

**CLIENTELE EFFECTS IN DIVIDENDS DISTRIBUTIONS – THE
PORTUGUESE CASE**

Abstract

The analysis of the clientele effect of the dividend is associated to a market imperfection, the existence of taxes, and is related to the discussion on the relevance of dividend distributions. Because there are economic agents with different fiscal framings, this can mean that some will prefer dividends, while others will prefer capital gains. The purpose of this study is to analyze, for the Portuguese market, if the tax system has some influence in the choice of stocks by investors, that is, if the different fiscal treatment of dividends and capital gains make the investors prefer stocks of higher or smaller dividend yields. The empirical component of this paper is based essentially on Elton e Gruber (70) approach. The clientele effects issue is particularly relevant in all markets where dividend and capital gains are taxed differently, as is the case of portuguese market.

CLIENTELE EFFECTS IN DIVIDENDS DISTRIBUTIONS – THE PORTUGUESE CASE

1. INTRODUCTION

The analysis of the clientele effect of the dividend is associated to a market imperfection, the existence of taxes, and is related to the discussion on the relevance of dividend distributions. Because there are economic agents with different fiscal framings, this can mean that some will prefer dividends, while others will prefer capital gains.

The purpose of this study is to analyze, for the Portuguese market, if the tax system has some influence in the choice of stocks by investors, that is, if the different fiscal treatment of dividends and capital gains make the investors prefer stocks of higher or smaller dividend yields.

We will begin by framing this issue, through a revision of the main theoretical and empiric studies (subsections 2.1 and 2.2). In section 3, we will present an empirical study with portuguese data. This section is subdivided as follows: the theoretical support of the empirical study is presented in subsection 3.1; we will refer briefly the main characteristics of Portuguese taxes in subsection 3.2; the empirical results are presented in subsection 3.3. Finally, section 4 is dedicated to the conclusions.

2. A REVIEW OF THE LITERATURE

2.1. THEORETICAL ASPECTS

Miller and Modigliani (1961) admit the possibility of clientele effects linked to dividends distributions, but they state that if the distribution of the firms' payout ratios corresponds exactly to the distribution of the investors' preferences, then the situation is not different from the case of perfect markets, where it is irrelevant for investors to receive dividends or capital gains. Each firm will tend to attract its own clientele, constituted by the investors that prefer its payout ratio. Even if there is shortage of offer of a specific payout ratio in the market, the investors nevertheless can build their desired portfolios without having to pay a premium for those stocks, by acquiring a combination of stocks with different payout ratios, each one with the appropriate weight. In fact, given the existence in the market of a great diversity of payout ratios,

this process will only fail to eliminate permanent premiums or discounts in stocks if the distribution of the investors' preferences is strongly concentrated in any of the extremities of the scale of payout ratios. The authors state that this imperfection is only relevant if it results in investors having systematic preferences for dividends or for capital gains.

But the main point is that the existence of systematic fiscal disadvantage of dividends in relation to the capital gains can, in fact, lead to a concentration of preferences in a certain type of stocks. Rationally, the unfavorable fiscal treatment of dividends in relation to capital gains should lead investors with higher incomes to prefer capital gains. However, the authors refer that a substantial part of the stocks are held by investors that are not subjected to a higher taxation on dividends than on capital gains (like charity institutions, foundations, retired people with low income), or by investors that pay lower taxes on dividends (like insurance companies), generating a clientele effect favorable to dividends.

Farrar and Selwyn (1967) observed that the different fiscal treatment of dividends and capital gains together with the structure of the income tax existing at the time of their study, implied that investors with different tax brackets would face different marginal taxes on dividends.

Their base assumption was that individuals maximize net returns. The firm can distribute profits by paying dividends, or in alternative, the firm can decide not to pay dividends, and the return for investors comes from capital gains resulting from selling part of their stocks. Both types of returns are subject to tax. When the capital gains tax is smaller than the tax on dividends ($t_{gi} < t_{pi}$), the investors will prefer capital gains, for any given value of profits, interest rates, or debt level (of the investor or of the firm), resulting in,

$$\frac{\tilde{Y}_i^s}{\tilde{Y}_i^d} = \frac{[(C\tilde{F} - rD_c)(1 - t_c) - rD_{pi}](1 - t_{gi}) + rD_{pi}(t_{pi} - t_{gi})}{[(C\tilde{F} - rD_c)(1 - t_c) - rD_{pi}](1 - t_{pi})} > 1 \quad (1)$$

where,

\tilde{Y}_i^s = expected return for the i th investor, if the return is in the form of capital gains;

\tilde{Y}_i^d = expected return for the i -th investor, if the return is in the form of dividends;

$C\tilde{F}$ = expected cash-flow of the firm;

r = interest rate on debt, assumed to be equal for investors and firms;

D_c = firm's debt;

D_{pi} = personal debt of the i -th individual;

t_c = income tax of the firm;

t_{pi} = income tax of i -th individual.

Given the fact that, for most investors, the dividend tax is higher than the capital gains tax, this implies that firms should not pay dividends, because under these circumstances, the investors will prefer the higher after tax returns associated with capital gains.

Brennan (1970) developed the work of Farrar and Selwyn in a context of general equilibrium, assuming that investors maximize the expected social welfare. The author developed a basic condition for the equilibrium of the stock market in a uncertainty context, when the investors face different taxes. The framework is the Capital Asset Pricing Model, extended to include the effects of taxes that investors pay on dividends and on capital gains.

This author's conclusions are not far from those stated by Farrar and Selwyn. In relation to dividend payout, Brennan states that, for a given risk level, the investors demand higher returns on stocks with higher expected dividend yields, due to the higher taxation of dividends relative to capital gains. In other words, the investors accept lower returns before taxes, in the stocks that pay lower dividends and provide higher capital gains.

Black and Scholes (1974) also recognize the possibility of the existence of a clientele effect. They state that the firms, knowing that there are investors for several types of dividend yields, would adjust their dividend policies as necessary, to satisfy the demand. The authors argue that some types of investors can prefer high dividend yields, while other types of investors, can prefer low dividend yields. The first group includes: firms in general, because they support higher taxes on capital gains than on dividends; funds where the beneficiaries receive returns resulting only from dividends and interest; investors that are spending their wealth and find receiving dividends easier than selling stocks or borrowing. The second group includes all investors that pay higher taxes on dividends than on capital gains. Finally, we have a group of investors that are tax exempt, which should be indifferent to the dividend yield of the stocks they hold.

Miller and Scholes (1978) demonstrated that even if the income tax of individuals is higher than the tax on capital gains, there are instruments in the financial market that allow individuals to design investment and financing strategies to neutralize the fiscal disadvantage of the dividends. The implication of their demonstration is that the investors should be indifferent to dividends or capital gains, and so, there would not be reason to detect any clientele effect associated to the differential fiscal. On the other hand, the authors verified that the stockholder segmentation that would result from a clientele effect, didn't have any clear translation to the reality of the stockholder structure of the firms.

In short, there are no doubts that among the wide variety of investors present in the markets, we will find different preferences caused by their different fiscal framings. The next question that needs to be answered is if by the observation of the real data we can detect this clientele effect empirically. We now turn to this.

2.2. EMPIRICAL STUDIES

Following the work of Miller and Modigliani, the clientele effects were also suggested by Elton and Gruber (1970). These authors tried to detect the existence of an empirical relationship between the dividend policy of the firm and the tax supported by the marginal investor. The evidence of this relationship is essential for the

demonstration of a clientele effect, because a change in the dividend policy should lead to a change of the stockholders structure. A specific dividend policy will attract investors with specific income tax brackets.

The authors, extending the reasoning of Campbell and Beranek (1955), began by establishing a relationship between the stock price behavior on the distribution day and the tax of the marginal stockholder. A stockholder that sells its stocks before the distribution of dividends, loses the right to receive them. If he sells the stocks after the distribution, it receives the dividend, but he should expect to receive a lower price. In a market with rational arbitrage, the price reduction should reflect the relative value of dividends and capital gains for the marginal stockholder. As the taxes on dividends and on capital gains are different, the different fiscality on these two types of returns affects the decision. In a simetric perspective, we can infer the marginal investor's tax, just by observing the reduction of the price following the dividend distribution.

The equilibrium condition that makes the marginal investors indifferent between selling the stocks before or after the dividend distribution, is the following:

$$P_B - t_c(P_B - P_C) = P_A - t_c(P_A - P_C) + D(1 - t_o) \quad (2)$$

where,

P_B = stock price before the dividend distribution;

P_A = stock price after the dividend distribution;

P_C = stock price when bought;

D = dividend received by the investor;

t_o = dividend tax;

t_c = capital gains tax,

that is, the net return obtained by the stockholder if he sells the stocks before the dividend distribution is equal the net return obtained if he selling after the dividends. Developing the equality above, we have:

$$\frac{P_B - P_A}{D} = \frac{1 - t_o}{1 - t_c} \quad (3)$$

Elton and Gruber found that, on average, the stock price reduction was less than the amount of the dividend. This is consistent with the tax on dividends being higher than the tax on capital gains.

To test for the existence of a clientele effect, Elton and Gruber tried to detect a relationship between the dividend policy and the marginal stockholder's tax, inferred from (3). They used two variables that could influence the desire of the stockholder in investing in the firm, which were the dividend yield and the payout ratio.

The empiric results obtained by these two authors revealed a statistically significant positive relationship between $(P_B - P_A)/D$ and the dividend yield, which suggests that the tax bracket of the marginal stockholder is lower, when the dividend yield of the stock is higher, and it also goes down with the increase of the payout ratio. These results are coherent with the following statements:

- The lower the dividend yield, the lower the percentage of the total return that the stockholder will receive in the form of dividends and higher will be the percentage that he will receive in the form of capital gains. Thus, investors that choose stocks with high dividend yields should be located in lower income tax brackets relatively to the stockholders that prefer stocks with low dividend yields.
- Applying the same logic, firms with high payout ratios will attract stockholders in relatively lower income tax brackets, than the firms with low payout ratios.

A different view was stated by McConnell and Lewellen (1976), who showed that the consideration of transaction costs could explain the empiric results obtained by Elton and Gruber.

Kalay (1982) also argued that transaction costs should be taken into consideration and that, when doing this, the $(P_B - P_A)/D$ ratio would no longer be constrained to be equal to 1. The author presents the following equation:

$$1 - \frac{a\bar{P}}{D} \leq \frac{\bar{P}_B - P_A}{D} \leq 1 + \frac{a\bar{P}}{D} \quad (4)$$

where,

$$\bar{P} = (\bar{P}_A + P_B) / 2 ;$$

$a\bar{P}$ = expected cost of a round trip, that is, buying and selling the stock;

Kalay argues that only within the limits defined in (4) would be possible to infer the marginal investors' tax, since outside those limits the price variation would be affected by arbitrage from investors trying to take advantage of the opportunity to get excessive returns. Only within the bounds defined by (4) there are no arbitrage opportunities.

A similar argument was presented by Miller and Scholes (1982), who criticized Elton and Gruber for ignoring the short term transactions carried out by traders and tax exempt investors. These authors argue that the detected relationship between the dividend yield and the price change after a dividend distribution can also be explained by short term trading as an alternative to the clientele effect explanation.

The importance of short term arbitrage activity turns less plausible the idea that the marginal stockholder's income tax can be inferred from the behavior of the stock price after on the day after the dividend distribution.

In fact, most of the empirical evidence from the earlier work shows that, on average, the ratio between the price change and the dividend is less than 1, supporting the hypothesis of the existence of a fiscal effect, as proposed by Elton and Gruber. However, the studies carried out after 1975, when the transaction costs were liberalized, show evidence that this ratio has approached 1, and it is often not significantly different from 1

A very interesting study was performed more recently by Barclay (1987), applying the analysis of Elton and Gruber (1970), with the corrections proposed by Kalay (1982) and Eades, Hess and Kim (1984), to test the differential tax hypothesis. The approach is different, in the fact that the author uses two samples of stock prices. The first sample, designated pre-tax, refers to a time period before the introduction of income tax (1900 to 1910). The second sample refers to the period between 1962 and 1985 (post-tax sample). In the pre-tax sample, because there are no taxes, the investors should be indifferent between dividends and capital gains. Thus, the statistic of Elton and Gruber should not be statistically different from 1. In the post-tax sample, because there is heavier taxation on dividends than on capital gains, the statistic should be statistically smaller than 1. Both hypothesis are confirmed by the data. The results reached by Barclay are consistent with: one, in the pre-tax period, the investors see dividends and capital gains as perfect substitutes, and two, the tax differential in the post-tax period, leads the investors to place a higher discount on dividends, than on capital gains.

The author also tests the correlation between the excessive returns in the day-after and the dividend yield. To test this relationship, in each of the samples the data is ordered by dividend yields and partitioned in quintiles. For each of these quintiles, the $\Delta P/D$ ratio was calculated using adjusted closing prices.

In contrast with the negative relationship observed between the excessive returns and the dividend yields, in the post-tax sample, in the pre-tax sample no evidence was detected of a relationship between the two variables. This evidence is consistent with the hypothesis that the different taxation of dividends and capital gains has a significant impact in the portfolio choice of individual investors.

In short, the empirical evidence is consistent with the existence of clientele effects related to the different taxation of dividends and capital gains. After the U.S. tax reform of 1986, the differential taxation almost disappear and the interest of economists with this issue was reduced. However, the issue is still relevant in all the markets where dividends and capital gains are taxed differently, as is the case of the Portuguese market.

3. THE PORTUGUESE CASE

3.1. THEORETICAL FRAMING

Considering the inexistence of transaction costs, the equilibrium price adjustment is given by:

$$\frac{(P_{an} - P_{ap}^e)}{D} = \frac{1 - t_d}{1 - t_{mv}} \quad (5)$$

where,

P_{an} = stock price, in the day before the dividend distribution;

P_{ap}^e = expected stock price, in the day after the dividend distribution.

In equilibrium, the price adjustment relative to the dividend is a function of the taxes on dividends (t_d) and on capital gains (t_{mv}):

- if $t_d > t_{mv}$, the price adjustment should be less than the dividend amount;
- if $t_d < t_{mv}$, the price adjustment should be more than the dividend amount;
- if $t_d = t_{mv}$, the price adjustment should be equal to the dividend amount.

Admitting that investors are subjected to different taxes on dividends, theoretically, we could infer the taxes of the investors who have done the marginal transactions on the stock. If the price adjustment is less (more) than the amount of the dividend, we have evidence of an unfavorable (favorable) tax effect on dividends, and so, we can infer that the tax on dividends is higher (lower) than the tax on capital gains. We can then state that the price adjustment will diverge from the dividend amount depending on the relative taxation of dividends and capital gains. In fact, knowing t_{mv} , we can determine the dividend tax for the marginal investor from $(P_{an} - P_{ap}) / D$.

With the assumption that transaction costs are null, the expected return before taxes is:

$$R^e = \frac{(P_{ap}^e - P_{an} + D)}{P_{an}} = \frac{(t_d - t_{mv}) D}{(1 - t_{mv}) P_{an}} \quad (6)$$

This expression is obtained from the equilibrium condition that for the investor should be indifferent to sell the stocks before or after the dividend distribution. This equality, together with the $t_d > t_{mv}$ hypothesis, allows us to verify that:

- the expected return before taxes will be positive, in the distribution date;
- a positive relationship exists between the expected return before taxes, and the dividend yield;

The clientele effect linked to the dividend taxation results from the fact that higher dividend yield stocks will attract investors with lower marginal income tax. The existence of this clientele effect implies:

- From equation (5), we see that there is a negative relationship between the degree of price adjustment and t_d . This relationship, together with the clientele effect, means that there will be a positive relationship between the degree of price adjustment and the dividend yield or, in other words, higher dividend yields imply higher price adjustments and lower t_d ;
- The stronger the clientele effect is, the weaker will be the relationship between the expected return before taxes and the dividend yield, because in these circumstances, when D/P_{an} in equation (6) increases, the coefficient $(t_d - t_{mv}) / (1 - t_{mv})$ will decrease, weakening the impact of the dividend yield on the expected return before taxes.

3.2. THE PORTUGUESE TAXATION OF DIVIDENDS AND CAPITAL GAINS

In 1989, an important income tax reform was implemented in Portugal, which remains unaltered in its main aspects, until today. From that year on, the income of individuals and firms became taxed in its globality, through two taxes - IRS and IRC, respectively - that replaced several parcial taxes on income.

In the Tax Benefits Law of 1989, several exemptions and fiscal reductions were introduced in stocks' taxation and other financial market instruments, with the purpose of stimulating savings and the development of the financial markets.

The dividends received by individuals are taxed at 25%. This tax, exempts the individuals from any further fiscal duty, however, the individual has the possibility to choose to include the received dividend in its global income, which will be subject to the progressive general tax brackets of the IRS.

There are two reasons why the investor might prefer to declare the dividends as a part of his annual income. The first reason is straightforward: if his income tax bracket is less than 25%, he will pay less taxes on dividends this way. But even if this is not the case, there is a second reason for declaring dividends included in the annual income: in these circumstances, the law allows a partial reduction of the double taxation of dividends¹, through a tax credit that is deductible from the payable IRS. This tax credit is a percentage of the IRC paid by the firm on distributed profits, and it has risen steadily from 20% (1989 and 1990) to 35% (1991 and 1992), to 50% (1993 and 1994) reaching the present level of 60% (starting from 1995).

This tax credit makes it always worthwhile to include the dividend in the annual income, even for investor in the highest income tax bracket. But there are tax benefits on some type of stocks, that might complicate things a bit.

With the approval of the Tax Benefits Law, the taxation only applied on 80% of the amount of the dividend for the firms quoted in the stock market, and on 60% of the dividend for privatised firms. In 1994, these percentages where changed to 50%, for both these two types of stocks. Since 1995, only 25% of the dividend of privatised firms was taxed.

The effect of these tax benefits was that the option of declaring dividends as part of the annual income became less and less attractive, and the tax bracket level for which is became preferable not to declare dividends became increasaingly higher, for these two types of stocks.

Firms receiving dividends have to declare them as part of their net result, and are subject to the IRC tax, which is not progressive.

The IRC law also allows for a correction of the double taxation of dividends. If the receiving firm as held more than 25% of the shares of the dividend-paying firm for more than two years, than it is allowed to deduct from its profit 95% of the dividends received, thus pratically nullifying the taxation on dividends. If these conditions are

¹ The double taxation results from the dividends being taxed first as profits of the firm, and second, as income from the stockholder that has received them.

not met, the dividend-receiving firm will still benefit from a partial tax credit calculated on the IRC supported by the dividend-paying firm.

Some types of firms, like holding companies, risk capital companies, regional development companies, brokers and others can always deduct 95% of the received dividends, without any restriction.

There is still the case of economic groups. In the cases where consolidated accounts are allowed by law, there is no taxation on received dividends from participated companies.

In what respects the taxation of capital gains:

- The tax rate is 10%;
- If the stocks are held for more than one year, the capital gains are not taxed;
- In the years 1990 and 1991, the investors would have to hold the stock at least two years, to be exempt of the capital gains tax.

3.3. EMPIRICAL WORK AND ANALYSIS OF THE RESULTS

The empirical analysis of the clientele effect only makes sense if the market reacts to the differential taxation of dividends and capital gains, so it is first necessary to detect the existence of that fiscal effect.

3.3.1. THE FISCAL EFFECT

The database used in the empirical tests was constructed with stock prices and distributed dividends, in an annual basis, for the years 1990 to 1999, of all the firms quoted at the Official Quotations Market of the Lisbon Stock Exchange. The stocks with less liquidity were removed from the sample, resulting in 446 observations from 121 firms.

The first step of our empirical study was to calculate the following statistic, that we define as the fiscal effect statistic:

$$FE = \frac{P_{an} - P_{ap}}{D} \quad (7)$$

- P_{an} = stock price on the ex-ante day²;
 P_{ap} = stock price on the ex-post day;
 D = gross dividend;

A possibility that should be admitted is that the use of closing prices may introduce a bias in the statistic, because the price variations between the ex ante-day and the end of the ex post-day, may partly be attributed to systematic variations in the market

² “Ex ante-day” is used to identify the date of the last Stock Exchange session where the stock was transaccioned, with the right to receive the dividend. “Ex post-day” refers to the date of the first Stock Exchange session where the stock was transaccioned, without the dividend.

prices, or to other specific factors with impact in the firm value, and thus, they do not result only of the adjustment due to the distributed dividend.

This bias could be even more significant, considering that:

- in the period from 1992 to March, 24th, 1997, the stock transactions were suspended during the four stock exchange sessions prior to the day of the dividend distribution, which means that between the ex ante-day and the ex post-day, there was always a difference of at least four calendar days;
- in spite of a previous filtering of the observations, based on a criterion of minimum liquidity, some of the stock included in the sample presented liquidity levels that could still come to reveal as being excessively reduced, reflected on the fact that some stocks remained untransacted for several days surrounding the dividend day.

To correct the potential bias introduced by the normal trend of the market³, the ratio (7) was also calculated with an adjustment on the closing price of the ex post-day:

$$FE_{corrig} = \frac{P_{an} - \left(P_{ap} \frac{IM_{an}}{IM_{ap}} \right)}{D} \quad (8)$$

where,

IM_{an} = stock market index⁴ on the ex ante-day;

IM_{ap} = stock market index on the ex post-day;

The possibility that the stock with reduced liquidity could distort the global results, was controlled by another statistic (FE_4), calculated for a subsample of 174 observations (which we will refer to as the restricted sample), constituted by the observations where the difference between the ex ante-day and the ex post-day didn't exceed four calendar days. The formula for this statistic is equal to the formula of FE_{corr} .

Table I presents some descriptive statistics of FE , FE_{corr} and FE_4 :

Table I – Descriptive Statistics

	FE	FE_{corr}	FE_4
Mean (\bar{x})	0.6123	0.6583	0.4261
Standard Error of Mean ($s\sqrt{n}$)	0.1014	0.1014	0.1403
Standard Deviation of Sample (s)	2.1415	2.1420	1.8508
Minimum	-12.55	-12.4451	-7.1218
Maximum	23.65	21.5755	13.5244
Number of observations (n)	446	446	174

³ A similar correction was proposal by Kalay (1982).

² The market index used for this adjustment was the BVL Geral, chosen for its representativeness of the general trend of the market. The use of this index, instead of any other, won't affect significantly the results, given the high correlation degree that exist among the main indexes.

The mean of FE_{corr} is 0.6583, which signifies that the mean adjustment in the stock price, after a dividend distribution, is less than the dividend value. For the restricted sample, the mean price adjustment is still more reduced (0.4261). The obtained value for the FE_4 statistic, is compatible with the theoretical interpretation of the existence of a fiscal effect unfavorable to the dividends.

It is possible that other factors, like short term arbitrage and transaction costs, can influence the price adjustment on the dividend day, but other types of tests also confirm that there is a fiscal effect present, linked to the different taxation of dividends and capital gains. We will now turn for the problem of the clientele effect.

3.3.2. THE CLIENTELE EFFECT

As we have seen, in the absence of transaction costs, the FE statistic can be used to infer the dividend taxes of marginal investors. This fact, together with the existence of a clientele effect, which is based on the idea that when the marginal income tax of the investor is higher, he will be less interested in holding high dividend yield stocks preferring instead to hold stocks where returns come from capital gains, should allow us to observe a positive relationship between the degree of price adjustment and the dividend yield. In stocks with higher dividend yields, the FE statistic should be closer to 1, or even above 1. This could happen when the taxation of dividends is more favorable than the taxation of capital gains, for example, in stocks with fiscal benefits, like stocks of recently privatised firms.

This analysis is based on the approach of Elton and Gruber (1970). The observations were ordered by dividend yields, and grouped by deciles. For each decile, the means of the dividend yields and of the FE values were calculated. In coherence with the theory, we would expect to find a positive correlation between the two variables. The results are summarized in Table II.

Table II - Deciles ordered by dividend yield

Deciles	Mean Dividend Yield (base sample)	Mean Dividend Yield (restricted sample)	FE		FE_{corr}		FE_4	
			Mean	Ranking	Mean	Ranking	Mean	Ranking
1	0.0092	0.0079	0.9290	9	0.8272	8	0.4213	5
2	0.0145	0.0127	0.6229	7	0.6762	7	0.6274	8
3	0.0185	0.0162	0.6145	6	0.6416	5	-0.1185	1
4	0.0224	0.0194	1.0371	10	1.0596	10	0.8641	10
5	0.0265	0.0234	0.4042	3	0.4783	3	0.4906	7
6	0.0315	0.0268	0.7970	8	0.9567	9	0.6797	9
7	0.0367	0.0309	0.3767	2	0.4179	2	0.4416	6
8	0.0412	0.0368	0.2014	1	0.2695	1	0.2922	3
9	0.0560	0.0436	0.5304	4	0.5811	4	0.2328	2
10	0.0806	0.0649	0.6992	5	0.6761	6	0.3482	4
Spearman correlation			-0.612		-0.467		-0.3091	
<i>t</i> -test			2.189		1.492		0.9193	
Significancy level			3%		9%		19%	

We can observe that, for any three statistics, there is an inversion of the expected relationship with the mean dividend yield. Although the Spearman correlation coefficients are different for the three statistics, they all allow the same conclusions, that is, as the mean dividend yield increases, the mean price adjustment relative to the dividend becomes lower. This negative correlation is milder for the statistic corrected by the market index and for the restricted sample, where it becomes not significantly different from zero.

The existence of a clientele effect as defined, should also make it possible to detect a positive relationship between the degree of price adjustment and the payout ratio. We have repeated the procedures used for the previous test, using the same samples, but now ordered by payout ratio and grouped by deciles of this variable. The results are presented in the Table III.

Table III - Deciles ordered by payout ratio

Deciles	Mean Payout ratio (base sample)	Mean Payout ratio (restricted sample)	FE		FE_{corr}		FE_4	
			Mean	Ranking	Mean	Ranking	Mean	Ranking
1	0.1619	0.1696	1.6201	10	1.5817	10	0.6016	6
2	0.2476	0.2407	0.2581	2	0.1190	1	-0.3802	1
3	0.3158	0.3129	0.8788	9	0.9590	9	0.8055	10
4	0.3693	0.3631	0.4719	3	0.3105	3	0.0494	2
5	0.4268	0.4179	0.6879	6	0.8766	8	0.7296	7
6	0.4765	0.4626	0.7591	7	0.8459	6	0.7787	8
7	0.5188	0.4951	0.5569	4	0.6537	4	0.7815	9
8	0.5738	0.5577	0.5839	5	0.7226	5	0.3034	3
9	0.7197	0.6814	0.0741	1	0.1948	2	0.4446	4
10	1.7183	2.5585	0.7802	8	0.8486	7	0.5117	5
Spearman correlation			-0.2485		-0.2364		-0.0061	
<i>t</i> -test			0.7256		0.6880		0.0171	
Significancy level			76%		75%		51%	

Once again, the sign of the correlation is opposite of the expected, but in this case it is not statistically different from 0. In the restricted sample, no correlation was detected between the two variables.

In sum, we have found that when the mean dividend yield and the mean payout ratio increase, the FE statistic tends to decrease, although this relationship is not significant in most of the used samples. This inverse relationship contradicts the implications of the clientele effect theory, because investors subject to a relatively more unfavorable taxation of dividends would be those preferring the higher dividend yield stocks. This can hardly be considered rational behavior. The conclusion is that the results obtained with the portuguese data are not compatible with the clientele effect theory, if we believe that the dividend taxation is, on average, higher than the capital gains taxation.

4. CONCLUSIONS AND FINAL REMARKS

The tests carried out for the identification of a clientele effect linked to the dividend, in the Portuguese market, led us to results that are in contradiction with what was theoretically expected. In both approaches, based on the dividend yield and on the payout ratio, the Spearman correlation coefficient with the *FE* statistics resulted negative, although in most of the cases this correlation was found not to be statistically different from 0.

An interpretation of the detected negative correlation might be that in the firms with higher dividend yields and payout ratios we would tend to find the investors with higher dividend taxation. As this is not consistent with rational behavior from those investors, it seems obvious that we cannot consider the partial adjustment of prices as evidence of a clientele effect linked to the investor's fiscal framing.

We argue that part of the explanation for the inexistence of this clientele effect comes from the specificities of the Portuguese tax laws on dividends and capital gains.

If individuals choose not to declare dividends as part of their income, they will be subject to a liberating tax that is the same for all individuals (it is not progressive). This tax can only change if there are fiscal benefits linked to the stock, for example, if it is quoted in the stock market or if it is a quoted privatised firm. In this situation, the level of taxation depends on the characteristics of the stock and not on the characteristics of the investor. As the level of personal income taxation of each investor is not a relevant variable for the problem, we should not expect to find this type of clientele effect in individual investors.

For institutional investors and firms, the dividends have to be included in the calculation of profits, and the IRC tax is also the same for all investors. For these types of investors, we should not also expect to find a clientele effect, as defined above.

Of course, this also means that the possibility of inferring the marginal investors' income tax is not possible.

However, this argument cannot explain the weak negative correlation detected between the degree of price adjustment and the dividend yield. We suggest that this may be the consequence of a market anomaly, namely, that there is an insufficient price adjustment on the ex-dividend day. For high dividend yield stocks, the price adjustment necessary to assure arbitrage equilibrium is also higher. An incapacity of the market to impose the equilibrium conditions, will probably be more acute in the stocks where the relative price adjustment has to be higher. Thus, the degree of price adjustment relative to the dividend would tend to be lower, in high dividend yield stocks.

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