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THE EFFECTS OF ALLOWANCES FOR CORPORATE EQUITY ON DEBT BIAS AND MARKET VALUE FOR BRAZILIAN PUBLICLY TRADED COMPANIES

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Resumo/Abstract

The present research aims to evaluate the effects of Law No. 9,249/95, which deals with the deductibility of allowance for corporate Equity (ACE) on shareholders' Equity, leverage, and the market value of companies. The data came from a panel between 1995 and 2020 of publicly traded companies listed on Brasil, Bolsa, and Balcão (B3), Brazil's official stock exchange. The methods used were the fixed and random effects model. With this, the results pointed to a positive effect of interest on market value. The average impact of ACE deductibility on market value was 0.0385 and 0.0343, fixed and random effects, respectively. The leverage (financial and operational) estimator and Equity were not statistically significant. The findings prove that the Brazilian ACE variant is ineffective in modifying the capital structure and neutralizing debt bias but instead works as a dividend deductibility instrument. In summary, this paper contributes to the academic literature and the current discussion in Brazilian Congress about the tax deduction of ACE for companies, shareholders, and the government.

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Abstract: The present research aims to evaluate the effects of Law No. 9,249/95, which deals with the deductibility of allowance for corporate Equity (ACE) on shareholders' Equity, leverage, and the market value of companies. The data came from a panel between 1995 and 2020 of publicly traded companies listed on Brasil, Bolsa, and Balcão (B3), Brazil's official stock exchange. The methods used were the fixed and random effects model. With this, the results pointed to a positive effect of interest on market value. The average impact of ACE deductibility on market value was 0.0385 and 0.0343, fixed and random effects, respectively. The leverage (financial and operational) estimator and Equity were not statistically significant. The findings prove that the Brazilian ACE variant is ineffective in modifying the capital structure and neutralizing debt bias but instead works as a dividend deductibility instrument. In summary, this paper contributes to the academic literature and the current discussion in Brazilian Congress about the tax deduction of ACE for companies, shareholders, and the government.

Keywords: Allowance for corporate equity; equity capital; leverage; market value.

1 Introduction

In Brazil, Law Nº. 9249/95 was issued to regulate the tax effects of allowances for corporate Equity (ACE) - *Juros sobre capital próprio* - for legal entities opting for taxation by the taxable income. According to Serra (2013), this landmark in the legislation, in addition to encouraging investments in the company, ended up discouraging undercapitalization. Another aspect of this rule was that the dividends paid by companies to their partners became non-taxable income, thus eliminating double taxation.

At this moment, the country is rethinking its legal tax system. The Brazilian National Congress is discussing proposals for Tax Reform and one of its projects: Bill No. 2.337/2021, which deals with Income Tax reform and proposes the end of the deductibility of Interest on Own Capital (Brazilian version for ACE), something very controversial and which has stimulated discussions. Is the question to identify the best solution to remove the deductibility or improve the rules regarding the deductibility of ACE?

Several investigations have addressed ACE, namely: Zani and Ness (2000; 2001), Sirihal and Melo (1999), Futema (2006), Paiva and Lima (2001), Guerreiro and Santos (2006), Libonati, Lagioia and Maciel (2008), Motta (2021), Rigo and Lima (2020) and Dornelas (2021). The most important contributions of each research are presented below.

Zani and Ness (2000; 2001), Sirihal and Melo (1999), and Futema (2006) verified the regulation of allowance for corporate Equity and its impacts on debt. One of the main conclusions of these papers was that posting interest on Equity adds value to the firm but that this is not enough to eliminate the tax benefit generated using debt.

For Paiva and Lima (2001), the dividend policy was influenced by standardization but with low intensity. In turn, Guerreiro and Santos (2006) investigated how companies



behaved concerning the adoption of ACE. Based on a database of three thousand Brazilian companies from different segments, the main finding was that ACE is more common among companies with shares listed on the stock exchange than those not listed. Furthermore, Libonati, Lagioia, and Maciel (2008) found that reducing the tax burden when using the option of ACE payment instead of dividend distribution would be the best option.

Recently, Motta (2021) verified the effects of ACE on corporate income taxation; Rigo and Lima (2020) analyzed the impact of interest on corporate capital, and Dornelas (2021) evaluated ACE and tax planning. Thus, the current national literature moves toward measuring how ACE acts on the reduction of the corporate tax burden.

In this sense, this research is guided by the following question: has the tax deductibility of ACE stimulated the capitalization of companies? This research problem leads to the general objective of the paper, which is to verify the effects of ACE on equity management and leverage in companies listed on the Brasil, Bolsa, and Balcão (B3) between 1995 and 2020.

This study configures itself as innovative in the national literature. It contributes by inaugurating a milestone in a discussion that had been expected for a long time. The initial idea of ACE was to increase the value of Equity and reduce leverage, but this did not happen. Therefore, practically, this work aims to present an innovative view by shedding light not only on the tax aspect, which is widely discussed in legislation and companies but also on the equity perspective. In the theoretical and academic sense, one can observe studies with foundations in dividends and tax aspects after scanning the literature. Thus, in this way, the present article aims to innovate, bringing the element of equity valuation and persistence of profits.

In addition to this introduction, this research is composed of four sections. Section 2 presents the theoretical framework of ACE, specifically a description of the regulations and an overview of the international and national literature on the subject. Section 3 describes the methodology and methodological procedures used in data collection and treatment. In section 4, the results are obtained through data analysis using statistical tools. Finally, in section 5, the final considerations of the research.

2 Theoretical frameworks

2.1 Allowance for Corporate Equity (ACE)

In the first moment, it is essential to work on the two main points of Law no. 9,249/95 that altered the legislation of the corporate income tax (IRPJ) as well as the social contribution on net profit (CSLL). Conceptually, the law refers to a form of partner remuneration that deducts from the CSLL and IRPJ tax base, not exempting the payment of ACE at a rate directly at the source. In 2020, this rate was 15%.

Basically, from the creation of this law, the income obtained by the activities performed by Brazilian companies directly or through subsidiaries that do not have a legal entity abroad can now be taxed in Brazil. Previously, income produced outside the national territory could not be taxed in Brazil. Another meaningful change was the permission that the profits of a company domiciled in another country, but controlled by a Brazilian company, are subject to Brazilian income tax, even if the Brazilian controller does not receive dividends.

According to Gobetti (2018), the portion of the profit distributed through ACE uses the same rate (15%) as financial investments and capital gains. At the same time, there is the exemption of dividends. The practical results, according to the author, are i) if the company does not benefit from the ACE and the exemption of the dividends, the tax rate reaches 34% in the company, plus 15% on the realization of the capital gain; ii) if the profit is distributed, the portion of the ACE will be exempt in the PJ and taxed 15% in the PF. The exceeding portion is taxed at 34%; iii) on presumed profit, the effective taxation will be 15%. With this, the author emphasizes that the taxation model adopted in Brazil does not have any neutrality on company decisions regarding how they will finance their investments, whether by capitalization, loans, or retention of profits.

Article 2 of Bill 2337/2021, the famous 2nd part of the national tax reform, brings a significant change in the thought of ACE, as it regulates the non-allowance of the tax deduction as of January 1, 2022, i.e., its use becomes unfeasible from a tax standpoint. This topic is interesting because, according to jurists, specifically Coimbra (2022), this mechanism has the function of curbing the indebtedness of companies, stimulating their investment, and increasing Equity.

2.2 International Literature

The international discussion of ACE goes through taxation on profits and income. Two central points about tax distortions are: i) double taxation of profits; and ii) stimulus to postpone the realization of capital gains (*lock-in* effect). Thus, countries have no consensus on how to solve these issues. However, nations have been facing them differently; for example, Germany, France, and the United Kingdom began to insert, still in the 1970s, differentiated rates for dividends that integrated the taxation of PJ and PF profits, eliminating, even if partially, the double taxation (Gobetti, 2018).

Hall and Rabushka (1984) proposed a simplified, value-added income tax with a single tax rate (*flax tax*). These authors influenced the tax reforms that started in the 1980s. Then, the American tax system had multiple rates, up to 50%. With the influence of Hall and Rabushka (1984), the American tax system started to have two rates, one of 15% and the other of 28%.

According to Rabushka (2007) and Gobetti (2018), former Soviet bloc countries such as Estonia, Latvia, Lithuania, Kyrgyzstan, Russia, and Eastern European and Asian countries, as well as Iraq, Mongolia, and Kuwait, adopted variants of the *apartment tax* proposal. This taxation structure was a milestone for these countries, and in many, it continues to this day.

For Keen, Kim, and Varsano (2006), this wave of *apartment tax* was a strategy of the new governments, signaling tax reforms and capital structures given the pro-market agenda. Mitchell (2007) and Piketty (2005) emphasize that these reforms had the backdrop of exacerbating tax competition to eliminate taxation on capital. However, in 2010, Latvia, Slovakia, and other countries reintroduced taxes on dividends and social contribution to dividends.

For Gobetti (2018), both the dividend exemption and the *apartment tax* lost traction over time, mainly when dealing with income taxation problems. The new model proposed by Devereaux and Freeman (1991), called *allowance for corporate equity* (ACE), is used in developed countries as an innovation compared to those previously



used. In line with this theoretical and practical trend, Brazil has done something similar, called ACE.

Devereaux and Freeman (1991) proposed a mechanism to adjust the corporate income tax calculation to exempt income from capital. This exemption would be applied to the tax owed by the company, which would be equivalent to the return shareholders would get from investing their capital in some financial asset. In a way, taxation would not interfere with the investor's choice of where to invest their financial resources. The central aspect is to allocate capital between different neutral assets, as well as the business decisions on how to finance their investments through Equity or debt. Traditional taxation makes it more advantageous for the company to go into debt since the interest paid on loan is deducted from the tax calculation. So, by adopting the attractions of the corporate equity allowance (ACE - Brazil), henceforth ACE, this advantage disappears if the interest on the capital is also deducted from the tax. Croatia adopted this form of taxation in 1994, Brazil in 1996, Italy in 1997, Austria in 2000, Belgium in 2006, and Turkey in 2015 (Ozdamar, Tanyeri & Akdeniz, 2021). Some of these countries, such as Brazil and Belgium, currently maintain this form of taxation.

In this context, author Isaac (1997) analyzes ACE and its implications for corporate taxes for the United Kingdom. Specifically, the paper addresses the implicit revenue-neutral tax rate on redistributing the tax burden. In addition, it checks what the effects on both corporations' cash flow and capital gains are. Finally, Isaac found that an expenditure tax would be preferable to the country's current tax approach.

In line with the previous research, Lammersen (2002) analyzes the effects of ACE-based taxation on rates of return and effective tax rates. The author's main conclusion in this research was that investment neutrality is lost if the imputed interest rate deviates from the market interest rate. This can lead to competitive disadvantages for countries engaged in international trade. Another point at issue was that the effects on revenue of the ACE-based rate system had no significant influence across countries.

Current studies, such as that of Ozdamar *et al.* (2021), address the relationships between ACE on stock market prices relative to firms and how they affect corporate decision-making. However, the distinguishing feature of this research is the focus on the investor, emphasizing the anticipated effect of tax regulation (ACE) and the exposed change in firms' capital structure. The database starts by identifying the announcement of ACE adopting companies, based on Bloomberg and Turkish newspapers in 2015. The findings point to cumulative three-day abnormal returns around the ACE announcement to non-financial firms covered by the tax. Furthermore, they suggest that investors differentiate which firms will potentially benefit more from the ACE tax versus those that do not.

All this international research (Ozdamar *et al.* 2021; Lammersen, 2002; Gobetti, 2018; Devereaux & Freeman, 1991) brings something close to what Brazil has already practiced since 1996. The country is now discussing whether to stop adopting this mechanism while European countries are starting to join. Therefore, it is essential to reflect on to what extent Brazil is suitable; what we need is perhaps a new take on ACE and not its exclusion from the legal and accounting system of companies to go back to the initial idea and value SE.



2.3 Brazilian Literature

The research of Sirihal and Melo (1999) emphasized that corporate financing decisions are one of the most important instruments available to corporate shareholders. These decisions make up the capital structure of the enterprise, that is, the proportion of financing used by each of the various sources of resources, grouped into third-party and own capital. The use of debt, through the tax deductibility of interest payments, can represent an increase in value for the shareholders since there will be a tax saving on the total capital remuneration. The tax deductibility is offset by the tax deductibility of expenses levied on the book value of Equity: the monetary adjustment of the balance sheet and the remuneration of allowance for corporate Equity. The research results, considering the years 1995 and 1996, demonstrate that the tax benefit of indebtedness was little affected by Law 9249/1995.

Along the same lines, Zani and Ness Jr (2000, 2001) verified the effects of introducing interest on Equity on the tax advantage of indebtedness. Again, modifications in the equation for determining the firm's value were performed to accommodate the contribution of IOE. The main results show that ACE adds value to the firm but is insufficient to eliminate the tax benefit generated by using debt. Finally, the main finding was that despite reducing the tax burden for companies that adopted this mechanism, this tax advantage did not encourage companies to finance their investment with their capital instead of third-party capital.

Paiva and Lima (2001) empirically approached the influence of taxation and IOC on corporate dividend policy. The deepening of the data came through the behavior of the dividend distribution levels of Brazilian public companies. The authors' research hypothesis was that the dividend tax exemption was an incentive for managers to increase dividend levels and for companies to reimburse their shareholders with ACE since it would open a window of possibility for reducing the tax burden for both shareholders and companies. The results indicated that companies did not increase their *payout* ratio after eliminating taxation on dividends. However, the companies that paid ACE showed an increase in the *payout* and an effective increase in the value of the dividends.

The research by Guerreiro and Santos (2006) investigated the behavior of companies regarding the use of Law 9.249/95, which concerns ACE. As a database, they used 3,000 companies from all sectors in Brazil. Approximately 40% of the companies use this credit alternative for their partners and shareholders. In this research, it was also found that there was a balance between industries, commerce, and service providers, in what involves the adoption of the payment of ACE by companies. By the way, it is worth noting that this practice is more recurrent in companies with shares in the stock exchange than in those that do not. Finally, given the classification according to the origin of capital (national, foreign, and state-owned), the percentage of companies that paid ACE was higher among foreign companies.

The work of Futema (2006) sought to understand the conjuncture of capital structure, dividends and interest on Equity of Brazilian companies in the period from 1995 to 2004. For the author, capital structure and dividends are theming with a high impact in corporate finance studies. However, the issue of conjuncture analysis is something recent in the literature because it involves recognizing that the dividend affects the capital structure and vice-versa, thus generating an endogeneity problem. In summary, as the



main result, Futema (2006) demonstrated that the distribution of profits (dividends and ACE) is lower in Brazil (18%) compared to the United States (46%).

Libonati *et al.* (2008) demonstrated which would be the best form of remuneration for shareholders of companies taxed by the actual profit. Based on a deductive theoretical methodology, they concluded that there is a reduction in the tax burden when the option of paying IOC instead of distributing dividends is used. The two cases above presented these results had individuals as beneficiaries and those who do not incur the additional income tax at the beneficiary source (legal entity) to have an equal comparison. Thus, ACE was the best option for remunerating shareholders in these cases when the intention was to reduce the tax burden.

Ribeiro *et al.* (2020), in turn, analyzed the impacts of choice between dividends and IOC in the most representative companies of the electric sector in the period from 2011 to 2016. Even though these denominations present conceptual similarities before the legislation, both forms of distribution of results have differences regarding the tax regime in which they are inserted. The results showed that the use of ACE and the dividend policy, on average, was higher than R\$ 68 million. Thus, the benefit of combining the distribution of results would be the best way out.

Motta's research (2021) verified the effects of ACE on corporate income taxation. The Methodology started with a broad investigation of the history of the current legislation, the procedures, and requirements for the payment of ACE, including its tax effects. In addition, the researcher delved into extra-fiscal taxation, evaluating whether ACE belongs to the set of extra-fiscal tax rules. The objective was to verify if ACE is some kind of tax incentive. Thus, the research demonstrated the degree of importance of ACE in corporate income taxation and attracting investments.

Seeking to ascertain the existence of tax savings with the use of ACE, considering the real profit companies, given that this is the only tax regime that it fits into, Dornelas (2021) found that the use of ACE to remunerate their partners does bring the benefit of tax deductibility since this item is recorded as financial expenses and becomes part of the real profit. Finally, the researcher emphasizes that actual profit companies are taxed around 34%, but when accounting for ACE, they withhold income tax at source (IRRF) at the rate of 15%; then, the company would generate a net saving of 19%, i.e., the 34% minus the 15%.

Finally, it is worth mentioning that the ACE public policy, implemented in 1994, has been suffering defeats, such as Decree No. 8,426/2015, which restored the rates of the Social Integration Program/Social Security Financing Contribution (PIS/COFINS) on current ACE revenues. This ends up reflecting on the effects of using this instrument for corporate management and already demonstrates a loss in the power ACE has over dividend management. Therefore, society must follow the next steps of this discussion, which promises to heat up, because, without a doubt, it interferes with companies' survival and the national economy.

2.4 Research Hypotheses

In this research, three hypotheses are adopted, namely: H1) ACE deductibility increased firms' Equity; H2) ACE deductibility decreased firms' leverage and H3) ACE deductibility increased firms' market value (MV).

3 Methodology

To perform the analysis proposed in this article, data were collected from the Economática database between 1995 and 2020, considering all the companies listed on the Stock Exchange. Because it is a sequence of companies treated over time, panel data analysis and multiple linear regression were adopted since the dependent variable ACE is continuous. Table 1, below identifies all the variables that make up the temporal model:

Table 1 - Variables used in the study

Variable	The expected sign of the relationship	Acronym	Comment
<i>Dependent Variable</i>			
Allowance for Corporate Equity		ACE	ACE is an indicator that brings the absolute amounts paid in the period
<i>Independent Variables</i>			
Shareholders' Equity	+	SE	Shareholders' Equity is in absolute value
Leverage	-	Lev	Short- and long-term financial indebtedness
Market value	+	MV	Share price at the close of the period multiplied by the number of shares
<i>Control Variables</i>			
Net Revenue		NR	A variable that shows business growth
Dividends		DIV	There is expected to be an increase in payment after Complementary Law 9,249/95.
Total Assets	+	TA	Measuring the size of the company and expecting a positive signal regarding ACE
Time fixed effect		Dum_T	0 before 1996 and 1 after 1996
Capital Stock		CS	In line with SE and receiving more shares, a direct relationship with SE is expected
Profit reserve		RES_L	In line with the PL, the same signal is expected as in the PL



Net Profit		NProf	The existing tax treatment of the financial statements in the period before and after ACE will be shown
Income Before Income Tax		EBT	The existing accounting treatment of the financial statements in the period before and after ACE will be shown
Return on Total Assets		ROA	The calculation is Net Income/Total Assets
Return on Equity		ROE	The estimate is Net Profit / Shareholders' Equity

Source: Own elaboration.

As mentioned earlier, the data in this research refers to Brazilian companies listed on B3, obtained from Economática, the database of publicly traded companies, considering the period 1995-2020. After excluding the negative values for Equity and Net Income, from the initial total of 12,772 observations, 10,624 remained, the last treatment, considering only the companies that have the practice of paying ACE. As the analysis period is long (25 years), much information about the values of the variables is not available, so the constructed panel is unbalanced. Table 1 summarizes this information.

Table 1 - Database selection and composition

Sample Selection	
	Remarks
Initial data (1995-2020)	12.772
Removal of negative values for the Net Equity (PL) and Net Income (LL)	2.148
Total of observations	10.624

Source: Own elaboration.

The objective of the model is to answer the hypotheses listed above. Working with panel data is vital because there are several repeated companies throughout the years, and the result of the variables in one year is directly in those of the following year, which are also impacted by previous years' results.

The linear regression model assumes that the response variable is of continuous type and in the panel below. Every model follows the following logic:

$$Y_{i,t} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon_i \quad (1)$$

Y is the response variable, and X represents each of the n independent variables present in the model. This paper uses a linear regression model, in which only one independent variable is computed. Suppose the coefficient β_n in the above equation is positive and significant. In that case, it indicates that an increase in the X variable in



question works to increase the value of Y. If the coefficient β_n of the above equation is negative and significant, it indicates that an increase in the X variable in question reduces the value of Y.

However, all these comments are valid only in cases where the variable has a significance (p-value) of at most 0.05. Otherwise, the analysis does not confirm the relationships, and theoretically, the independent variable cannot explain the dependent variable (Y) (Hair, 2010). In the specific case of this work, there were three different models, one for each of the hypotheses listed. All analysis variables are ACE, and the Y variables are market value, leverage, and Equity.

The models are based on two strategies: the fixed effect model and the random effect model. The fixed-effect model considers the existence of constancy of the firms over time; that is, there is a correlation over time within each firm. In the case of random effects, this correlation does not exist.

To decide which model is best, the Hausman Test was performed (H0: best model is a random effect). The result indicated which model is more reliable. All also have the coefficient of determination (R^2), which means the percentage of explanation of the dependent variable about the independent variable. This value varies between 0 and 100%, and the higher it is, the lower the effect of chance on the modeling presented.

4. Results

The variables used in the model have their descriptives shown in Table 1. These data have already been *winsorized* and had their scale reduced by applying the natural logarithm to substantial dimension values. The data refer to 25 years, corresponding to the period from 1995 to 2020. In all, 412 companies were evaluated, so the maximum number of available observations is 12772. Since this is a very long period, data loss is expected. The variable with the most information available was total assets with 4,937 mentions, and the one with the least data was dividends with 1,655 (Table 2).

It is essential to point out that when performing transformations on variables, so much data is lost. The logarithm transformation does not exist in negative numbers, for example. The ratio of dividends to sales is an example of this. The division was performed before the *logarithmic transformation* of the dividend variable, thus leaving the ratio variable with slightly more data than the pure one.

Return on Total Assets (ROA) and Return on Equity (ROE) is percentage scale variables that do not transform. The same occurred with the variable ACE, because it has a small value scale.

Thus, the proposed regression model is:

$$SE_{i,t} = \beta_0 + \beta_1 ACE_{i,t} + \beta_2 T_Assets_{i,t} + \varepsilon_i \quad (2)$$

$$Lev_{i,t} = \beta_0 + \beta_1 ACE_{i,t} + \beta_2 T_Assets_{i,t} + \varepsilon_i \quad (3)$$

$$MV_{i,t} = \beta_0 + \beta_1 ACE_{i,t} + \beta_2 T_Assets_{i,t} + \varepsilon_i \quad (4)$$

Where SE, AL, MV are the Equity, leverage, and market value, respectively, ACE is the Interest on Equity of firm i in year t. Equations 2, 3 and 4 refer to hypotheses 1, 2 and 3, respectively.

Table 2 - Descriptive statistics

Variable	Obs	Average	D.P	Min	Max
ACE	2.883	1.053	1.597	0.000	5.034
Revenue_Liq	4.370	5.141e+06	7.678e+06	0.000	2.770e+07
Dividends	1.655	249189	447277	0.000	1.554e+06
Total Assets	4.937	1.280e+07	1.960e+07	30148	6.920e+07
Net_revenue	1.984	5.501e+06	8.137e+06	0.000	2.870e+07
Leverage	4.389	1.796	2.496	-7.646	11.30
Lever_OP	4.344	2.465	2.644	-4.506	10.23
Financ_ShortTerm	4.369	676013	1.064e+06	0.000	3.832e+06
Financ_LongTerm	4.358	2.048e+06	3.501e+06	0.000	1.260e+07
Capital Stock	4.932	2.396e+06	3.550e+06	10623	1.270e+07
Profit Reserv.	4.933	1.083e+06	1.788e+06	0.000	6.254e+06
Net Profit	4.923	546560	862359	0.000	3.018e+06
Shareholder Equity	4.936	4.318e+06	6.666e+06	0.000	2.390e+07
Market Value	4.924	711549	1.117e+06	-466177	3.844e+06
EBT	4.918	5.963	4.644	-9.857	16.01
ROA	4.575	15.99	12.28	-15.43	44.44
ROE	2.883	1.053	1.597	0.000	5.034

Source: Own elaboration.

For application in the model, the NPV and SE variables were weighted by total assets to not alter the relationship between the variables, given the high variability of values.

Two different models were proposed to understand how ACE acts on Equity, leverage, and market value. All variables were *winsorized* to a fraction of 0.05, and firms with negative Equity and net income were excluded from the sample. Table 3 below shows the results for each type of model:

Table 3 - Results (Fixed and Random Effects models)

Variables	(1) Model 1 - SE	(2) Model 2 - Lev	(3) Model 3 - MV
<i>Fixed Effect Model</i>			
ACE	-0.0289	0.0685	0.0385**
<i>Controls</i>			
Net Rec	6.53e-08*	-1.84e-07	-2.57e-08
Dividends	1.78e-07	-4.99e-07	1.60e-07
Gross Rec	-1.30e-07***	1.14e-07	3.37e-08*
Fin ShortTerm	-2.03e-07***	1.08e-07	-3.92e-08
Fin. LongTerm	-1.20e-07***	1.10e-07	-3.18e-08*
Share_Equity.	1.23e-07***	-5.02e-08	2.24e-08
Profit Reservation.	5.84e-08	-2.73e-08	-1.95e-08
Net Profit	5.30e-08	2.89e-07	6.92e-09
EBIT	-1.43e-08	4.53e-07	3.22e-08
ROA	0.0485***	-0.00622	0.0364***
Constant.	5.905***	1.427***	0.471***
Hausman test	11.23	5.23	18.15***
Observations	646	645	628
<i>Random Effect Model</i>			
ACE	-0.0250	0.0220	0.0343**
<i>Controls</i>			
Net Rec	5.87e-08	-1.52e-07*	-1.33e-08
Dividends	1.53e-07	-3.27e-07	1.60e-07
Gross Rec	-1.24e-07***	1.01e-07	2.20e-08
Fin. ShortTerm	-1.98e-07***	2.06e-07	-4.64e-08
Fin. LongTerm	-1.11e-07***	5.99e-08	-3.49e-08**
Share_Equity	1.37e-07***	-6.44e-08	1.35e-08
Profit Res.	7.02e-08*	-6.84e-08	-3.40e-08
NetInc.	4.71e-08	1.50e-07	-3.63e-09
EBT	-5.39e-08	2.82e-07	6.30e-09
ROA	0.0597***	0.0537*	0.0476***
Constant.	5.550***	1.371***	0.637***
Observations	646	645	628

Source: Own elaboration. *10% significance; **5% significance; ***1% significance.

This model disregards the fact that firms provide repeated data over the years. Thus, it is natural to lose observations during the estimation process. The reason for using so little data is simple: for a company to appear in the regression, all its data must be complete, i.e., the more significant the model, the harder this is to happen.

According to Table 3, hypothesis 3 was confirmed since the coefficients show statistical significance.

For model 1, the Hausman test pointed out that between the fixed and random effects models, the random effects model would be the most appropriate due to the nature of the database, while for 2 and 3, it would be the former.

These tests demonstrated, among the choice of regression models, which among them would have the most suitable estimator. However, in this research, the statistical significance of the estimator only pointed to model 3. In practical terms, the deductibility of ACE positively influences MV. The magnitude of this effect was 0.0385; that is, a 1% increase in IOC increases the MV, on average, by 3.85%.



5. Analysis of the results

The main result of this research is presented in Table 3. The influence that the ACE exerts on the SE, the Lev, and the MV is significant to point out the decision-making of the business managers. With this, it was possible to see that the ACE positively impacts the market value of the companies in Brazil. The average effect was 0.0385; each 1% increase in ACE raises the MV by 3.85%. This is a significant result because, in addition to innovating the literature, recent research, such as Futema (2006), Libonati *et al.* (2008), Ribeiro *et al.* (2020), and Motta (2021), have not investigated the impacts of ACE on MV, the result brings an extra motivation by considering the positive effects on the companies' MV results.

Similarly, Zanon, Araujo, and Nunes (2017) concluded that there is no relationship between the company's dividend policy and the MV. On the other hand, the work of Miller and Modigliani (1961) inaugurates a theoretical and empirical current on dividend policy (ACE) and MV. For the authors, the dividend policy is practically irrelevant to market value. When an investor wishes to receive the amounts that were not distributed, the immediate option is to sell the portion of his equity capital formed by the appreciation of the shares. But when the company distributes a higher volume of dividends, the investor can buy his shares. Thus, in the view of these authors, the corporate dividend policy cannot affect the value of the shares. Furthermore, the theory highlighted by Miller and Modigliani (1961) argues that market prices in the absence of taxes, agency costs, and asymmetric information are not affected by how the company is financed.

Thus, it does not matter whether the company's capital comes from the issuance of shares or debt. According to Assaf Neto (2014), this current proposes that the company's wealth is the function of its economic potential to generate profits (decisions to invest in assets) and not that the results are divided between cash dividends and retained earnings. Silva and Dantas (2015) and Rosa, Araújo, and Rogers (2021) found a negative relationship between dividend policy and market value.

The results presented in this paper and at this time of discussion on the topic throughout Brazil may be closer to the initial theories on dividend policy. This brings us back to Lintner (1956) and Gordon (1959), both more conservative, who suggests that "better to have a bird in the hand than flying". This was the assumption behind the creation of Law 9249/95, and it is certainly not what is being observed daily, hence the discussion of change.

Table 4 - Results x Hypotheses

<i>Hypotheses</i>	<i>Estimator</i>		
	<i>Expected sign of the coefficient</i>	<i>Fixed Effects</i>	<i>Random Effects</i>
<i>H1: ACE deductibility increased corporate Equity</i>	<i>Positive</i>	<i>Not significant</i>	<i>Not significant</i>

H2: ACE deductibility decreased the leverage of companies	Negative	Not significant	Not significant
H3: ACE deductibility increased market value of companies	Positive	Positive	Positive

Source: Elaborated by the author

The ACE is supposed to have several attractive neutrality properties : (1) ACE neutralizes debt bias. There are broadly two ways to achieve this neutrality: (i) by denying interest deductibility; or (ii) by granting an ACE. (2) An ACE renders the CIT neutral concerning marginal investment decisions. By allowing a deduction for both interest and the average rate of return on Equity, the ACE charges no tax on projects with a return that matches the cost of capital. (3) ACE offsets investment distortions induced by differences between economic depreciation and depreciation for tax purposes. Despite these attractive neutrality properties, an ACE system is not widely adopted worldwide, most likely because of the attendant revenue loss.

6. Conclusion

This paper has reviewed ACE tax systems in practice and has studied, in particular, the Brazilian ACE variant, which has been applied since 1996. While the theoretical advantages of ACE taxes have been well known for a long time, there has been relatively little work on the practical effects of ACE reforms. The trim work generally did not find powerful results, but neither did it detect any significant problems caused by the tax deduction of ACE.

Implementing a legal provision in the income tax code that provides for ACE triggers several legal drafting issues for countries that want to introduce the system. The most important is the definition of the ACE - base. From the comparative overview, two alternatives emerge. The first option is spelling out the net equity base, identifying all necessary adjustments and pro-rated additions and subtractions over the tax period. Alternatively, the Israeli approach could be followed in which an ACE is deducted from taxable income on the difference between the Equity and the fixed assets and included in taxable income on the difference between the fixed assets and the Equity. On the other hand, the Brazilian approach is *sui generis* and can not be called a full ACE, at maximum, a partial one.

The relevance of allowance for corporate Equity (ACE) is a subject that continues to permeate the academic and empirical environment. Considering the importance of this theme, this research sought to contribute to the literature by addressing this dividend policy of companies listed in Brasil, Bolsa, Balcão (B3) from 1995 to 2020. The accounting data of the companies were extracted from Economática (2022).

Although few Brazilian models serve as an example to the world, it is precisely this one that has been considered to be removed from our legal system as soon as other countries begin to adapt it to their tangled tax legislation. Thus, this study aimed to verify the effects of ACE on Equity, leverage, and market value of companies listed on B3 between 1995 and 2020. It was found that ACE has a positive and significant impact on



the market value of companies - a result also proven by Paiva and Lima (2001), Ribeiro *et al.* (2020), and Dornelas (2021). However, the effects on Equity and leverage did not show statistical significance; therefore, it is impossible to infer from this result. Finally, confirming research hypothesis 3, there was a positive and significant effect of ACE on market value.

It can be concluded that there is a positive relationship between the market value of companies and the dividend distribution policy. This means, in practice, that the way this policy is built within the company, on average, increases the market value. In other words, the way companies distribute dividends, according to the profit calculated in the period, depreciates their shares traded on B3 and their market value. This result is significant in explaining the relationship in Brazil with the tax burden and the valuation of companies; future research could explore this topic since there are some contradictions in the *code law* system, and Brazil lives about being a strong and valued company financially and commercially.

Among the limitations found in this research is the scarcity of empirical work on this theme, making it difficult to make possible comparisons with the national literature. However, the lack of existing literature sets a precedent for this research to become a benchmark for future work because the subject of ACE presents high relevance in investment decisions and the market value of companies.

This paper found that the Brazilian ACE variant is ineffective in modifying the capital structure but works as a dividend deductibility instrument. This created incentives to raise external funds to be immediately repaid as dividends. So in this sense, different approaches should be considered to face this issue, improve the Brazilian ACE variant that would be preferred, or deny interest tax deductibility.

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