

PAYOUT POLICY, OWNERSHIP STRUCTURE, TAXATION, AND CORPORATE VALUE: EVIDENCE FROM BRAZIL

ABSTRACT: According to the Brazilian tax code, the nature of the shareholder leads to the incidence of different marginal tax rates on cash earnings payouts (dividends and Interest on Equity – IOE). This fact, combined with the pervasive ownership concentration characteristic of the Brazilian capital market, influences financial decision-making and gives rise to potential conflicts of interest between minority and majority shareholders. This paper uses panel data Probit and Tobit estimations to investigate the relationship between the ownership structure and cash earnings payouts of a sample of 404 Brazilian listed firms in the period 1997-2008. One major contribution of this study is the analysis of the payout of IOE from the standpoint of the shareholders instead of the usual firm-based perspective. Empirical results suggest that (a) the ownership structure influences both the propensity and the amount paid out as IOE; (b) the presence of institutional investors significantly increases cash payouts in the form of IOE *vis-à-vis* cash dividends; (c) deviations from the “one-share-one-vote rule” are positively related to IOE payouts; (d) larger, more profitable firms with better governance practices and more growth opportunities tend to payout more cash in the form of IOE, a practice that increases the wealth of the shareholders.

KEYWORDS: Payout Policy, Ownership Structure, Taxation, Corporate Governance, Interest on Equity.

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1. INTRODUCTION

The relationship between ownership structure and the distribution of earnings is relatively new in academic circles. The first studies on the subject suggested that the payment of dividends reduces the agency problem between shareholders and managers (Easterbrook, 1984; Jensen, 1986), but only recently has it been noted that the distribution of earnings also mitigates the agency problem between majority and minority shareholders (La Porta *et al.*, 2000; Faccio *et al.*, 2001; Truong and Heaney, 2007). To the extent that a greater share of the profits is distributed, there would be a double advantage for shareholders: i) managers would take greater care when selecting the firm's investment projects, so reducing the risk of overinvestment, ii) there would be a reduction in monitoring costs.

An important aspect of studies on this topic concerns the influence of the legal system on the protection of investors (La Porta *et al.*, 1998) and on decisions made by firms, particularly regarding the distribution of dividends (La Porta *et al.*, 2000). In systems based on French civil law (French civil law), in which Brazil is included, the average ownership concentration is higher, which is characterized as a kind of shareholder defense given the low level of investor protection (La Porta *et al.*, 1998). This fact gives rise to an additional agency problem: the controlling shareholders can engage in activities that result in personal gain, through expropriation of other shareholders. These activities may be and often are lawful. In this context, the ownership structure, with its peculiarities regarding the nature of the shareholders and the proportions of the voting and total capital may result in additional costs to shareholders, measured by the risk of expropriation. This problem has become known in the literature by the term tunneling (Johnson *et al.*, 2000), and characterizes a situation in which controllers engage in activities, lawful or otherwise, in order to extract wealth for themselves.

Empirically, there is evidence that dividend payments are higher on average in countries with greater legal protection for minority shareholders, supporting the hypothesis that these shareholders use their increased powers to extract larger amounts of corporate dividends (outcome hypothesis of La Porta *et al.*, 2000). Evidence supporting the outcome hypothesis has also been found in a recent study by Brockman and Unlu (2009). In opposition to this idea, Mitton (2004) argues that it is precisely in countries where there is no effective

corporate governance system that people should realize the risk of expropriation and give more value to the dividends, which would corroborate the substitute hypothesis (La Porta *et al.*, 2000). However, evidence suggests the outcome hypothesis best explains the relationship between corporate governance and the distribution of dividends in firms.

One of the regulatory tools used to mitigate the risk of expropriation is the imposition of mandatory minimum dividends (La Porta *et al.*, 2000). A direct reflection of imposing a mandatory dividend is the reduction in the free cash flow within the company, making it difficult for controllers to obtain private benefits through tunneling activities. On the other hand, the obligation to pay dividends increases the need for external financing, putting at risk the implementation of projects that may be profitable for the company (Myers and Majluf, 1984). In Brazil, where both the tax burden and the cost of capital are comparatively high, internally generated profits assume even greater importance, putting into question the effectiveness of the mandatory distribution of dividends. In this sense, Martins (2010) found evidence that firms with better investment opportunities more often make use of legal subterfuge to reduce the mandatory minimum dividends.

In addition to the above-mentioned peculiarities involving the practice of benefit distribution, Brazilian legislation, with the enactment of the Law 9249/1995 introduced the concept of Interest on Equity (hereafter IOE). Article 9, Paragraph 7, of this law allowed companies to charge the interest paid to the remuneration of equity against the value of the dividends referred to in Article 202 of the Law 6404/76, known as the “Corporations Law”. With obvious tax advantages, the distribution of dividends in Brazil now has a new, apparently effective, instrument, within a business environment of high taxes and lack of legal options for implementing appropriate tax planning.

Despite the notable advantages of IOE in the distribution of earnings, demonstrated with numerical exemplifications in this study, the percentage of firms that distribute their income in that form is still relatively low. These companies may be, and often are, destroying value for their shareholders. Of the total sample of 586 eligible assets, the average distribution of dividends in the form of interest on capital during the year ranged from 6% (1997) 55% (2008). It was only after 2005 that the distribution of IOE achieved representativeness, and yet approximately 45% of assets eligible for distribution of earnings through IOE distribute profits through exclusively through dividends.

Several possible explanations for the limited use of IOE payments in Brazil can be found within arguments in the literature: i) habit formation of firms and investors (Carvalho, 2003); ii) lack of a somewhat more detailed regulations on the subject (Costa Jr. *et al.*, 2004;

Silva *et al.*, 2006), iii) ignorance on the part of certain public companies in the computation of the amount of interest on capital and the imputation of the IOE (Costa Jr. *et al.*, 2004), iv) risk of transitory legislation (Carvalho, 2003), v) lack of standardization in accounting treatment and disclosure of IOE (Silva *et al.*, 2006), vi) characteristics inherent exclusively to the controller of companies (Rangel *et al.*, 2007), vii) lack of academic research and technical publications (Smith *et al.*, 2006).

In this study, ownership structure is investigated as a possible determinant of the distribution of IOE in Brazil, consonant with the explanations based on the potentially conflicting interests of the controllers (Rangel *et al.*, 2007). Through numerical exemplifications, it is clear that the advantages of the IOE may or may not occur for corporate investors; while, for individual shareholders and associative investment entities, the optimal distribution is 100% of their cash dividends in the form of IOE, as long as it does not, of course, pass the limit imposed by law. Since what is optimum, from the standpoint of tax, depends on the beneficiary's legal nature, the decisions regarding the distribution of dividends *vis-à-vis* IOE should be analyzed considering the specific nature of the controller/s. At this point, this research represents a step towards a better understanding of why many companies that recurrently distribute cash dividends to shareholders are not opting for IOE in Brazil. It is shown that, when the controller has no monetary incentive to distribute by IOE, the likelihood of value-destroying policies increases, implying undesirable consequences for the minority shareholders of these companies.

1.1. Research Question and Objectives

Given these theoretical aspects, the research problem in this paper is defined thus: Does the ownership structure in Brazil, taking into account the tax aspects peculiar to the nature of the controlling shareholder, affect the distribution of IOE *vis-à-vis* dividends in publicly traded companies?

To answer this question, the following general objective was defined: to theoretically and empirically analyze the distribution of dividends for the purpose of relating this strategic decision to the ownership structure and the incentives created by Brazilian corporate and tax law. Specifically, it aims to: a) to synthesize how the Brazilian tax legislation, with regard to IOE, differentiates the net benefit of shareholders according to their legal nature, b) analyze the influence of ownership structure on the distribution of IOE in two distinct respects: i) propensity to distribute; ii) the total amount distributed.

1.2. Background and Originality

The theme of this study is important because it is a central issue of corporate

governance in the Brazilian capital market. The thesis of this study is that many firms may not be enjoying the tax benefits of IOE precisely because the tax law discourages their controllers from using it.

This study innovates and deepens the analysis of the research problem in some important points. First, we discuss the distribution of IOE from the perspective of the beneficiaries (shareholders), rather than payers (investees) as is commonly seen. Secondly, as a reflection of potential measurement problems, a variable was created that measures the ratio of the amount distributed and the maximum allowed by law (IOE_IOE*), which allows more assertive measurement of the size of the tax benefit obtained by each firm by IOE. Finally, several sensitivity analyzes are performed that enable better and more reliable assessment of the results obtained.

1.3. Contributions and Limitations

It is hoped that this research will contribute to the study of corporate governance from various perspectives. In theory field, this research allows a better understanding of the influence of ownership structure on the decisions regarding IOE distribution by companies, which directly affect both the tax levied by the government and shareholder wealth. In practical terms, this study suggests a policy of distributing cash dividends in order that companies align the payment of dividends to the maximization of the value of companies. Finally, the end product of this research can also serve as input for regulators, who may add new elements when assessing the impacts of legislation on shareholder wealth and the potential value of firms. In this case, the public authority can question, debate and perhaps even reassess laws and regulations, in order to foster the development of Brazilian capital markets.

2. THEORETICAL ASPECTS

2.1. Ownership Concentration

Brazil, like most countries whose legal system is descended from French civil law, has concentration as a fundamental characteristic of the structure of property ownership (La Porta *et al.*, 2000). In comparative terms, the market is closer to the markets of Japan and Continental Europe, and less to the markets of USA and the UK (Canellas and Leal, 2009). Despite this, ownership concentration has been changing over time. In the last decade, the country has faced a wave of corporate restructurings, caused by privatization and the entry of new partners in private sector companies, notably foreign investors and institutional investors (Smith, 2004).

A major change in corporate law in the Brazilian corporate environment occurred with the entry into force of Law 10.303/2001, also known as the new Corporate Law. Until then, legislation allowed companies to issue up to two thirds of the total capital in the form of shares without voting rights (preferred shares). Ultimately, a company might exercise majority control with only 16.67% of total capital, which gave rise to misaligned management practices in terms of risk and return of capital of the company. With the introduction of the new Corporate Law, the proportion of common and preferred shares fell from two thirds to 50%, but only for new public companies.¹ The study by Canellas and Leal (2009) suggests that firms that went public after 2001 present greater dispersion in the controlling structure.

In Brazil, as a consequence of ownership concentration, the very concept of corporate governance takes on a peculiar connotation. Two of the modern concepts of corporate governance are presented by the Brazilian Securities Commission (CVM) and the Brazilian Institute of Corporate Governance (IBGC), which ended up creating the codes of corporate governance practices in Brazil. The concept adopted by the CVM, corporate governance is the set of practices that aims to optimize the performance of a company by protecting the interest of all the parties, such as employees, creditors and investors, thereby facilitating access to capital (CVM, 2002). By contrast, according to the IBGC, corporate governance is the system by which companies are monitored, encompassing the relationship between shareholders, board of directors, directors, independent auditors and the supervisory board (IBGC, 2009).

2.2. Interest on Equity

With the extinction of automatic monetary correction, as from January 1, 1996, Law 9249/1995, which introduced the concept of IOE,² came into effect. This legislation, which in Article 9, Paragraph 7, allowed companies to impute interest paid as remuneration of equity to the value of the mandatory dividends specified in Article 202 of Law 6404/1976, also known as the “Corporations Law”. As from the following year, 1997, the total amount of interest paid as remuneration of equity has to be limited to a maximum of twice the computed earnings before the deduction of interest, or accumulated profits and profit reserves. This

¹ The results of this study suggest that deviations between the voting rights and total cash flow rights have reduced slightly. Between 1997 and 2008, the ratio of voting stocks to total outstanding stocks was 1.51, while between 2004 and 2008 it was 1.47. This effect can be attributed largely to Law 10303/2001, which altered the proportion of common stock to preferred stock from two thirds to 50% for newly public companies.

² Although this law does not explicitly refer to the term “Interest on Equity”, the document shows that interest refers to the return on capital to shareholders. The term as described was first used by lawmakers in Law 9430/1996, Article 78, which rectified the payout limits of companies.

change was in accordance with the provisions of Article 79 of Law 9430/1996.

In short, the institution of IOE represented a tax incentive for capital, parallel to the previously existing tax benefit of the debt. This, incidentally, is widely used in other parts of the world, since the IOE mechanism, even with the effort expended in the search for similar legislation, seems to be exclusive to Brazil, which makes the internal environment of dividend policy even more complex and peculiar.

Regarding the legal interpretation, Neves (2007) argues that the IOE, despite receiving the name “interest” are more similar to dividends than to interest itself. The CVM itself, in its Resolution 207/96, states that, in the concept of profit in the corporate law, the distribution of return on equity constitutes distribution of income and not expenditure. Moreover, the regulatory organ affirms that if such interest is not treated as distribution of income, the comparability of the results of public companies will be affected and there may be repercussions in all holdings and allocations calculated based on corporate profit.

2.3. Tax Differences according to the Legal Nature of the Beneficiary

When the recipient of the IOE is an individual, the tax is final and occurs on the date of the claim, subject to the basic rate of 15% (Law 9249/1995, Article 9). In this case, the firm’s tax gain is greater than the increase of income tax that the beneficiary will pay – therefore it is advantageous from the standpoint of taxation that the company pays its dividends in the form of IOE, and not as regular dividends. This occurs regardless of whether the paying company (investee) pays income tax at the 15% or 25% marginal rates (Brito, 1999).

An interesting point is that although the distribution of IOE provides an increase in wealth for the individual shareholder in any situation (Brito, 1999), most (76.67%) of executives questioned in the study by Décourt (2009) believes that the best method of distributing profits to individual shareholders is through dividends. Only a minority (21.67%) of survey respondents believe that the best way to distribute profits to individuals is by IOE.

In the case of the recipient being a corporation, the cost of receiving IOE increases significantly. According Higushi *et al.* (2011), companies taxed on taxable income must pay PIS/PASEP (Program for Social Integration) and COFINS (Contribution to Social Security Financing) accruing 9.25% on the income received as interest on capital, since these payments are not part of the financial income taxed at the zero rate provisions in Decree 5442/2005. This is even more serious in business groups with different vertical levels: an increase in the tax burden of 9.25% can occur at each step of the chain of corporate ownership (Higushi *et*

al., 2011). For companies taxed on deemed income, besides paying PIS and COFINS of 3.65%, the interest received enters the computation basis for tax and social contributions under extraordinary income.

From Article 1 of Decree 5442 of May 9, 2005 the additional encumbrance levied on receipts of IOE for corporate shareholders is evident:

Article 1 - They are reduced to zero the rates of the PIS/PASEP and Contribution to Social Security Financing - COFINS on financial income, including that resulting from operations for hedge purposes, earned by corporations subject to the non-cumulative incidence of these contributions.

Single Paragraph. The provisions set forth:

I - do not apply to interest on capital.

Decree 5442/2005.

For Brito (1999), when the beneficiary is a corporation, the payment of IOE is the only way to reduce the tax burden in some cases. Briefly, the author identifies that the distribution of IOE exempts the beneficiary when it is a corporation with the following characteristics: i) tax losses and a negative basis for calculating CSLL (Contribution on Net Profits, yet another compulsory social contribution), in any situation, ii) firms taxed on deemed income – analyzing, however, the impact of additional income tax, iii) firms taxed on taxable income and a positive basis for calculating CSLL – analyzing the incidence or otherwise of additional income tax. However, upon receipt of IOE the respective income tax is withheld and it may be compensated against the company's tax return within the same tax year, which is not always the case (Higushi *et al.*, 2011). Thus, if the beneficiary company cannot deduct the amount withheld on receipt of IOE from its due taxes, the tax burden increases significantly.

As a result, when the controller (or controlling group) is a corporation, there is a tax incentive for the controlled company (investee) not to payout earnings (or pay less than the limit allowed by the Brazilian legislation) in the form of IOE, but rather in the form of dividends. Moreover, the greater the number of corporations in the vertical controlling structure, the greater the potential burden with additional rates of PIS and COFINS, which translate into an even greater disincentive for such companies to pay cash earnings by IOE. This factor is highly relevant in the Brazilian case, since about 77% of publicly traded companies have a pyramid control structure (Bortolon and Leal, 2010).

Finally, we must consider a third group of beneficiaries: according to Law 9532/1997, Articles 28 and 33, when the shareholder that receives the IOE is constituted in the form of Investment Funds, Investment Clubs, Portfolios and any other form of association or collective investment, the income tax rate is zero. This means that, for this class of beneficiary, there is no difference in fiscal terms between receiving earnings in the form of

dividends (which are exempt for all shareholders) or IOE, although the latter reduces overall taxation at the company level. As a result, there is a monetary incentive that leads associative investment entities to prefer to receive cash dividends in the form of IOE, since they will receive the same net value and have an asset with higher market value in the portfolio.

One question that arises with respect to the guidelines for designating companies as “associative entities” for investment is the inclusion or otherwise of Complementary Pension Entities (CPEs), either open or closed, as defined by Complementary Law 109.³ In Articles 28 and 33 of Law 9532/1997, these institutions are explicitly listed among the set of investment entities that benefit from tax exemption, although they constitute a legal figure of a collective or associative nature. Despite the possible interpretative questions in Law 9532/97, the enactment of Law 11053/2004 removed any suspicion on the part of those institutions and ratified the fiscally privileged nature of the Complementary Pension Entities:

Article 5: From January 1, 2005, they shall be exempt from retention at source and separate payment of income tax on income and earning arising from the investments of resources of provisions, technical reserves and pension benefit plans of supplementary pension entities, insurance companies and FAPL, as well as life insurance coverage with survival clauses.

Single Paragraph: The provisions of this caption of this article apply to administrative funds constituted as closed supplementary pension funds and reserves, technical reserves and funds of the health plans mentioned in article.76 of Complementary Law 109 of May 29, 2001. (Included by Law 11196, of 21/11/2005).

Law 11053/2004.

This regulatory issue is also addressed in the work of Rangel and Silva (2007). The authors conducted a case study with the company Tractebel, which has Closed Pension Fund Entities (CPFES) present in the controlling block, and suggested that the distribution of profits of the company should favor distribution by IOE. The motivation being the tax exemption applied to interest on IOE for CPFES, stipulated by Article 5 of Law 11053/2004. In a numerical analysis, using estimates of cash flow and cost of shareholder equity under the CAPM, the authors found that the share value with the distribution of earnings through IOE instead of dividends would be 3.49% higher for an individual beneficiary, and 8.28% higher in the case of a CPFES beneficiary.

To elucidate the tax differences between these different shareholders, a numerical summary is shown in Table 1. This demonstrates that distributing profits by IOE provides

³ Briefly, according to the Complementary Law 109/2001, the Closed Pension Fund Entities (CPFES) are those accessible only to employees of a company or group of companies, and to public servants, whatever the level of government. These entities are organized in the form of a non-profit foundation or civil organization. The Open Pension Fund Entities (OPFE) are pension plans providing benefits conceded in the form of a single or continued payment that is available to any individual. They are constituted solely in the form of corporations.

overall tax savings of around 19% for individuals. This amount is precisely the sum of the corporate tax and social contribution rates on net profits (approximately 34% for companies taxed on taxable income) that is no longer collected, less the corporate income tax withheld at source (15%), which is the burden levied on the individual beneficiary. This tax benefit can be seen to be proportional to the amount disbursed as IOE, so for higher payouts, the tax savings for the company will be even greater.

Table 1: Summary of tax differences in the receipt of IOE

Legal nature of the shareholder	Individual	Corporation not subject to additional IT	Corporation subject to additional IT	Investment funds and pension funds
A) Rates levied on IOE revenues				
Income tax (IT) withheld at source (1)	15% (definitive)	15% (compensable)		0%
CSLL (2)	-	9%		-
Additional income tax (revenues over R\$240,000/yr) (3)	-	0%	10%	-
PIS / COFINS (4)	-	9.25%		-
B) Overall tax savings				
Tax benefit at the firm level	34.00%	34.00%	34.00%	34.00%
Taxation at the beneficiary level (1+2+3+4)	15.00%	33.25%	43.25%	0.00%
Overall tax savings with the use of IOE	19.00%	0.75%	-9.25%	34.00%

Note: The above simulation uses tax rates prevailing in Brazil from 1996 to 2012. Companies with gross annual revenues over R\$240,000 pay, in addition to income tax of 15% withheld at source and 9% Social Contribution on Net Profit (CSLL), 10% additional corporate income tax, totaling approximately 34% of taxes on the income before taxes. The rate of payment of IOE reflects the legislation relevant to each type of beneficiary, according to their specific regimen. Corporations receiving IOE can offset the income tax withheld in the receipt of IOE with the tax due in the current year, and this simulation hypothesizes that 100% of this tax can be deducted from the amount actually due on the annual tax returns. The analysis of global tax savings with the distribution of IOE takes into account the total taxes paid by the investor and investee. Therefore, the differential in terms of creation (destruction) of wealth for each type of shareholder is in the positive (negative) tax saving from the standpoint of both the company (investee) and beneficiaries (shareholders). In percentage terms, the overall tax savings with the distribution of IOE is obtained by dividing the absolute value of the overall tax savings by whatever would be paid in overall taxes in the event all the profits were distributed as dividends.

Source: Elaborated by the author.

Unlike the increase in shareholder wealth of individuals in any situation, in the case of corporate shareholders the overall tax benefit depends on the incidence or otherwise of additional income tax on the investor. As summarized in Table 1, in the case of corporate shareholders not subject to additional taxes (revenues up to \$ 240,000 per year), there is a small tax saving in the order of 0.75%. However, for high earning corporate shareholders, subject to the additional 10% income tax rate, the tax benefit at the investor level (34%) is offset by the tax in an equivalent amount at the level of the beneficiary (34%), not counting the incidence PIS and COFINS. In this case, the tax saving is negative at the exact percentage of the incidence of these social contributions (9.25%). It should be noted that these conclusions assume that the company is taxed on taxable income and can offset the 15% income tax withheld at the source in its annual tax returns.

The results of the simulations with corporate beneficiaries were similar to those found

by Libonati *et al.* (2008), even though the latter do not consider the impact of additional PIS and COFINS on the financial income derived from IOE (Decree 5442/2005). This conclusion is also reached by Brito (1999), in which there is only tax savings for the payer of the IOE, in the case of corporate beneficiaries, in two situations: i) when they make a fiscal loss and a negative base for calculating the social contribution, ii) when the payer of the earnings is subject to additional tax and the beneficiary is not subject to additional income tax. As a result, the overall net benefit for corporate investors should be analyzed case by case.

If the beneficiary shareholder is an institutional investor (associative investment entity), the overall net benefit is evident. Exemption from income tax withheld at source allows the full tax benefit at the level of the investee (34%) to be captured by these beneficiaries. Thus, for these shareholders, the tax savings generated by the distribution of profits through IOE rather than dividends is around 34%, as shown in Table 1. Among all the legal forms of beneficiaries, the associative entities are those that benefit the most from distribution by IOE.

3. METHODOLOGICAL ASPECTS

3.1. Data Collection and Definition of the Sample

The sample consists of companies whose shares were listed on the *Bolsa de Valores de Sao Paulo* (BM&F Bovespa) in the period 1997-2008. The data sources are the database *Econômica*®, which provides financial information, and the INFOinvest® system, which gathers information on the ownership structure of the listed companies. The advantage of the latter in relation to direct access to the database of the CVM is that it groups and lists information to the level of the individual shareholder level, making it easier to obtain data on more vertical structures.

This study's final sample consists of 404 companies, with a total of 586 traded shares, both ordinary and preferred. Where companies had more than one class of preferred share, the least liquid class was eliminated. Companies that did not distribute cash dividends, which may be adopting this practice as a policy in order to maximize shareholder wealth,⁴ were also eliminated. As the aim of the study was to understand why many companies that distribute cash dividends do not do so in the form of IOE, hence companies that did not pay dividends or IOE were excluded from the sample.

⁴ According to Procianny (2006), the optimal dividend policy of firms may be reinvestment of all profits generated by their activity, especially in environments characterized by financial constraints, such as Brazil.

The industry distribution of the companies was in accordance with the classification of economic activity proposed by the *Economática* database except for the industry “others”, which due to large size, received a specific treatment. After analyzing the levels I and II of the NAICS classification, also available in the *Economática* database, the industry “others” was reduced from the 133 companies in the original sample to just 54 companies. The final details of the industry distribution of the sample is shown in Table 2.

Table 2 also shows the means for the dependent variables and the ownership structure. All non-dummy variables in this study were Winsorized at a level of 2.5%, in order to limit the undesired influence of outliers. The mean of the variable IOE_BIN, which represents the payment or otherwise of IOE, is highest in the following industries: Mining (0.63); Industrial Machinery (0.39); and Electrical Power (0.36). The variable IOE_IOE*, which measures the ratio between the amount distributed and the maximum allowed by law, is higher in the following industries: Mining (0.31); Finance and Insurance (0.22); and Steel & Metals (0.22). The industries with greatest ownership concentration maintained by the controller(s), VOTING_SHARES, are: Agriculture and Fishing (77.2%); Manufacturing (75.8%); and Electrical Power (70.3%). Finally, the largest deviations between the voting capital and total capital (CONTROL_TOTALCAP) are found in companies in the Telecommunications (1.92), Pulp and Paper (1.81) and Oil and Gas (1.77) industries.

Table 2: Composition by industry, means of dependent variables and ownership structure

INDUSTRY (n=21)	NUMBER OF OBSERVATIONS				DEPENDENT VARIABLES					OWNERSHIP STRUCTURE							
	ASSETS	%	COMPANIES	%	IOE BIN	IOE TA	IOE PAYOUT	IOE EPS	IOE IOE*	IND	CS2	CS3	FUNDS	GOV	FUNDS PART	VOTING SHARES (%)	CONTROL TOTALCAP
Finance and Insurance	491	11.79%	286	12.58%	0.33	0.00	0.10	0.27	0.22	0.10	0.22	0.31	0.06	0.28	0.15	67.69	1.38
Steel & Metals	456	10.95%	238	10.47%	0.31	0.01	0.07	0.22	0.21	0.08	0.15	0.61	0.09	0.00	0.23	62.98	1.65
Electrical Power	447	10.73%	237	10.42%	0.36	0.01	0.08	0.21	0.19	0.00	0.00	0.66	0.06	0.27	0.18	70.29	1.41
Textile	293	7.03%	148	6.51%	0.06	0.00	0.02	0.05	0.05	0.31	0.34	0.20	0.00	0.00	0.18	51.69	1.60
Chemicals	292	7.01%	146	6.42%	0.19	0.00	0.04	0.11	0.10	0.00	0.21	0.73	0.00	0.06	0.18	70.22	1.69
Telecommunications	273	6.55%	137	6.02%	0.37	0.01	0.12	0.26	0.20	0.00	0.03	0.93	0.04	0.00	0.27	64.07	1.92
Food & Beverages	263	6.31%	138	6.07%	0.20	0.00	0.06	0.15	0.14	0.08	0.36	0.34	0.16	0.00	0.34	56.21	1.38
Business Management	251	6.02%	143	6.29%	0.17	0.00	0.04	0.13	0.11	0.18	0.45	0.18	0.07	0.00	0.30	54.41	1.58
Vehicles and Parts	201	4.82%	115	5.06%	0.17	0.00	0.05	0.12	0.15	0.25	0.16	0.39	0.16	0.00	0.68	54.87	1.61
Commerce	180	4.32%	106	4.66%	0.28	0.00	0.07	0.20	0.20	0.03	0.37	0.31	0.00	0.00	0.27	49.44	1.59
Others	155	3.72%	94	4.13%	0.19	0.00	0.06	0.16	0.15	0.45	0.14	0.09	0.06	0.18	0.12	56.70	1.66
Oil & Gas	122	2.93%	65	2.86%	0.23	0.00	0.05	0.17	0.17	0.00	0.48	0.22	0.00	0.20	0.48	43.93	1.77
Pulp & Paper	120	2.88%	64	2.81%	0.27	0.01	0.09	0.20	0.18	0.00	0.23	0.77	0.00	0.00	0.00	65.30	1.81
Manufacturing	118	2.83%	66	2.90%	0.13	0.00	0.03	0.06	0.09	0.12	0.25	0.62	0.00	0.00	0.19	75.76	1.54
Construction	114	2.74%	68	2.99%	0.02	0.00	0.00	0.01	0.01	0.50	0.19	0.07	0.00	0.00	0.11	45.58	1.25
Industrial Machines	97	2.33%	57	2.51%	0.39	0.01	0.09	0.21	0.18	0.00	0.22	0.53	0.00	0.00	0.22	65.92	1.72
Electronics	86	2.06%	50	2.20%	0.15	0.00	0.02	0.06	0.08	0.02	0.23	0.70	0.02	0.00	0.34	59.80	1.22
Non-Metal Minerals	72	1.73%	41	1.80%	0.14	0.00	0.03	0.06	0.07	0.00	0.32	0.35	0.15	0.00	0.31	52.29	1.21
Mining	68	1.63%	34	1.50%	0.63	0.01	0.17	0.56	0.31	0.00	0.21	0.64	0.15	0.00	0.15	54.38	1.61
Transportation	56	1.34%	35	1.54%	0.30	0.00	0.08	0.22	0.19	0.00	0.14	0.45	0.38	0.00	0.57	54.46	1.21
Agriculture and Fishing	11	0.26%	6	0.26%	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	77.16	1.48
Total	4166	100.00%	2274	100.00%	0.25	0.00	0.07	0.18	0.16	0.10	0.22	0.47	0.06	0.08	0.24	60.95	1.56

Note: This table shows the number of observations in the sample segmented by industry between 1997 and 2008. The sample is composed of the companies that distributed cash dividends, through dividends, IOE or a combination of both. The column ASSETS takes into account the number of observations per asset, in each industry for the whole period. The column COMPANIES restricts the maximum number of assets to one per company. In addition to the composition by industry of the sample, the means of dependent variables (IOE_BIN, IOE_TA, IOE_PAYOUT, IOE_EPS, and IOE_IOE*) and ownership structure (IND, CS1, CS2, FUNDS, GOV, FUNDS_PART, VOTING_SHARES and CONTROL_TOTALCAP) are presented for each of the 21 industries in the sample.

Source: elaborated by the author.

3.2. Coverage Period

The model was tested in the period 1997 to 2008. The period was limited due to data availability of the variables used in the empirical model. A relatively long period of analysis was chosen because it provides a greater number of observations, thus increasing the statistical power of the results and enabling verification of trends over time.

3.3. Definition of Ownership Structure Variables

The classification of the variables of ownership structure followed the logic of the differentiated rates of taxation upon receipt of IOE. Following the methodology by Bortolon and Leal (2010), the direct and indirect ownership structures were analyzed. The purpose of applying this methodology is to understand, not only the direct shareholding in the investee, but also the composition of the shareholders in the second and other levels. In many cases, shareholders obtain substantial holdings by indirect means, controlling other companies that have shares in the investee, forming a pyramid control structure. Figure 1 summarizes the criteria considered in the classification of the variables of ownership structure.

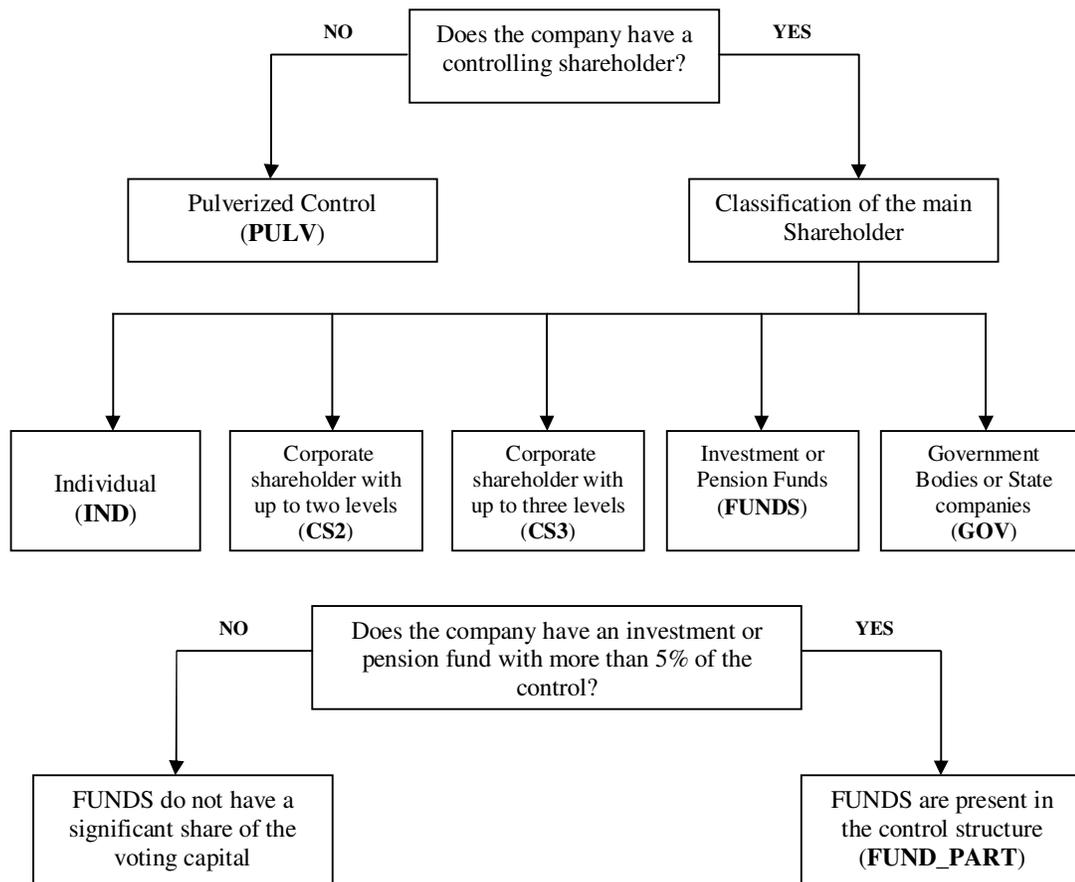


Figure 1: Classification and definition of the variables in the ownership structure

Source: elaborated by the author.

3.4. Panel Data Estimation

For Hsiao (1986), using data grouped in panels (stacking time series and cross sectional data) is justified because it allows the use of a greater number of observations, thus increasing the degrees of freedom, reducing the colinearity between the exogenous variables, and thus the potential bias of the omitted variable. This methodology is also quite widely used in studies of finance, especially when the objective is to analyze the behavior of certain individuals over time.

Estimating the panel with censored data, that is, with the accumulation of observations at a certain limit, by ordinary least squares is biased and inconsistent (Wooldrige, 2002). As the distribution of IOE cannot be negative and many companies only distribute earnings in the form of dividends, there is a concentration of observations at zero. For this reason, regressions are estimated using two nonlinear models, based on maximizing the likelihood function, Probit and Tobit.

3.4.1. The Probit Model

To measure the probability of a firm paying IOE, the dependent variable is also converted into a dummy variable, equal to 1 (firms that distributed IOE in the year) or zero (all others). Probit regressions are used for these estimates.

In the Probit model, it is assumed that the cumulative distribution function (CDA) of the dependent variable is normal, i.e. the effect of a unit variation in X (in this case, the independent variables) on the likelihood of $Y = 1$ (if the company paid dividends in the current year) is normally distributed.

3.4.2. The Tobit Model

According to Wooldrige (2002), the linear probability models have drawbacks when applied to strictly positive variables, with the accumulation of values at zero. One way to circumvent this problem is to use a Tobit model, which is specially designed for modeling dependent variables that have corner solutions.

The Tobit model is used in an analogous manner to the Probit model, but the dependent variable can assume any positive value in the distribution of probabilities. In the present case, this model provides the determination of the amount of benefits distributed by IOE, not just the tendency, as with the Probit model. It should be reiterated that the tax advantages of the IOE are proportional to the amount distributed, therefore, for a better understanding of the research problem, it is essential to analyze the magnitude of the distribution.

The Probit and Tobit models are widely used in literature when a subset of the sample is censored (for example, see Truong and Heaney, 2007; Brockman and Unlu, 2009; Boulton, Braga Alves and Shastri, 2010). This occurs with several financial series, such as dividends, where many companies choose not to distribute profits to their shareholders. In such cases, there are positive values for the regressors (independent variables), but not for the dependent variable. Estimates based on models of minimization of the squared errors, as seen above, generate not only biased but also inconsistent estimates. That is, even asymptotically, the estimates of the parameters are problematic.

3.5. Model, Constructs, and Variables Definition

The general model of this study is as follows:

$$Y_{it} = \alpha_0 + \sum_{j=1}^n \beta_j X_{jit} + \sum_{k=1}^p \delta_k Z_{kit} + a_i + u_{it} \quad (1)$$

Where Y_{it} is a measure of IOE payout for firm i in year t , X_{jit} are ownership structure variables ($j = \text{IND, CS2, CS3, FUNDS, GOV, FUNDS_PART, VOTING_SHARES, CONTROL_TOTALCAP}$ for firm i in year t), Z_{kit} are control variables ($\text{SIZE, EBITDA_TA, PROFITRES_TA, ROA, FINEXPENSES_TA, DEPREC_TA, LEVERAGE, ADR, N2_NM, N1_N2_NM, MARKET_BOOK}$ for firm i in year t), a_i is an unobserved idiosyncratic firm effect, and u_{it} is the error term.

In order to ensure that the inference on the estimated coefficients of the variables of interest is as unbiased as possible, it is important to include control variables in the equation (1). In other words, the relationship between the ownership structure and payment of IOE should be considered once other relevant effects, which were included based on the theoretical and empirical literature surveyed, have been checked. The control variables are listed in Table 3.

Table 3: Description of the variables and motivation for using the control constructs

CONSTRUCT	DESCRIPTION	REFERENCES	THEORY AND MOTIVATION	
IOE_BIN	Dummy that assumes the value "1" if tem company distributed IOE in the current year		EARNINGS DISTRIBUTION: The companies that use IOE THE most to compensate shareholders are those with higher ratios of IOE_TA, IOE_EPS, IOE_PAYOUT and IOE_IOE*.	
IOE_TA	Ratio between the amount of IOE and the Total Asset in the current year			
IOE_EPS	Ratio between the amount of IOE and the Net Profit in the current year	-		
IOE_PAYOUT	Ratio between the amount of IOE and the total earnings distributed in cash in the current year			
IOE_IOE*	Ratio between the amount of IOE and the maximum allowed by law in the current year			
IND	Dummy that assumes the value "1" if the main controlling shareholder is an Individual		OWNERSHIP STRUCTURE: Companies with more concentrated ownership structure pay less dividends than those with less concentrated capital, since a greater free cash flow provides opportunities to expropriate minority shareholders.	
CS2	Dummy that assumes the value "1" if the main controlling shareholder is a Firm with up to two vertical levels before the ultimate individual shareholder			
CS3	Dummy that assumes the value "1" if the main controlling shareholder a Firm with up to three vertical levels before the ultimate individual shareholder	Silva (2004), Truong and Heaney (2007),		
FUNDS	Dummy that assumes the value "1" if the main controlling shareholder is an associative investment entity	Brockman and Unlu (2009), Boulton, Braga-Alves and Shastri (2010)		
GOV	Dummy that assumes the value "1" if the main controlling shareholder is a government body or state –owned company			
FUNDS_PART	Dummy that assumes the value "1" if there is any associative investment entity that holds 5% or more of the voting capital			
VOTING_SHARES	Proportion of voting shares held by the main controlling shareholder			
CONTROL_TOTALCAP	Ratio between the share of voting capital and the share of the total capital			
SIZE	Natural logarithm of the Total Assets	Fama and French (2001), Mitton (2004), Brockman and Unlu (2009), Boulton, Braga-Alves and Chastri (2010)		SIZE: Company size is positively related to the distribution of earnings in cash.
EBITDA_TA	Ratio between the EBITDA and the Total Asset in the current year	Fama and French (2001), Mitton (2004), Truong and Heaney (2007), Brockman and Unlu (2009), Ferreira Jr <i>et al.</i> (2010)		PROFITABILITY: The more profitable for the company, the lower the tendency to need for external financing and the greater the tendency to distribute dividends in cash.
PROFITRES_TA	Ratio between the total profit reserves plus accumulated profits and Total Assets in the previous year			
ROA	Ratio between the current net profit and the Total Assets at the beginning of tem period			
FINEXPENSES_TA	Ratio between the financial expenses and the Total Asset in the current year		NON-EQUITY TAX SHIELDS: Companies that receive high non-equity tax shields tend to have lower or even zero benefits with the payment by IOE/ interest on equity.	
DEPREC_TA	Ratio between the total depreciation and amortization and the Total Asset in the current year	Truong and Heaney (2007), Brockman and Unlu (2009), Boulton, Braga-Alves and Shastri (2010)		
LEVERAGE	Ratio between the total liabilities and the Total Asset in the current year			
ADR	Dummy that assumes the value "1" if the company has ADRs in the NYSE (New York Stock Exchange)	Mitton (2004), Truong and Heaney (2007), Brockman and Unlu (2009), Boulton, Braga-Alves and Shastri (2010)	CORPORATIVE GOVERNANCE: Better corporate governance leads to fewer agency problems, and therefore reduces the need to distribute dividends.	
N2_NM	Dummy that assumes the value "1" if the company listed at level 2 or on the Corporate Governance New Market of the BM&F Bovespa			
N1_N2_NM	Dummy that assumes the value "1" if the company listed at any level of the Corporate Governance of the BM&F Bovespa			
MARKET_BOOK	Market to book ratio	Fama and French (2001), Truong and Heaney (2007), Boulton, Braga-Alves and Shastri (2010), Ferreira Jr <i>et al.</i> (2010)	INVESTMENT OPPORTUNITIES: The distribution of dividends is inversely proportional to investment opportunities / growth.	

Source: Elaborated by the author.

4. RESULTS

4.1. Evolution of IOE (1997 to 2008)

The assessment of the time series of the companies that paid IOE between 1997 and 2008 takes into account the ratio between the companies in the sample that distributed the IOE in the period and the number of companies that distributed cash dividends. Table 4 shows that in 1997 only 6% of the companies that distributed earnings in cash did so in the form of IOE. In that year, the remaining 94% of the sample distributed their profits exclusively through dividends and, so, missed the tax benefits provided by IOE. It should be reiterated that, because IOE is imputed to the mandatory dividend of Article 202 of Law 6404/74, there is no pecuniary reason, from the point of view of the company, that their cash dividends should not be distributed in this way.

As shown in Table 4, throughout the series a growing proportion of the companies choose to distribute cash dividends by IOE, which shows that more and more companies are taking advantage of tax benefits provided by this mechanism. As from 2006, this proportion exceeded 50%, indicating that approximately six out of ten companies distribute their profits, at least in part, in the form of IOE. This increase in the proportion of firms paying dividends in this way gives rise to an improvement in management practices aimed at maximizing the value of the firm. There is also a notable growth in the ratio of companies distributing IOE in relation to those eligible – that do not necessarily pay cash dividends - in the series from 1997 to 2008. According to Table 4, the percentage of companies that paid IOE in relation to the total number of eligible companies was 3.8% in 1997, rising to 31.1% in 2008.

Table 4: Analysis of the number of companies distributing earnings in cash

YEAR	ELIGIBLE (A)	CASH_DIST (B)	IOE (C)	(B) / (A)	(C) / (B)	(C) / (A)
1997	480	297	18	61.9%	6.1%	3.8%
1998	639	351	34	54.9%	9.7%	5.3%
1999	786	337	34	42.9%	10.1%	4.3%
2000	798	349	42	43.7%	12.0%	5.3%
2001	787	374	41	47.5%	11.0%	5.2%
2002	789	359	37	45.5%	10.3%	4.7%
2003	773	333	46	43.1%	13.8%	6.0%
2004	766	365	58	47.7%	15.9%	7.6%
2005	736	393	119	53.4%	30.3%	16.2%
2006	702	365	218	52.0%	59.7%	31.1%
2007	671	350	212	52.2%	60.6%	31.6%
2008	628	355	195	56.5%	54.9%	31.1%

Note: The column "Eligible" represents the number of companies in the BM & F Bovespa eligible to pay Interest on Equity (IOE), each year, under existing law. "CASH_DIST" is the number of companies that distributed earnings in cash, irrespective of the form of distribution. "IOE" is the number of companies that distributed earnings in cash through IOE. The last three columns on the right show the proportions between these variables, in order to display both the practices of the companies as well as the joint temporal evolution of these variables.

Source: Elaborated by the author.

Despite the visible increase over time, a very significant percentage of companies that

distribute cash dividends do not use IOE, despite the clear tax advantages provided. This stylized fact cannot be explained from the viewpoint of the company - in any situation, the distribution by IOE instead of by dividends reduces the company's tax burden. Then, why do so many companies distribute their profits through dividends and not by IOE? One explanation lies in the tax law, which establishes differential tax rates according to the legal nature of the beneficiaries. In practice, when there are deviations between the optimum for the majority shareholder and the optimum for the whole of the company, the decision can lead to the expropriation of minority shareholders, to the extent that their shares would be worth less than their potential value. The multivariate analysis, described in the following sections, is an attempt to provide some empirical evidence regarding these issues.

4.2. Multivariate Analysis

Multivariate analysis provides some important answers to two fundamental questions: i) what factors lead companies to distribute IOE? ii) what factors cause companies to distribute larger or smaller amounts of cash in the form of IOE? A summary of the results is shown in Table 5.

As with other empirical studies that address the choices regarding the distribution of dividends (Truong and Heaney, 2007; Brockman and Unlu, 2009) and IOE (Boulton, Braga-Alves and Shastri, 2010), the present study found evidence that larger, more profitable companies with higher growth opportunities are more likely to distribute by IOE. Specifically, the results in Table 5 suggest that the probability of an average-sized company distributing IOE increases with the size of its total assets (SIZE), with its earnings before interest, taxes, depreciation and amortization (EBITDA_TA) and the market to book value (MARKET_BOOK). The coefficients of these variables were statistically significant and robust to the different design specifications, especially in relation to the first two. The size-effect found in the empirical analysis suggests that the smaller companies, typically less professionalized as regards administration, tend to deliver less IOE than the larger companies. This effect may also be related to the economies of scale, among other features of larger companies. Another important result is that the shares most likely to pay IOE are negotiated with larger MARKET_BOOK indices, so that there is a premium on the market value of such companies. In other words, the market seems to positively evaluate distribution by IOE, corroborating the fact that the practice provides tax relief at the company level and aggregates value for the shareholder.

In even-numbered regressions, which include the ownership structure variables, neither the variables IND, CS2, CS3, GOV and FUNDS, nor the proportion of shares with

voting rights held by the controllers (VOTING_SHARES) presented statistical significance. However, with regard to the amount of distribution, state-controlled companies distribute more than the others (REG_6, REG_8), which corroborates the results from Bortolon and Leal (2010), who found evidence that state-controlled companies distribute more cash dividends than the others. Statistically more striking results were found with regard to the presence of institutional investors (FUNDS_PART) in the controlling structure. The presence of these investors leads to a higher propensity to distribute (REG_2, REG_4) and a greater amount of distribution by IOE (REG_6, REG_8). The presence of institutional investors, not necessarily holding the controlling position, seems to generate a substantial incentive. These institutions, often Pension Funds, exert considerable influence on the companies within their portfolios, even when they do not hold the majority position. This result strengthens the argument known in the literature as pension fund activism (Punsuvo, Kayo and Barros, 2007), which considers the influence of such funds on various aspects of the firm.

Other important results can be extracted from Table 5. Higher financial expenses (FINEXPENSES_AT) reduce the probability of distributing by IOE, but the result is not statistically significant. The presence of ADRs listed on the NYSE (ADR) is positively related to both the probability and the amount of earnings distributed in the form of IOE. However, this result seems sensitive to the inclusion of variables of ownership structure (REG_2, REG_4, REG_6, REG_8), suggesting that much of its explanatory power is already contained in the ownership structure of the companies. The presence in Level II or in the *Novo Mercado* (special corporate governance listing segments of the BM&F Bovespa) presented positive and statistically significant coefficients in the models that included variables of ownership structure and controls for the year and industry effects (REG_4, REG_8). These models are, according to the likelihood analysis, those that best fit the data. This evidence suggests that better corporate governance practices increase the likelihood of an average company enjoying the tax benefits of IOE when distributing earnings.

Furthermore, regarding the analysis of the corporate governance construct, an important aspect must be emphasized. The inclusion of a Level I special segment of corporate governance (N1_N2_NM) dummy reversed the sign of the coefficients of the variable N2_NM in both the Probit and Tobit models. This result strengthens the argument that the Level I is a segment with a lower degree of membership requirements, which makes it much closer to the traditional market than the *Novo Mercado*. In this sense, considering the distribution by IOE a practice that creates shareholder value, the probability of companies using this tool only increases with listing in Level II or on the *Novo Mercado*.

Table 5 – Propensity and amount of distribution of IOE: Probit and Tobit models

VARIABLES	ESTIMATION METHOD							
	PROBIT				TOBIT			
	REG 1	REG 2	REG 3	REG 4	REG 5	REG 6	REG 7	REG 8
_cons	-8.8773 (-9.81)***	-8.0516 (-6.32)***	-9.0275 (-9.57)***	-8.9054 (-6.73)***	-0.0885 (-9.16)***	-0.1428 (-0.11)	-0.0947 (-8.96)***	-0.1488 (-0.11)
SIZE	0.3883 (6.95)***	0.3060 (4.85)***	0.3776 (6.55)***	0.3185 (4.97)***	0.0032 (5.56)***	0.0024 (3.43)***	0.0037 (5.68)***	0.0027 (3.78)***
EBITDA_TA	2.1274 (2.75)***	2.0959 (2.53)**	1.7266 (2.23)**	2.0196 (2.41)**	0.0356 (4.24)***	0.0393 (4.27)***	0.0351 (4.08)***	0.0414 (4.53)***
PROFITRES_TA	1.7369 (2.67)***	1.1112 (1.60)	1.7223 (2.60)***	0.8877 (1.24)	0.0205 (2.85)***	0.0130 (1.81)*	0.0216 (2.99)***	0.0134 (1.78)*
DEPREC_TA	1.1468 (0.72)	1.2596 (0.76)	2.4737 (1.47)	2.8538 (1.64)	0.0494 (2.92)***	0.0528 (3.22)***	0.0726 (4.08)***	0.0764 (4.18)***
FINEXPENSES_TA	-1.2895 (-1.07)	-1.4806 (-1.17)	-1.0161 (-0.84)	-1.0666 (-0.83)	-0.0170 (-1.30)	-0.0165 (-1.25)	-0.0133 (-1.01)	-0.0114 (-0.84)
ADR	0.3938 (1.90)*	0.2287 (1.00)	0.5162 (2.44)**	0.3584 (1.48)	0.0053 (2.35)**	0.0023 (0.94)	0.0055 (2.10)**	0.0036 (1.42)
N2_NM	0.1858 (0.79)	0.3157 (1.21)	0.5503 (2.10)**	0.6034 (2.10)**	0.0022 (0.87)	0.0048 (1.81)*	0.0041 (1.57)	0.0061 (2.15)**
MARKET_BOOK	0.0736 (1.83)*	0.0873 (2.11)**	0.0792 (2.00)**	0.0915 (2.24)**	-0.0002 (-0.40)	-0.0001 (-0.23)	-0.0002 (-0.49)	-0.0002 (-0.40)
IND		-0.0978 (-0.27)		0.5523 (1.43)		-0.0021 (-0.52)		0.0027 (0.66)
CS2		-0.4869 (-1.60)		-0.1730 (-0.55)		-0.0037 (-1.05)		-0.0018 (-0.53)
CS3		0.1662 (0.55)		0.1767 (0.56)		0.0018 (0.51)		0.0007 (0.21)
GOV		0.8725 (1.64)		0.8715 (1.60)		0.0130 (2.54)**		0.0105 (1.83)*
FUNDS		-0.3677 (-0.97)		-0.2305 (-0.60)		-0.0045 (-1.11)		-0.0028 (-0.72)
FUNDS_PART		0.3302 (1.65)*		0.3580 (1.80)*		0.0055 (2.66)***		0.0060 (2.81)***
VOTING_SHARES		-0.3055 (-0.96)		-0.0021 (-0.68)		-0.0025 (-0.73)		-0.0001 (-0.02)
CONTROL_TOTALCAP		0.4994 (4.56)***		0.4477 (4.16)***		0.0059 (5.03)***		0.0050 (4.31)***
Stocks (n)	413	398	413	398	413	398	413	398
Observations (n)	2358	2033	2358	2033	2358	2033	2358	2033
Log Likelihood	-803.24	-716.74	-772.29	-691.58	1241.14	1171.38	1271.31	1193.61
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	No	No	Yes	Yes	No	No	Yes	Yes

Note: This table presents the results of the Probit [REG1, REG2, ... , REG4] and Tobit [REG5, REG6, ... , REG8] regressions of the panel data for the dependent variables IOE_BIN and IOE_TA, respectively. This represents the ratio between the amount of distribution of IOE in year “t” and the Total Assets of each company. The value “1” is assumed if the company proceeds distributed by IOE in period “t” and “0” otherwise. Year and sector dummies were inserted in the Table in an attempt to capture the effects of period and sector on economic activity. The even-numbered regressions are similar to the previous regression (base model), but include the ownership structure variables. The estimated coefficient and the z statistic (in parentheses) are reported for each variable.

***, ** and * represent 1%, 5% e 10% of statistical significance, respectively.

Source: Elaborated by the author.

Unlike Level II and the *Novo Mercado*, membership of Level I does not require, for example, mandatory bid rules for non-voting and minority shares (“tag along rights”), voting rights to preferred shareholders on matters of greater importance (mergers and acquisitions, major asset sales), adherence to the exchange’s Arbitration Board, mandatory offer to repurchase shares in circulation in the case of delisting or deregistration of trading at that listing segment. This lower level of requirements of good governance appears to be expressed in the results, since the practice of distribution of earnings found in the New Market and in Level II could not be observed in Level I, indicating the importance of listing in segments with higher governance standards.

4.3. Robustness Checks

As is usual in empirical studies in the area of finance, several tests were conducted to check the robustness of the results, including proxies and different specifications. The question is whether the conclusions based on empirical models are subject to bias or to the specificities of models, samples, and variables. So it is essential to conduct sensitivity analyses. For reasons of space, these results are not presented in tables; nevertheless, below there is a summary of the main conclusions from these analyses.

The robustness analysis indicates small changes in the overall results. In addition to the aforementioned change in the results for corporate governance with the inclusion of the companies listed in Level I (N1_N2_NM), profitability remains a positive and significant determinant if measured by return on assets (ROA). The existence of tax losses in previous years (PREV_LOSSES) reduces the propensity of the average company distributing by IOE, although statistical significance was observed only in some models. Other possible features that would influence the propensity to distribute by IOE, such as the tangibility of the assets (TANG) and the total payout (PAYOUT) were tested, but the results were not statistically significant and there was little change to the model’s explanatory power.

Besides the use of different independent variables, proxies for the constructs that determine the choice between IOE and dividends in Brazilian companies, an analysis of the sensitivity of the results to the dependent variable used in the model was conducted. Besides IOE_TA the same Tobit regressions in Table 6 (REG_5, REG_6, REG_7, REG_8) were tested with the dependent variables IOE_EPS, IOE_PAYOUT, and IOE_IOE*. Overall, the estimates yielded very similar results: the variables that measure size, profitability, good governance and the presence of institutional investors in the control structure remain positive and significant determinants of the distribution by IOE in the companies analyzed. This result is important as it is reaffirmed even with alternative dependent variables, which are nothing

more than different ways of measuring the phenomenon studied.

5. CONCLUDING REMARKS

The present study sought to further analyze the distribution of IOE in publicly traded Brazilian companies by considering the tax laws in light of the both the company and its beneficiaries, shareholders or owners. This approach highlights the close relationship between ownership structure and the distribution of earnings in Brazil, and so represents an improvement over other studies that examine the issue strictly from the perspective of the distributing company (Ness Jr and Zani, 2001; Boulton, Braga-Alves and Shastri, 2010).

From a theoretical standpoint, it was shown that the Brazilian tax law distinguishes between the tax rates on IOE according to the legal nature of the beneficiary, creating incentives for these different groups, when they are present in the controlling shareholding block of the companies, to exert influence on decisions regarding the distribution of cash earnings. Moreover, as the net income of IOE is differentiated with respect to the distribution of profits through dividends, the decision of companies may reduce the wealth of their shareholders, especially minority shareholders, who have little power over the firm's decisions.

The empirical results of this study suggest that the ownership structure influences the distribution of IOE in Brazilian companies, even with the inclusion of control variables for size, profitability, non-property tax relief, corporate governance and investment opportunities. Weak evidence was found that the presence of state ownership in the controlling structure increases the likelihood of a company distributing earnings by IOE. Strong evidence was found regarding the presence of institutional investors (associative investment entities) with more than 5% of voting capital, in line with *a priori* expectations. This group of investors, which includes investment clubs and funds, private equity funds, private pension entities (open or closed), and managed portfolios, benefits from receiving a zero tax rate when receiving earnings in the form of IOE, according to Laws 9532/1997 and 11053/2004. Besides being in line with the monetary incentives provided by the Brazilian corporate and tax law, this result also corroborates arguments regarding pension fund activism, the presence of which in the controlling structures would lead to benefits for all shareholders (Punsovo, Kayo and Barros, 2007).

As for the sensitivity analysis, the results regarding the ownership structure proved to be robust in several tests, including replacement by proxies of the control constructs and also the use of alternative measures of the dependent variable. Among these, emphasis should be

given to the creation of the variable IOE_IOE*, which measures the ratio between the amount actually distributed by the company and the maximum amount allowed by law. By means of this variable, a number of potential problems in the variables that are extensively used in the literature can be overcome, which constitutes an advantage of the present study in terms of approach and depth of analysis.

Overall, this study suggests that larger, more profitable companies with better corporate governance practices and more growth opportunities tend to distribute more cash earnings by IOE, a practice that increases the wealth of minority shareholders. Furthermore, these results corroborate the outcome hypothesis from La Porta *et al.* (2000), in that a greater commitment to good corporate governance practices is related to a greater distribution of earnings in cash, especially by IOE.

Although this study contributes theoretically and empirically to a better understanding of the use of the IOE in traded companies in Brazil, many questions still remain unanswered. The Brazilian institutional environment, marked by a complex tax system involving high taxation rates, is one of the most conducive to practices of tax avoidance. Even so, many companies, even those controlled by groups of shareholders that would directly benefit from its use, have not yet adopted the practice of distributing as much earnings by IOE as legally allowed. For this reason, in future studies, it would be valuable to investigate in greater detail this decision-making process and assess the degree to which controllers influence this process.

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