

The Growth of Direct Payouts to Shareholders in Brazil: Tax Savings or Changing Characteristics of Firms?

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ABSTRACT: This paper shows that the increase in the proportion of Brazilian publicly traded firms providing cash payouts between 1990 and 2003 was due to an increase in the propensity to pay and not to changes in the companies' characteristics. Unlike in the United States, the current Brazilian tax structure favors cash payouts over capital gains. The tax structure also makes a distinction between dividends and interest on stockholders' equity. The latter category has become the main way of cash distribution. Big firms with high profitability and low leverage are the most likely to make cash profit distributions.

Keywords: dividends, interest on stockholders' equity, tax structure, payout policy.

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1. INTRODUCTION

In the American literature on investor payout policy an important enigma is why companies reward their shareholders by paying dividends if these have a tax disadvantage when compared to other forms of remuneration. Except for the possible signaling effects of this policy, firms that pay dividends would be behaving inefficiently, because this results in a higher cost of equity capital.

In Brazil in just nine years – from 1992 through the end of 2000 – the tax legislation on dividends and capital gains was modified seven times. With the reform of 1996, the final taxation on dividends became less than that on capital gains. It also established an alternative way of paying dividends, called “interest on stockholders’ equity”, deductible as a financial expense by firms for income tax purposes (though subject to income tax withheld by companies from stockholders’ earnings). In 1997, another modification enhanced the advantage of paying interest on stockholders’ equity instead of dividends, allowing it to be deducted from the base for calculating social contribution on net profit¹ as well as from company income tax. These changes made it more advantageous to distribute profits directly to shareholders, either as interest on stockholders’ equity or dividends, than indirectly in the form of share buybacks.

Simultaneously with the tax law changes, there was a significant increase in the number of firms distributing profits directly. While in the 1990-1994 period the yearly average of firms distributing dividends was approximately 40%, in the 1997-2003 period, this figure was 60% (now including interest on stockholders’ equity as well as dividends).

Despite the favorable tax framework, the evidence reported by Silva and Brito (2005) is that Brazilian companies distribute a smaller portion of profits than do their American counterparts. According to Ness Jr. and Zani (2001), although these tax law modifications represent a lower tax burden on firms, they appear not to have stimulated firms to finance themselves with equity instead of with debt.

The present study complements this literature by analyzing the evolution of direct payouts in the period of these tax law changes, documenting possible temporal changes in the fundamental characteristics of firms and/or their propensity to remunerate shareholders. Objectively, we try to answer the following questions: Was the increase in direct payouts to shareholders (i) due to changes in the fundamental characteristics of Brazilian firms, or (ii) due to the alterations in tax law that encouraged direct distribution of profits?

This paper is structured along the same lines as Fama and French (2001). First we differentiate the characteristics of the firms that distribute their results directly from those that do not, by analyzing univariate statistics and logit regressions. Both indicate that profitability, size and indebtedness should affect a company’s decision. More profitable, bigger and less indebted firms have a greater probability of making cash payouts to stockholders.²

We then separate the mechanisms for direct distribution between dividends and interest on stockholders’ equity and note that dividends remained relatively stable over the study period while interest on stockholders’ equity grew after 1997. In 2003 the portion of net profit paid as dividends was 16%, while interest on stockholders’ equity represented 30%, indicating that Brazilian firms were increasingly using this mechanism.

¹ The Brazilian tax system has two types of levies, *impostos*, or taxes per se, and *contribuições*, or contributions. The main difference is that the revenue from taxes goes into the general fund while that from contributions is earmarked for specific uses.

² Silva and Brito (2005), Heineberg and Procianny (2003) and Mota (2007) also reach similar conclusions about the factors determining corporate payouts.

Finally, the analysis of the Brazilian data indicates that the increased direct payout by firms in the same period was due to a greater propensity to do so, without any significant changes in their basic characteristics. In other words, the data favor the hypothesis of tax savings over the hypothesis of a change in fundamental characteristics as the main driver of companies' payout behavior. The greater likelihood of Brazilian firms to make cash distributions was associated with the increased tax benefits of doing so in comparison with indirect ways of remunerating stockholders. Our result is different than that found for the American market by Fama and French (2001), where the reduction in paying dividends was caused jointly by a change in firms' average characteristics and a reduced propensity to make cash payouts.

This paper is structured in seven sections including this introduction. The next section presents a review of the literature on the theme. The third section describes the sample and the fourth analyzes the characteristics of companies that remunerate their shareholders directly. Section 5 examines the average propensity to make cash payouts, while Section 6 analyzes how the changes in tax rates are related to the increased propensity for direct payouts. Finally, Section 7 contains the final considerations.

2. REVIEW OF THE LITERATURE

In the modern theory of payout policy, one of the pioneering works was that of Lintner (1956), based on 28 interviews with executives of the largest American companies. His sample indicated that the executives were concerned with the stability of dividends, based their decisions on the level of dividends mainly on the profits expected in the medium term and planned the dividend policy first. Therefore, companies followed a well-defined dividend policy, calling for smooth payouts over time and gradual adjustments after permanent rises in income. He found a dividend payout of 50%, meaning that companies allocated roughly half of their net income to shareholders as dividends. Although Lintner (1956) used a small sample, and his work preceded the classic study of Gordon (1959) and the modern theories of corporate finance proposed by Modigliani and Miller (1958), many other authors have reexamined his stylization of dividend policy and confirmed the accuracy of his result, such as Fama and Babiak (1968) and Fama and French (2002).

The contemporary discussion of the effect of stockholder payout policy on company value started with Gordon (1959), according to whom dividends were positively related to the firm's value. Since a firm's worth is given by the present value of discounted future dividends, the more dividends it pays to its stockholders, the greater will be its market value. In an extension of Modigliani and Miller (1958), Miller and Modigliani (1961) contested the partial equilibrium view of Gordon (1959). They demonstrated that in a tax-neutral world, with complete information and perfect competition, where the investment policy is given, the payout policy is irrelevant. If this is not borne out in practice, then one should seek reasonable violations of the hypotheses of neutral taxation, complete information and perfect competition assumed in Modigliani and Miller (1958).

In the United States the tax rates on dividends paid to individuals are higher than those on capital gains. Without considering other aspects, shareholders subject to this tax structure should prefer remuneration through repurchase of shares instead of dividends. This finding makes it harder to explain why a large number of American companies pay considerable amounts of dividends, given the consequent increase in the cost of equity capital.

Theoretically, possible explanations are minimization of agency cost, as formulated in works such as Easterbrook (1984), or the signaling hypothesis, proposed in studies such as

Miller and Rock (1985), where dividends are, respectively, the way to align the interests of management with those of stockholders or a way to signal return in an environment of information asymmetry.

In empirical terms, Jagannathan et al. (2000) indicated that a characteristic of American companies that distribute dividends is a positive and permanent operating cash flow, while firms that repurchase their shares are those with high but volatile operating cash flow. In other words, the practice of buying back shares is a more flexible way of remuneration. This evidence is complemented in papers like Fama and French (2002) and Allen and Michaely (2003), which documented the gradual disappearance of dividends. According to these authors, the falling proportion of firms distributing dividends is due both to changes in firm characteristics and to a lesser propensity to pay.

In Brazil, the tax advantage is inverted, because currently the income tax rate paid on capital gains is higher than that on dividends. There were a number of changes between 1992 and 2000, as described in Table 1. Indeed, there were seven different scenarios where the optimal tax structuring of investor remuneration changed during these years. The main change occurred in 1996, when it became more advantageous to distribute profits directly, because when paid as dividends they became tax free, and could be deducted from taxable income by the company when paid as interest on stockholders' equity (though subject to 15% income tax withheld by companies from stockholders' earnings), up to a limit of 50% of net income. All else constant, both repurchase of shares by firms and the sale of shares by investors in the secondary market became worse alternatives than the realization of gains on invested capital.³

Table 1: Evolution of the Brazilian tax structure on stock gains

Period	Tax rate paid					
	by the company on:			by the investor on:		
	Dividends Distributed (A)	Interest on Stockholders' Equity (B)	Undistributed Profits (C)	Dividends (D)	Interest on Stockholders' Equity (E)	Capital Gain (F)
2000-2003	0.34	0.00	0.34	0.00	0.15	0.20
1997-1999	0.34	0.00	0.34	0.00	0.15	0.10
1996	0.34	0.09	0.34	0.00	0.15	0.10
1995	0.34	-	0.34	0.15	-	0.10
1994	0.34	-	0.34	0.15	-	0.25
1993	0.25	-	0.25	0.00	-	0.25
1990-1992	0.33	-	0.33	0.00	-	0.25

(continued on next page)

³ Besides the tax framework unfavorable to stock buybacks, the Brazilian Securities Commission (*Comissão de Valores Mobiliários*, or CVM), in an attempt to provide greater transparency to the capital market, oversees buyback transactions to discourage those not on an equitable basis. According to the regulations, companies that repurchase their shares can keep in treasury a maximum of 10% of each class of free float shares (the total shares not in the hands of the controlling shareholder or group).

Table 1: Evolution of the Brazilian tax structure on stock gains (continued)

2.2. Value net of taxes of R\$1 allocated to			
Period	Dividends: R\$(1-A)*(1-D) (G)	Interest on Stockholders' Equity: R\$(1-B)*(1-E) (H)	Capital Gain: R\$(1-C)*(1-F) (F)
2000-2003	0.66	0.85	0.53
1997-1999	0.66	0.85	0.59
1996	0.66	0.77	0.59
1995	0.56	-	0.59
1994	0.56	-	0.50
1993	0.75	-	0.56
1990-1992	0.67	-	0.50

2.3. Deduction of Interest on Stockholders' Equity:

Interest on stockholders' equity is deductible from real profit, calculated on the stockholders' equity accounts and limited to the pro rata daily Long-term Interest Rate - TJLP (Law 9249 of 1995, Art. 9; 1999 Income Tax Regulations, Art. 347; and Federal Revenue Normative Instruction 93 of 1997, Art. 29). The amount of interest on stockholders' equity that can be deducted as an operating expense is limited to the greater of the following amounts (1999 Income Tax Regulations, Art. 347, § 1): (i) 50% of net income, after deducting social contribution on net profit and before the provision for income tax and deduction of the referred interest; or (ii) 50% of the balance of retained earnings and earnings reserves from previous periods.

2.4. Taxation:

Interest on stockholders' equity paid out is subject to income withholding tax at a rate of 15%. According to whether the beneficiaries are (1999 Income Tax Regulations, Art. 347): (a) legal entities taxed under the real profit, presumed profit or arbitrated profit regimes, the interest so received is part of the calculation of total tax for the year and will be considered as prepayment at tax filing time, thus being counted for adjusting the overall tax owed (Law 9430 of 1996, Art. 51); (b) legal entities not taxed under the real profit, presumed profit or arbitrated profit regimes, including those that are exempt, and individuals, the interest on stockholders' equity is considered subject to definitive taxation, meaning that the amounts paid will not be considered at tax filing time and not be included in any adjustments.

Despite the favorable tax configuration, the evidence reported by Silva and Brito (2005) for the period from 1995 to 2001 indicates that Brazilian companies distribute a smaller portion of profits than their American peers do. Although they did not investigate possible temporal changes in the capital structure or the propensity to remunerate shareholders because of changes in tax legislation in the period, the authors indicated that the most profitable and least indebted firms distribute a greater proportion of their profits, results confirmed in Heineberg and Procianoy (2003) and Mota (2007).

The changes in the capital structure of Brazilian firms in response to new legislation are studied in Ness Jr. and Zani (2001). They concluded that despite the reduction of the tax burden, this does not appear to stimulate companies to finance themselves with equity instead

of debt. The authors also did not investigate if there were any changes in the firms' characteristics and/or propensity to pay. This is the aim of the present article.

3. DESCRIPTION OF THE SAMPLE

We used the accounting information available in the Economática database for publicly traded nonfinancial companies between 1990 and 2003, corrected for inflation by the IGP-DI (general market price index) from Fundação Getulio Vargas.

First we gathered data on 347 firms. Of this total, 105 did not have complete data, so we discarded them, leaving 242 firms in our sample. Table 2 shows the total number of firms analyzed in each year, as well as the number of firms in the different groups. Table 2 also presents the annual evolution of the total number of nonfinancial companies, divided among those that (i) paid dividends or interest on stockholders' equity that year, (ii) did not pay dividend or interest on stockholders' equity that year, (iii) had already paid dividends or interest on stockholders' equity in previous years, and (iv) never paid dividends nor interest on stockholders' equity.

Table 2: Evolution of the number of companies according to the shareholder remuneration policy

Groups:	1990	1991	1992	1993	1994	1995	1996
All companies	140	142	148	155	164	172	177
Payers	69	54	43	61	68	88	88
Non-payers	71	88	105	94	96	84	89
Former payers	0	23	39	26	27	16	28
Never paid	71	65	66	68	69	68	61
Groups:	1997	1998	1999	2000	2001	2002	2003
All companies	174	197	199	188	169	150	144
Payers	98	120	113	114	106	86	85
Non-payers	76	77	86	74	63	64	59
Former payers	28	26	46	40	44	49	47
Never paid	48	51	40	34	19	15	12

Note: Presents the total number of firms analyzed in each year and the number of firms classified in the different groups. The "Payers" distributed earnings directly in the referred year; the "Non-payers" did not distribute earnings directly in the referred year. The "Non-payers" group was subdivided into two: firm that had never distributed earnings directly, called "Never paid", and firms that did not distribute earnings directly that year but had done so in the past, called "Former payers".

Table 1 presents the evolution of the tax structure in Brazil. It can be seen that currently the greatest after-tax return is obtained from interest on stockholders' equity. However, this advantage is limited to a payout ratio of 50%, after which dividends become more advantageous, while the rates on capital gains remain the least advantageous irrespective of the payout ratio and the form of accounting for these payments. Direct remuneration became significantly advantageous as of the tax reform of 1996, and was consolidated by the new change in 1997.

It should be pointed out that the dividend series in the Economática database refers to the previous year and are subject to the legislation of that year. Therefore, the dividends for 1997 refer to the profits earned in 1996, according to 1996 tax legislation. Since the database aggregates dividends and interest on stockholders' equity in the same account, we had to consult the database on payouts of the São Paulo Stock Exchange (Bovespa) to measure the breakdown between the two forms of direct payouts for each year and firm.

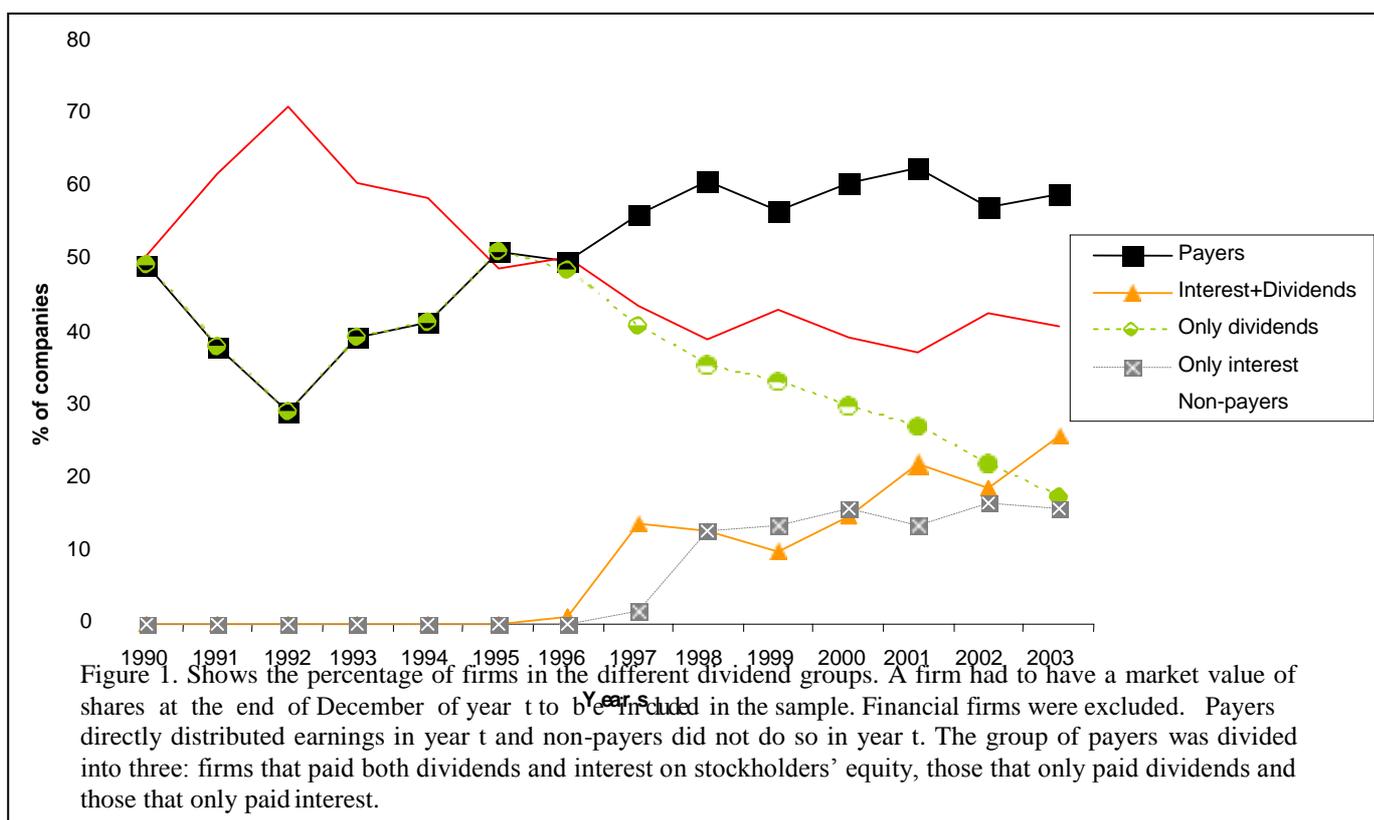


Figure 1

Figure 1 depicts the yearly evolution of the percentage of nonfinancial firms, divided among those that (i) paid dividends and interest on stockholders' equity, (ii) paid only dividends, (iii) paid only interest on stockholders' equity, and (iv) paid neither dividends nor interest on stockholders' equity. Even though premature, the hypothesis of tax savings appears to be supported in Figure 1, which shows that the percentage of firms in the group of direct payers (i.e. dividends and/or interest on stockholders' equity) increased starting from 1996 above the level of 1990. It also shows a reduction in the number of firms not paying dividends, indicating some substitution between dividends and interest on stockholders' equity, as permitted by law.

A superficial analysis of the disaggregated data reveals that among the companies that combined dividends and interest on stockholders' equity, the great majority had reached the limit of 50% of net income distributed as interest on stockholders' equity. Informally, this fact is an indication that the firms in this subset were using all the tax advantage of paying interest on stockholders' equity before starting to pay dividends.⁴

⁴ Because our aim is to measure the changes in firms' characteristics determining cash payouts and the propensity to pay them, we did not investigate the aspects determining the choice between payouts in the form of dividends

4. CHARACTERISTICS OF THE FIRMS THAT REMUNERATE THEIR STOCKHOLDERS DIRECTLY

The objective of this section is to investigate the fundamental characteristics of Brazilian companies that directly remunerated their shareholders from 1990 to 2003. Was the increase in the number of firms that distributed profits directly due to a change in the fundamental characteristics of new paying firms in the direction of traditional paying ones? Was the rise in the average percent of profits distributed due to a generalized improvement in the characteristics determining this distribution? To answer these questions we analyzed the characteristics of Brazilian firms through univariate statistics, separating them into different groups as payers or non-payers. Although illustrative of the different groups, annual univariate analysis produces a large volume of information that is difficult to synthesize, and does not control for other effects. Therefore, to synthesize the results of this panel analysis with multiple determining factors, we estimated logit models, where proxies for profitability, investments (capex), size and indebtedness were the independent variables in the equation, following Fama and French (2001).

Our measure of profitability is the ratio of earnings before tax to total book value of assets, E_t/A_t , called return on assets (before taxes).

Table 3: Ratios of profitability, investments, book value, size and leverage

	1990-1992	1993	1994	1995	1996	1997-1999	2000-2003
	<i>E_t/A_t (percent)</i>						
All companies	-1.62	-0.99	5.46	1.81	4.50	-0.52	0.77
Payers	2.32	5.87	7.74	5.03	6.35	4.47	7.39
Non-payers	-4.24	-5.44	3.82	-1.66	2.61	-7.55	-8.75
Former payers	-5.21	-12.93	4.25	18.22	12.60	-8.92	-7.48
Never paid	-4.04	-2.58	3.65	-6.48	-2.14	-6.61	-12.56
	<i>dA_t/A_t (percent)</i>						
All companies	1.50	-1.03	11.81	12.50	-0.90	-5.77	-4.64
Payers	5.17	2.54	11.34	14.65	6.22	-11.70	-1.25
Non-payers	-1.61	-3.34	12.15	10.21	-8.82	0.66	-9.47
Former payers	11.57	-12.79	2.85	2.45	-8.70	-15.26	-11.74
Never paid	0.03	0.27	15.84	12.06	-8.89	10.05	-3.30

(continued on next page)

or interest on stockholders' equity. On this subject, as well as which firms optimize the tax advantage of the latter payout form, see Mota (2007).

Table 3: Ratios of profitability, investments, book value, size and leverage (continued)

	1990-1992	1993	1994	1995	1996	1997-1999	2000-2003
	<i>V_t/A_t (percent)</i>						
All companies	85.44	114.32	127.42	96.69	117.07	116.86	125.91
Payers	104.09	133.61	146.55	105.08	124.69	119.59	122.19
Non-payers	75.09	102.02	113.93	87.79	109.27	113.64	131.02
Former payers	70.39	104.72	125.76	73.89	97.51	97.81	125.42
Never paid	76.38	100.98	109.23	91.11	114.85	122.98	150.26
	<i>ln(A_t)</i>						
All companies	13.54	13.58	13.65	13.74	13.92	14.03	14.06
Payers	13.89	13.95	14.14	13.97	14.26	14.26	14.55
Non-payers	13.31	13.34	13.30	13.50	13.56	13.72	13.35
Former payers	14.01	13.01	12.75	12.78	13.14	13.57	13.58
Never paid	13.18	13.46	13.52	13.67	13.77	13.76	12.70
	<i>L_t/A_t (percent)</i>						
All companies	46.55	42.75	42.80	51.75	55.29	59.25	70.76
Payers	44.68	36.26	39.32	43.58	48.49	49.68	52.23
Non-payers	47.72	46.89	45.25	60.42	62.25	72.58	97.57
Former payers	42.50	41.20	37.81	58.21	65.49	72.17	89.23
Never paid	48.32	49.07	48.20	60.94	60.72	73.27	125.59

Note: Et, At, $dA_t=(A_t - A_{t-1})$, MEt, $V_t=(L_t+ ME_t)$, BEt and $L_t=(A_t - BE_t)$ are earnings before income tax, book value of total assets, investments (capex), market value of shares, total market value of the firm, stockholders' equity and book value of total liabilities in year t, according to the annual average for the periods 1990-1992, 1997-1999 and 2000-2003. The ratios are calculated by firm, and then the average of the firms is calculated in each year.

Table 3 shows that during the entire study period, companies making direct payouts were more profitable than those not paying direct returns. This difference was most pronounced in the 2000-2003 period, when the average return was 7.39% for companies remunerating their shareholders directly, while companies in the non-paying group tallied losses of 8.75%. These results are qualitatively similar to those of Fama and French (2001), since in the American market the firms that pay dividends are those with the greatest earnings expectations. However, in the American market, the companies that never paid are more profitable than those that did pay at some time in the past, which is not the case for Brazil.

We use two investment opportunity measures. The first is a direct measure of current investment, calculated by the percentage variation in total assets, (dA_t/A_t). It can serve as an indicator of investment opportunity if this measure is persistent in time. The second is the market-to-book ratio, V_t/A_t , which is a measure of future investments but also can be an indicator of profitability.

Table 3 shows that the present decisions on investment (dA_t/A_t) and shareholder payout do not appear to be related. There also does not seem to be a clear relationship between the decision to remunerate shareholders and future investment opportunities (V_t/A_t), since the

advantage of paying firms in this respect in the 1990-1996 does not hold up in the 1997-2003 period. Therefore, we cannot infer that investment is a determining factor in firms' decision to make cash payouts to stockholders.

Firm size is presented in Table 3 as the natural logarithm of the book value of assets. For reasons such as inflation adjustment of balance sheet figures, this measure is not comparable over time, but rather only between groups in the same year. Throughout the study period, companies that distributed profits directly were the largest Brazilian firms. This result appears to agree with that found for the American market. Fama and French (2002) considered that large firms are more solid and have less volatile cash flows than smaller companies. However, a caveat is in order for the Brazilian market. Unlike would be expected, firms that never paid were not necessarily the smallest.

The total indebtedness measure suggested by Fama and French (2001) is the total indebtedness ratio, resulting from subtracting stockholders' equity (BEt) from total assets (Lt=At-BEt), divided by total assets, that is Lt/At.

An analysis of the annual leverage indexes among the groups shows that companies that paid dividends were less indebted in the majority of the years. Among the non-payers, those that never paid were the most leveraged, which indicates a certain degree of substitutability between direct payout and debt.

Taken together, the evidence that paying firms are more profitable, less indebted and that there is no relation with investment confirm the findings of Silva and Brito (2005).

To test the marginal effects caused by profitability, investment, size and leverage, we performed annual logit regressions for the 1990-2003 period and took the temporal measures of the estimated coefficients, as proposed by Fama and MacBeth (1973).

According to the method of Fama and MacBeth (1973), instead of calculating a cross-sectional regression of the temporal measures or a panel, a cross-sectional regression for each year studied is used:

$$y_{it} = x_{it}' \lambda_t + \varepsilon_{it} \quad \forall i$$

where: y_{it} is the leverage of firm i in year t ; x_{it} is a vector with the values of the factors for firm i in year t ; λ_t is the vector of cross-sectional sensitivities of year t ; and ε_{it} is the error term for firm i in year t . Then, with the time series of cross-sectional estimates λ_t for each year t , a time average vector is calculated:

$$\hat{\lambda} = \frac{1}{T} \sum_{t=1}^T \hat{\lambda}_t$$

and from the standard deviations of the cross-sectional estimates the standard errors of $\hat{\lambda}$ are calculated:

$$\sigma^2(\hat{\lambda}) = \frac{1}{T^2} \sum_{t=1}^T (\hat{\lambda}_t - \hat{\lambda})^2,$$

which are divided by T^2 because they are standard errors of sample means.⁵

Given our objective of making inferences about the mean coefficients, the advantage of Fama-MacBeth and their temporal standard deviations is that the annual regressions serve the role of dummies by permitting the coefficients to vary over time and the fact that those standard errors are robust to the cross-sectional correlation of the residuals.

Table 4: Logit regressions of the factors determining direct payout

	Intercept	Et/At	dAt/At	Vt/At	ln(At)	Lt/At
<i>1991-2003</i>						
Average coefficient	-3.86	6.11	0.17	0.40	0.33	-2.01
t-statistic	-5.64	5.24	0.60	3.07	6.43	-5.45
<i>1991-1995</i>						
Average coefficient	-3.38	3.35	0.25	0.67	0.22	-1.16
t-statistic	-5.76	3.08	0.65	3.58	5.53	-5.18
<i>1996-2003</i>						
Average coefficient	-4.23	8.18	0.10	0.21	0.41	-2.65
t-statistic	-3.85	5.45	0.26	1.39	5.65	-5.08

Note: The dependent variable is 1 in each year t if the firm distributed earnings directly that year, or zero otherwise. The explanatory variables are: profitability (Et/At), growth rate of assets (dAt/At), market-to-book ratio (Vt/At), firm size (ln(At)) and indebtedness (Lt/At). The table shows the average coefficients of the regressions and the t-statistic for the averages (the temporal standard deviation of the coefficients divided by $N^{1/2}$).

The mean coefficients presented in Table 4 confirm the interpretations in the preceding section, which suggests that more profitable, larger and less indebted Brazilian companies are more likely to distribute payouts.

The variable dA_t/A_t , which measures investment opportunities and does not show a clear pattern in Table 3, also was not significant in the multivariate analysis. The measure V_t/A_t was significant for the entire sample during the 1991-2003 period, as a consequence of its significance for the 1991-1995 sub-period. However, it was not significant for the 1996-2001 sub-period and there were conflicting signs among sub-groups of firms, as seen in Table 6.

A priori, the results found for profitability, size and indebtedness agree with the pecking order (Myers and Majluf, 1984; Myers, 1984) and trade-off theories (Easterbrook, 1984; Jensen, 1986) on their common predictions, and also confirm the findings of Silva and Brito (2005) for Brazilian data.

In summary, the analysis of the characteristics of Brazilian firms by calculating univariate statistics and logit regressions indicates that profitability, size and debt affect

⁵ See Cochrane (2001) for a comparison of the procedures of Fama and MacBeth, cross-section and panel.

companies' decisions to directly distribute earnings. Firms with higher probability of directly remunerating stockholders are those that are more profitable, larger and less indebted.

5. THE PROPENSITY OF FIRMS TO DISTRIBUTE EARNINGS DIRECTLY TO STOCKHOLDERS

It remains to examine whether it was the variation of firms' fundamental characteristics or the variation in their propensity to remunerate that caused the increase in the direct distribution of earnings. In other words, we should analyze whether the increase in average direct payout was due to changes in the factors determining payout, such as profitability, size and/or leverage over the 1990-2003 period, or whether this increase was because companies were more inclined to make payouts, given the factors determining that remuneration.

In this section we use logit regressions to separate the effects of changes in characteristics from firms' increased propensity to pay. Table 5 measures both the effects of the increase propensity to make cash payouts and those of changes in characteristics. The percentage of payers observed is the percentage of firms that remunerated stockholders that year, i.e., the ratio between the paying firms and the total number of firms expressed as a percentage. We obtained the expected percentage of paying firms by running logit regressions for each year between 1990 and 1995, calculating the means of the angular coefficients according to Fama and MacBeth (1973), and then multiplying these mean coefficients by the characteristics of the firms in the respective year. Variations in the expected percentage mean changes in the characteristics of the companies in the sample, because we set the coefficients as those that were estimated in the base period of 1990-1995. Variations in the difference between the expected and observed percentages of payers measure firms' propensity to pay. Therefore, a negative value indicates that companies are becoming less inclined to directly remunerate their stockholders.

The mean expected percentage of payers between 1990 and 1995 was 45.57%, slightly below the counterpart figure between 1996 and 2003, which was 47.62%. Since the difference is only 2.05 percentage points and the respective standard deviations are 2.24% and 0.59%, we can say that the firms' characteristics did not change significantly between these two periods. In other words, the mean characteristics of profitability, size and debt load of paying companies in the base period of 1990-1995 are similar to those characteristics in the 1996-2003 period.

Table 5: Observed and expected percentage according to the logit regressions

Period	Total firms	Number of payers	Observed percentage	Expected percentage	Standard deviation	Expected-Observed
1990-1995	154	64	41.59	45.57		-
1996	177	88	49.72	47.52	1.62	-2.20
1997	174	98	56.32	48.67	1.55	-7.65
1998	197	120	60.91	46.01	1.31	-14.90
1999	199	113	56.78	47.65	1.41	-9.13
2000	188	114	60.64	49.90	1.42	-10.74
2001	169	106	62.72	47.40	1.41	-15.32
2002	150	86	57.33	44.69	1.67	-12.64
2003	144	85	59.03	49.10	1.67	-9.93

Note: We used as a base period the years 1990-1995 to predict the expected future proportion of paying firms using the logit regressions. The explanatory variables are profitability (Et/At), growth rate of assets (dAt/At), market-to-book ratio (Vt/At), firm size ($\ln At$) and indebtedness (Lt/At). Total firms corresponds to the total number of firms in the sample and average for the period. Number of payers indicates the number of firms that directly paid that year. Observed percentage is the percentage of paying firms (ration of payers to total firms times 100). The expected percentage was estimated by applying the average coefficients from the logit regression between 1990-1995 on the values of the explanatory variables for each firm in each year, adding all the firms, dividing by the number of firms and multiplying by 100. The evolution of the expected percentage measures the effect of changes in characteristics on the percentage of paying firms. The standard deviation is the standard deviation of the average expected percentage, calculated as the ratio of the standard deviation divided by the square root of the number of firms. Expected – Observed measures the effect of the propensity to pay.

By comparing the observed with the expected percentages, we can infer the size of the change in the propensity of Brazilian companies to pay and its significance. This difference increased between 1995 and 2003, mainly due to the increase in the observed percentage. This indicates a significant increase in Brazilian firms' propensity to pay for all the years from 1997 to 2003. The observed percentage of payers averaged 41.59% for the 1990-1995 period and 59.11% for the 1996-2003 interval. This evolution implies that the average difference between the expected and observed percentages declined from 3.98 percentage points in the 1990-1995 period to negative 11.32 percentage points in the 1996-2003 period. In other words, Brazilian companies became more inclined to pay earnings directly because of their characteristics.

These findings on the increased propensity of Brazilian firms to pay earnings run counter to those of Fama and French (2001) for the United States. Those authors showed that American firms were becoming less inclined to pay dividends. Between 1978 and 1998, the difference found between the expected and observed percentage changed from negative 1.6 percentage points to 30.8 percentage points. Besides this, there was a significant temporal decline in the expected percentage, from 70% to 44.6%, in the same period, indicating that there was also a substantial change in the characteristics of paying firms.

Table 6: Logit regressions of the factors determining direct payout by group of firms

	Intercept	Et/At	dAt/At	Vt/At	ln(At)	Lt/At
<i>5.A. Firms that paid directly the previous year</i>						
<i>1991-2003</i>						
Average coefficient	-7.46	8.61	0.95	9.65	0.49	-8.64
t-statistic	-2.42	2.62	1.23	1.11	3.58	-1.19
<i>1991-1995</i>						
Average coefficient	-12.42	1.66	1.86	23.88	0.61	-19.75
t-statistic	-1.72	0.25	1.51	1.14	1.90	-1.11
<i>1996-2003</i>						
Average coefficient	-4.35	12.95	0.38	0.76	0.41	-1.70
t-statistic	-3.54	5.42	0.41	1.31	4.70	-2.05
<i>5.B. Firms that paid directly in other years but not the previous year</i>						
<i>1992-2003</i>						
Average coefficient	-1.13	8.71	1.29	-4.49	0.23	0.72
t-statistic	-0.50	2.89	1.03	-1.38	1.96	0.31
<i>1992-1995</i>						
Average coefficient	2.26	8.78	3.82	-7.87	0.02	4.27
t-statistic	0.59	1.33	2.19	-1.07	0.11	0.82
<i>1996-2003</i>						
Average coefficient	-3.07	8.67	-0.16	-2.56	0.35	-1.31
t-statistic	-1.24	3.02	-0.11	-0.97	2.48	-0.72
<i>5.C. Firms that never paid directly before the previous year</i>						
<i>1991-2003</i>						
Average coefficient	-1.83	2.98	2.39	0.19	0.12	-3.34
t-statistic	-1.65	1.18	2.66	0.41	1.26	-3.95
<i>1991-1995</i>						
Average coefficient	-1.61	1.98	3.28	0.46	-0.07	-1.48
t-statistic	-0.85	0.92	3.71	0.91	-0.59	-1.60
<i>1996-2003</i>						
Average coefficient	-2.02	3.81	1.66	-0.03	0.27	-4.89
t-statistic	-1.59	0.90	1.18	-0.04	2.70	-5.07

Note: The logit regressions were estimated separately for each year t from 1991-2003 for firms that (i) distributed earnings directly in year $t-1$, (ii) firms that never distributed directly up to year $t-1$, (iii) firms that did not distribute in year $t-1$ but did in previous years (already paid). The dependent variable is 1 if the firm distributed earnings directly in year t and zero otherwise. The explanatory variables are profitability (Et/At), growth rate of assets (dAt/At), market-to-book ratio (Vt/At), firm size ($\ln At$) and indebtedness (Lt/At). The table shows the average coefficients of the regressions and the t-statistic for averages (the temporal standard deviation of the coefficients divided by $N^{1/2}$).

Since Table 4 does not subdivide the companies among groups of payers and non-payers in a single year and those that never paid, we prepared Table 6, aiming at a qualitative analysis by group. Table 6 shows the results of logit regressions for the different groups and measures if the decision on whether or not to make direct payouts in year t depends on whether the firm paid in $t-1$. There are no significant qualitative differences between the mean coefficients in Table 4 and those presented in Table 6. These latter figures are used in Table 7 to verify how the firms' characteristics and their propensity to make direct payouts changed in each group and between groups during the years studied.

As intuition would indicate, the results in Table 7 show that the observed and expected percentages are greater for the firms that paid in the previous year than for firms that did not. In other words, the probability that a paying firm continued to pay is greater than the probability that non-payers started to pay.

From the observed and expected probabilities shown in Table 7 we can infer that there was a different temporal evolution for the groups. Between the 1991-1995 and 1996-2003 periods, there were no significant changes in the group of paying firms: the mean observed and expected percentages by approximately 5 percentage points, from 77.32% to 81.54% in the first period and from 87.60% to 91.61% in the second. Despite the increases in the probabilities of paying, what stands out are the substantial positive differences between the expected and observed figures in the last column of the paying group, indicating that firms remunerated stockholders on fewer occasions than expected throughout the analyzed period.

Table 7: Observed and expected percentage according to the logit regressions

Period	Observed percentage	Expected percentage	Expected – Observed
<i>6.A. Firms that paid directly the previous year</i>			
1991-1995	77.32	87.60	-
1996	79.78	90.49	10.71
1997	86.52	88.66	2.14
1998	87.88	86.51	-1.37
1999	75.00	95.55	20.55
2000	83.19	94.50	11.31
2001	83.33	94.31	10.98
2002	76.42	87.78	11.36
2003	80.23	95.09	14.85
<i>6.B. Firms that paid directly in other years but not the previous year</i>			
1992-1995	41.40	27.35	-
1996	18.75	24.61	5.86
1997	28.57	16.78	-11.79
1998	39.29	24.64	-14.65
1999	19.23	13.96	-5.27
2000	36.96	16.18	-20.77
2001	25.64	11.19	-14.45
2002	18.18	10.35	-7.83
2003	30.61	17.15	-13.47

(continued on next page)

Table 7: Observed and expected percentage according to the logit regressions (continued)

Period	Observed percentage	Expected percentage	Expected – Observed
<i>6.C. Firms that never paid directly before the previous year</i>			
1991-1995	11.48	9.77	-
1996	20.90	6.73	-14.17
1997	23.33	7.95	-15.38
1998	29.79	6.11	-23.67
1999	33.33	6.85	-26.48
2000	20.00	6.57	-13.43
2001	34.29	4.28	-30.01
2002	10.53	2.97	-7.55
2003	6.67	8.26	1.59

Note: The “Observed percentage” is the percentage of paying firms (ratio of the payers over the total number of firms times 100). The “Expected percentage” was estimated by applying the average coefficients from the logit regression between the years 1990-1995 obtained in Table 6 on the values of the explanatory variables for each firm in each year, adding all the firms, dividing by the number of firms and multiplying by 100. The evolution of the expected percentage measures the effect of changes of characteristics on the percentage of firms in the different payout categories. Expected – Observed measures the effect of the propensity to pay.

The group of firms that had already paid dividends showed a reduction of 38% in the average expected percentage between the 1992-1995 and 1996-2003 periods, from 27.35% to 16.86%, a tendency approximately followed by the observed percent, which declined from 41.40% to 27.15%. Examination of the last column for the 1996-2003 period shows that the firms that already paid increased their propensity to pay, with an average value for the expected-observed difference of -10.30%.

Finally, the mean expected probability for the group of companies that never remunerated stockholders directly fell 36% between the two periods, from 9.77% to 6.22%, but the corresponding observed figures increased by a substantial 95%, from 11.48% to 22.35%. The average difference of -16.14% between the expected and observed figures for the 1996-2003 period indicates a significant increase in these firms’ propensity to pay.

To sum up, Table 7 indicates that the increase in propensity to pay depicted in Table 5 was caused by formerly non-paying firms becoming more inclined to pay. In other words, it suggests that the tax changes favoring direct payouts prompted non-paying companies to start paying, but had an insignificant impact on other companies.

6. THE INFLUENCE OF TAXATION ON DIRECT PAYOUT

As shown in Table 1, in 1996 the tax rules started favoring dividends and interest on stockholders’ equity, making these more advantageous than capital gains. The tax savings in relation to capital gains were enhanced with the legal changes in 1997 and 2000. During these years, there was a significant increase in the total payout index, which is the sum of dividends plus interest on stockholders’ equity divided by net income. From 1996 to 1997, the total payout rose from 19% to 33%, showing the high sensitivity to tax law changes. A comparison

of the values net of taxes for dividends and interest on stockholders' equity shows that the advantage shifted to the latter, particularly after 1997. In 1997 the percentage of net income that Brazilian companies distributed as interest on stockholders' equity was 19%, a higher figure than for dividends. An analysis of the payout ratios of dividends and interest on stockholders' equity in Figure 3 shows that the percentage of earnings distributed as dividends fluctuated around a steady level after 1993. In contrast, the distribution of net income as interest on stockholders' equity, starting at a considerable 20% in 1997, grew steadily thereafter. In the last change in the study period, in 2000, the rate on capital gains was doubled, from 10% to 20%, making direct payout even more advantageous for investors. In 2003, 30% of net income was distributed as interest on stockholders' equity, an increase of 11 percentage points in relation to 1997.

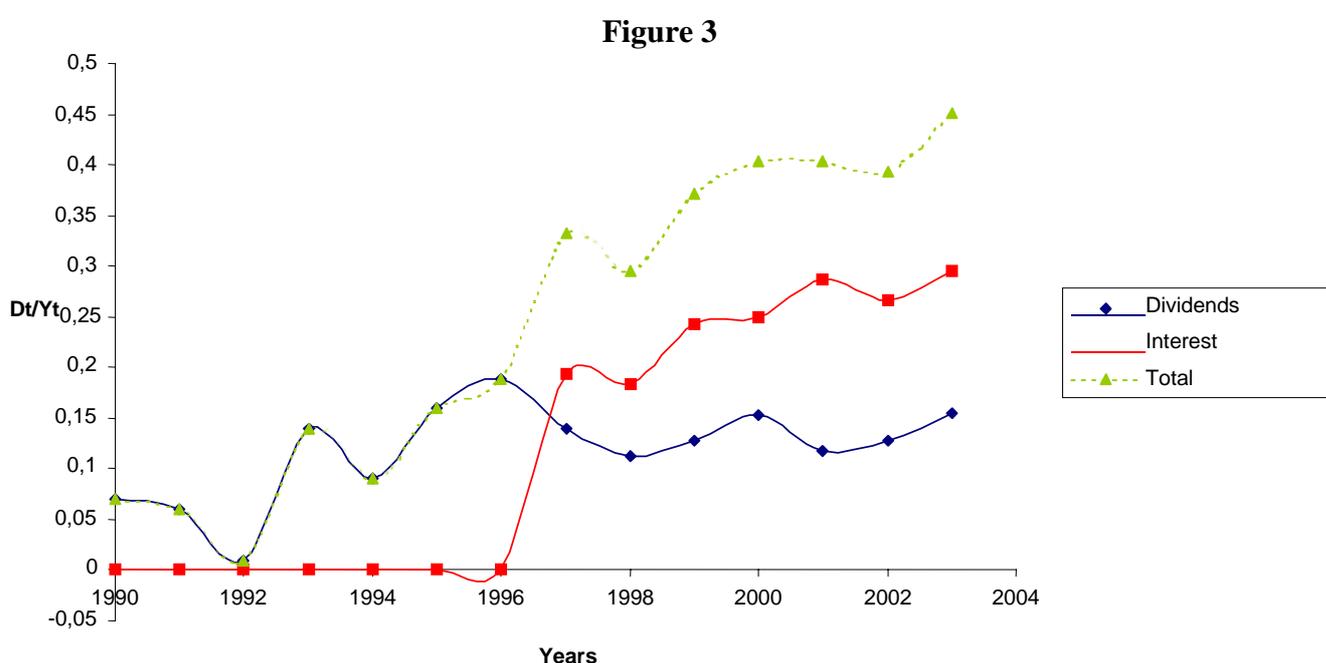


Figure 3 shows the average percentage among distributing earnings in the form of dividends and interest on stockholders' equity; Total payout is the total of dividends plus interest on stockholders' equity divided by net income; Payout of dividends is the dividends paid divided by net income; Payout of interest is the interest on stockholders' equity divided by net income.

The coincidence of the increased propensity to make direct payouts shown in Table 5 evidences that Brazilian firms reacted to the tax reform measures that made direct distribution of earnings the less costly way to remunerate investors.⁶

⁶ Although Ness and Zani (2001) indicate that such reaction appears to be less than efficient.

7. CONCLUSIONS

Unlike reported by Fama and French (2001) for the United States, the evidence for Brazil shows an increase in the proportion of firms making direct payouts to shareholders between 1990 and 2003.

The Brazilian companies making cash payouts, either in the form of dividends or interest on stockholders' equity, were the most profitable, largest and least leveraged. These characteristics did not change significantly during the years studied, which shows that the increase in direct shareholder payout is not related to changes firms' characteristics.

The Brazilian evidence, after controlling for the fundamental characteristics, suggests that the increased likelihood of firms to remunerate their stockholders directly is associated with lower tax costs. Indeed, the changes in tax law not only was a determining factor in direct versus indirect payouts, but also in the breakdown between the two types of direct payouts permitted as of 1996. Since then, firms started paying earnings more through interest on stockholders' equity than dividends.⁷

We can conclude, then, that the reduction in tax rates on direct shareholder remuneration was the determining factor in the increased use of this practice in Brazil. The disadvantage of capital gains makes indirect forms of distribution, such as stock buybacks, less advantageous to investors and hence little used by firms.

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⁷ The fact that the majority of firms use a combination of paying dividends and interest on stockholders' equity is perhaps explained by the legal limit of 50% net income that can be allocated to the latter payout category. This question is outside the scope of this study.

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