of payment of dividends aiming at a horizon limited to one year after the purchase of the share of the respective company. The literature review did not provide any explanation for this fact, but it is suggested that the periods of time amplified in the assessment may carry aspects that are beyond short-term horizons (one year), as mentioned by Wang (2004) and, according to Ang and Bekaert (2007), that dividends are not a good predictor of stock prices.

Table 4 - Dividends versus share value at the ends of the sample **

		Δ+ share price (%)	P value
Annuals:			
Δ D-2_ΔC+1	Δ+ div Δ- div	43,4 44	0,97
Δ D-1_ΔC+1	Δ+ div Δ- div	56 50	0,64
Δ D-1_ΔC+3	Δ+ div Δ- div	54,5 45,5	0,54
Δ D-2_ΔC+3	Δ+ div Δ- div	35,7 63,1	0,11
Δ D-3_ΔC+3	Δ+ div Δ- div	37,5 63,1	0,22
Semester:			
Δ D-1_ΔC+2	Δ+ div Δ- div	28,5 50	0,033*
Δ D-1_ΔC+1	Δ+ div Δ- div	27,9 72,7	< 0,0001*

** above the 75th percentile and below the 25th percentile; # Chi square test; * statistical significance; Δ + share price: positive share price variation; Δ + div: positive change in dividends; Δ- div: negative change in dividends; Δ D-1: variation in dividends in relation to the previous year / semester; ΔC + 1: variation of the share value in relation to the previous year / semester; [1]: percentage of shares with positive change in dividends that had a positive change in value;

Table 5 - Dividends versus share value in all sample **

		Δ+ share price (%)	P value
Annuals:			
Δ D-2_ΔC+1	Δ+ div Δ- div	55,8[1] 51,9	0,7
Δ D-1_ΔC+1	Δ+ div Δ- div	64,7 46,5	0,057*
Δ D-1_ΔC+3	Δ+ div Δ- div	45,2 47,5	0,83
Δ D-2_ΔC+3	Δ+ div Δ- div	42,8 68,2	0,035*
Δ D-3_ΔC+3	Δ+ div Δ- div	60 73,5	0,3
Semester:			
Δ D-1_ΔC+2	Δ+ div Δ- div	63,4 50	0,11
Δ D-1_ΔC+1	Δ+ div Δ- div	55,7 56,1	0,96

[#] Chi square test; * statistical significance; Δ + share price: positive share price variation; Δ + div: positive change in dividends; Δ- div: negative change in dividends; Δ D-1: variation in dividends in relation to the previous year / semester; ΔC + 1: variation of the share value in relation to the previous year / semester; [1]: percentage of shares with positive change in dividends that had a positive change in value.

5 Conclusions

Based on the results above, the following conclusions were reached: first, according to the hypothesis, it shows a positive change in the value of assets one year after their acquisition in that group that had a positive change in dividends in the previous year, compatible with the strategy " Dogs of Dow ". The second, derived from the group where the shares were valued at their average price variation in the following three years considering the average dividend variation in the previous two years, and in the semi-annual valuations, showed that the increase (decrease) in the payment of dividends was related to negative (positive) changes in the value of the shares. Thus, it is suggested that the strategy of seeking asset valuation based on its previous dividend payment should stick to the previous year's dividend payment period, aiming at a horizon limited to one year after the purchase of the respective company's share .

In this study, it was decided to use the dividend payment variation regardless of yield and payout. Within the context of the research hypothesis, the yield already contains the asset price, which was chosen to discard, since the parameter was the dividend paid. The same applies to not using the payout which, in addition to embedding net income, represents the company's dividend policy.

Intra-sectoral analysis shows that the electricity sector is heterogeneous in its payment of dividends, both between companies and within the same company over time. The prospects for future studies point to working within the subdivisions of the electrical system within its

activities (generation, transmission, distribution or mixed), as well as the correlation of the payment of dividends with financial aspects such as cash flow.

References

ANG, A.; BEKAERT, G. Stock Return Predictability: Is It There? *Review of Financial Studies*, v. 20, p. 651–707, 2007.

ANJOS, L. C. M.; MONTE, P. A. O impacto da retenção de lucros no valor das empresas listadas no Ibovespa. *Revista de Informação Contábil*, v. 7, n. 2, p. 39-50, 2013.

BERNARDINO, F. F. M., PEIXOTO, F. M., FERREIRA, R. N. Governança corporativa e valor da firma: um estudo de empresas brasileiras do setor elétrico. *Revista Eletrônica de Ciência Administrativa*, v. 13, n. 2, p. 185-202, 2014.

BRIGHMAN, E. F; GAPENSKI, L. C; EHRHARDT, M. C. **Administração Financeira: teoria e prática**. São Paulo: Atlas, 2001.

BRUGNI, T. V.; RODRIGUES, A.; CRUZ, C. F.; SZUTSER, N. IFRIC 12, ICPC 01 e contabilidade regulatória: influências na formação de tarifas do setor de energia elétrica. *Sociedade, Contabilidade e Gestão*, v. 7, n. 2, p. 104-119, 2012.

BRUGNI, T. V., SARLO NETO, A., BASTIANELLO, R. F.; PARIS, P. K. S. Influência de dividendos sobre a informatividade dos lucros: evidências empíricas na BM&FBOVESPA. *Revista Universo Contábil*, v. 8, n. 3, p. 82-99, 2012.

CLEMENS, M. Dividend Investing: Strategy for Long-Term Outperformance, 2012. Avaiable at: https://poseidon01.ssrn.com/delivery.php?ID=089119105064005123100016109068089124022046039021042055064086118096098075117110100028063033000008109016026093118026096018123088006041062046036014086018125115124122005009028066103086126019004114065109116023090021102003121100121030021018083112087068122&EXT=pdf. Last access on November 5, 2020.

COCHRANE, S.J.; DEFINA, R.H.; MILLS, L.O. International Evidence on the Predictability of Stock Returns, *The Financial Review*, v. 28, n. 2, p. 159- 180, 1993.
CORSO, R. M.; KASSAI, J. R.; LIMA, G. A. F. S. Distribuição de dividendos e de juros sobre o capital próprio versus retorno das ações. *Revista de Educação e Pesquisa em Contabilidade*, v. 6, n. 2, 154-169, 2012.

DEBONDT, W.F.M.; THALER, R. Does the Stock Market Overreact? *Journal of Finance*, v. 40, n. 3, p.793-805, 1985.

ELTON, E. J.; GRUBER, M. J. Marginal Stockholders Tax Rates and the Clientele Effect. *Review of Economics and Statistics*, 68–74, 1970.

FAMA, E.F. Stock Returns, Expected Returns, and Real Activity. *Journal of Finance*, v. 45, n. 4, p. 1089-1108, 1990.

FAMA, E.F.; FRENCH, K.R. Dividend Yields and Expected Stock returns. *Journal of Financial Economics*, v. 22, p. 3-25, 1988b.

FORTI, C. A. B., PEIXOTO, F. M., & ALVES, D. L. Fatores Determinantes do Pagamento de Dividendos no Brasil. *Revista Contabilidade & Finanças* - USP, v. 26, n. 68, 167-180, 2015.

HIRSCHEY, M. The “Dogs of the Dow” Myth. *Financial Review*, v. 35, n. 2, p. 1–16, 2000.

LAKONISHOK, J.; SHLEIFER, A.; VISHNY, R.W. Contrarian Investment, Extrapolation, and Risk, *Journal of Finance*, v. 49, n. 5, p. 1541-1578, 1994.

NISSIM, D.; ZIV, A. Dividend Changes and Future Profitability. *The Journal of Finance*, v. LVI, n. 6, p. 2111-2133, 2001.

O’HIGGINS, M.; DOWNES, J. **Beating the Dow**. HarperBusiness, HarperCollinsPublishers, 2000.

ROBERTSON, D.; WRIGHT, S. Dividends, Total Cash Flow to Shareholders, and Predictive Return Regression. *The Review of Economic Statistics*, v. 88, p. 91-99, 2006.

RODRIGUES, L. C; CORDEIRO-NETO, J. A; VILAMAIOR, A. G; CASTRO, A. C. Estudo das Formas de Distribuição de Dividendos das Organizações pertencentes ao Setor Elétrico Brasileiro. In: 20º Congresso Brasileiro de Contabilidade, 2016.

SILVA, A. Por que empresas do setor elétrico brasileiro concentram o pagamento de dividendos? – Evidências empíricas de 2010 a 2015. *Revista de Administração e Contabilidade, Feira de Santana.* v. 11, p.80-96, 2019.

SILVA, A. O.; DANTAS, J. A. Impacto da Política de Dividendos no Valor de Mercado das Instituições Financeiras no Brasil. *Revista de Gestão, Finanças e Contabilidade*, v. 5, n. 4, p. 43- 63, 2015.

SILVA, A. R; KIRCH, G. Efeito clientela no setor elétrico brasileiro e suas possibilidades de arbitragem. *Revista de Administração da UEG*, v.10, n.3 p. 7-23, 2019.

SILVA, A.; KIRCH, G. Stock split and groupings in the electricity sector and their influence on traded volume, price and yield. *Revista de Administração da Universidade Estadual de Goiás (RAUEG). Anápolis*, v. 11, n. 2, p. 111-129, maio/ago. 2020.

VIANA-JUNIOR, D. B. C.; MARQUES, D. B.; DOMINGOS, S. E. M.; PONTE, V. M. R. A Influência da Política de Dividendos sobre o Valor de Mercado: Evidências em Empresas Brasileiras. *Contabilidade, Gestão e Governança* – Brasília, v. 20, n. 2, p. 175-194, 2017.

VIANA JUNIOR, D. B. C.; PONTE, V. M. R. Política de dividendos e fluxos de caixa: um estudo à luz da Teoria da Sinalização. *Revista Ciências Administrativas*, v. 21, n. 1, p. 211-236, 2015.

WANG, C. Short-Term and Long-Term Market Inefficiencies and Their Implications, 2004. Avaiable at: https://www.semanticscholar.org/paper/Short-Term-and-Long-Term-Market-Inefficiencies-and-Wang/e663d51421b277c1c8658fad86ddab581db2fa33#references. Last accessed on October 26, 2020.