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HOW DO DIVIDEND PAYMENTS AFFECT STOCK PRICES? THE CASE OF TUNISIAN FIRMS

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Abstract

The main goal of this paper is to investigate the impact of dividend payments on common stock prices using a panel of listed firms in Tunis Stock Exchange for a period from 2000 to 2008. Our empirical investigations reveal that Tunisian investors reward firms paying cash dividends. This result is very interesting because it begs the question on the intention of Tunisian managers to pay dividend when investors put a stock price premium on payers as the catering theory suggests.

Keywords: Catering theory, dividend policy, panel data

INTRODUCTION

In efficient and perfect market, Modigliani and Miller (1961) have demonstrated that there is no difference between the value of the firm paying dividends and that of nonpayer. Baker and Wurgler (2004a) argue that the investor demand for dividend-paying stocks depends on either psychological or institutional factors. They argue that managers tend to pay dividends when investors put higher prices on payers, and they omit dividends when payers are at a discount. Baker and Wurgler (2004a) suggest that this catering behavior explains the difference documented between the average market-to-book ratios of payers and non-payers and that managers rationally initiate dividends to exploit an apparent market mispricing. They find that when the rate of dividend initiation increases, the future stock returns of payers are lower than those of non-payers. This result supports the hypothesis that firms initiate dividends when the payers are overvalued. In this paper, we attempt to investigate whether cash dividend payments affect positively share prices.

The remainder of the paper is organized as follows. Section 2 reviews the literature on dividend payout policy. Section 3 provides a description of the data used in the empirical analysis and presents regression results for the determinants of stock prices. Section 4 concludes.

LITERATURE REVIEW

Baker and Wurgler (2004b) show that the disappearance of dividends can be explained by lower market valuations of payers during such periods. They find that the propensity to pay increases when a proxy for the stock market dividend premium is positive and decreases when it is negative. These empirical results suggest that the distribution of dividends responds to patterns of market timing. Companies pay dividends in order to raise the stock prices of their shares above their fundamental values. However, we wonder why the demand for shares paying dividends changes over time? Baker et al. (2007) argue that this time-varying can be attributed to changes in income tax rates of shareholders. Baker and Wurgler (2004a) note that the increase in the value of a company paying dividends reflects the risk assessment by investors. Indeed, dividend-paying firms are considered less risky than non-payers ones since this dividend premium disappears in periods of expansion and reappears in recession periods. Thus, investors who prefer cash dividend payments during gloomy period as an indicator of the firm's safety and therefore are more willing to pay dearly to buy dividend-paying stocks.

Ferris et al. (2006) conclude that the decline of the number of dividend-paying firms in UK can be explained by a shift in catering incentives. Li and Lie (2006) suggest that changes in corporate payout ratios of US firms depend on the market dividend premium. Ferris et al. (2008) find that investors place high value on dividend-paying firms.

By contrast, Eije and Megginson (2008) investigate dividend policies in fifteen European countries over the period 1989-2003 and conclude that their findings do not support the catering hypothesis. Denis and Osobov (2008) find that reductions in the percent of dividend-paying stocks occur in countries where the dividend premium is largely positive. Tsuji (2010) finds that Japanese corporate managers do not cater to

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investors in either their dividend initiation decisions or their continuation decisions.

DATA AND METHODOLOGY

To form our main Tunisian sample, we start with all listed firms appearing at any point between 2000 and 2008. We restrict the sample to exclude financial firms[2]. The final sample covers 24 publicly traded Tunisian firms. Data were collected from Tunis Stock Exchange and completed from firms' web sites.

3.1 Definition and measurement of variables

The evolution of stock prices can be explained by variables specific to the firm such as cash dividend and profitability, by macroeconomic variables such as interest rates and inflation, and a variable which reflects the stock market performance.

3.1.1 Dividends

According to the model of Gordon and Shapiro (1956), the current stock price equals the present value of its future dividends. Gordon and Shapiro assume that the dividend is a constant fraction of the profits carried out by the company. The expected receipt of dividend income is an incentive for investing in a given stock, particularly if the yield on the investment exceeds the return offered on other alternative investments like savings accounts. Investors may pay a premium for shares in issue. Tsoukalas and Sil (1999) find a strong correlation between the stock prices and dividends paid by U.K firms.

3.1.2 Profitability

An improvement in profitability leads to an increase in stock price because investors become more optimistic about future performance of the firm. Demand increases for the shares that have a high prospect for growth (blue chip shares). Prices of such shares rise much faster than those of companies whose growth prospects are bleak. Vuolteenaho (2002) finds that firm-level stock returns are mainly driven by cash-flow news. By contrast, Kothari et al. (2006) show that stock prices are unrelated to past earnings and depend negatively on concurrent earnings.

In this paper, Profitability $PROF$ is defined as earnings before interests and tax $(EBIT)$ reported to total assets.

3.1.3 Inflation

The impact of inflation on the stock price is not obvious. If households expect higher prices, they can increase their consumption and therefore reduce their savings. This behavior will lower stock prices. By contrast, if households choose to keep the value of their heritage, they will be more likely to invest in shares in order to hedge against a rise in the general level of prices of goods and services. Indeed, inflation erodes the purchasing power of money and other financial assets that have fixed values. Therefore, if households have a hedging purpose, inflation will have positive effects on share prices.

Alagidede and Panagiotidid (2010) provide evidence of a positive long-run relationship between stock prices and inflation in five African countries (Tunisia, Egypt, South Africa, Kenya, and Nigeria) and they conclude that common stocks in these countries represent a hedge against rising consumer price.

Geyser and Lowies (2001) examine the relationship between share prices and inflation within a sample of firms listed in Namibian and Johannesburg Stock Exchanges. Their findings reveal a strong positive correlation between inflation and stock prices of Namibian firms. In South Africa, companies belonging to the mining sector cannot be served as an inflation hedge since stock prices of these firms are negatively correlated with the evolution of the Consumer Price Index, whereas stock prices of firms in other sectors (financial services, information technology and food and beverage) are slightly positively correlated with inflation.

Bodie (1976) finds that in the U.S during the period from 1953 to 1971 common stocks failed to serve as hedges against either anticipated or unanticipated inflation.

The inflation rate is defined as the percentage rate of change in consumer price index.

3.1.4 Interest rate

The impact of changes in interest rates on stock prices is mixed. If rates rise, bonds become less expensive which encourages shareholders to arbitrate for bonds by selling shares that they hold and therefore stock prices fall. By contrast, a significant decrease of interest rate makes shares more profitable and persuades investors to buy back equity and pushing up prices. Cifter and Ozun (2008) find that stock prices in Turkey are negatively affected by the interest rate changes.

[2] We restrict our study to non-financial firms because financial ones have their own specificity.

INTEREST represents the money market annual average rate for Tunisia.

3.1.5 Stock market performance

A bull market is characterized by higher valorizations and a bear market is characterized by lower stock prices. In this paper, we used annual return rate of the index *TUNINDEX* to measure the performance of Tunisian stock market.

3.2 Descriptive statistics

Table 1 reports descriptive statistics for the dependant and explanatory variables. We note the higher level of the money market annual average rate that can be explained by the important rising consumer price Tunisia. The mean of the natural logarithm of dividend is negative suggesting that Tunisian firms pay annually on average less than 1 TND as cash dividend.

INSERT TABLE-1 HERE

Table 2 reports the correlations matrix for explanatory variables. The coefficients of correlation of explanatory variables are generally low. Using a test of Farrar-Glauber (1967), we can accept the hypothesis of the absence of multicollinearity among our independent variables.

INSERT TABLE-2 HERE

3.3 Estimation methods

The study was conducted on panel data. Using panel data can enhance the quality and quantity of data. It allows us to identify some effects that cannot be detected using time-series analysis. Panel data regression provides three estimators; pooled OLS, fixed effects, and random effects models. A pooled estimator takes α as the same across all cross-section units. The fixed effects model assumes α_i as a group specific term. The random effects approach takes α_i as a group specific disturbance.

Testing the significance of the group effects

To choose between these three approaches we compute a test of homogeneity. The hypothesis of homogeneity of constants across all cross-section units can be formulated as follows:

$H_0 : \alpha_i = \alpha$

$H_a : \alpha_i \neq \alpha$

This test of Fisher is computed as follows:

$$F = \frac{SS_P - SS_W}{SS_W} \frac{N(T-1) - K}{(N-1)}$$

Where:

SS_W: Residues square sum of the individual effects model

SS_P: Residues square sum of the model Pooled.

N : Number of firms

K: Number of explanatory variables (constant not included)

If calculated *F* is lower than tabulated *F (p-value < 0.05)*, H_0 is rejected and we have to choose between the fixed and the random effects model.

Hausman's test for fixed versus random effects

If the effect is assumed to be individual, the Hausman specification test is carried out in order to decide whether the fixed or the random effects model should be used. The Hausman test compares the fixed and random effects estimates of coefficients.

The tested hypothesis concerns the correlation of the individual effects and the explanatory variables.

$H_0 : \text{cov}(\alpha_i, x_{it}) = 0$
$H_1 : \text{cov}(\alpha_i, x_{it}) \neq 0$

Under the null hypothesis, the individual effects are random and we then have to choose the estimator of GLS. Under the alternative hypothesis, the individual effects are correlated to the explanatory variables and we then have to choose the model to fixed effects.

The test of Hausman compares the matrix of variance-covariance of two estimators:

$$H = \left(\hat{\beta}_{RE} - \hat{\beta}_{FE}\right)' \left[\text{var}\left(\hat{\beta}_{RE} - \hat{\beta}_{FE}\right)\right]^{-1} \left(\hat{\beta}_{RE} - \hat{\beta}_{FE}\right)$$

The statistic *H* is asymptotically distributed as χ^2 with *K* degree of freedom, where *K* is the number of explanatory variables. If calculated *H* is lower than tabulated χ^2 *(p-value < 0.05)*, H_0 is rejected and individual effects are assumed fixed.

3.4 Findings

Table 3 reports regression results. We provide Pooled OLS, fixed effects and random effects results. The Hausman's test confirms that the estimator fixed effects is the proper one.

INSERT TABLE-3 HERE

Cash dividends have a significantly positive impact on stock prices of Tunisian firms. This

result indicates that Tunisian investors reward cash dividend-paying firms by adding a positive premium to their shares prices.

The profitability has a positive impact on stock prices. Highly profitable firms have higher stock prices. If the firm releases new positive results, investors will be more optimistic about its prospects and expected future cash flows and therefore they will be willing to pay dearly to buy its securities.

The variable *MARKET* that measures the performance of Tunis stock exchange presents the expected sign. This result indicates that stock prices follow the overall trend of the market.

Inflation affects negatively and significantly stock prices suggesting that common stocks of Tunisian firms cannot provide a hedge against inflation. The plausible explication for this result is that an increase of the consumer price index reduces the marginal propensity to save. Our result confirms findings in Geske and Roll (1983).

CONCLUSION

This paper investigates the impact of cash dividend payments on stock prices of listed non-financial Tunisian firms. Our empirical results reveal that Tunisian investors reward cash dividend-paying stocks. This finding begs the question on the existence of a catering behavior as suggested by Baker and Wurgler (2004a). Future academic studies with larger datasets should investigate whether Tunisian firms behave according to the prediction of the catering theory by comparing the value of payers and non-payers firms.

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Table1. Descriptive statistics

	Price	*Dividend*	*Prof*	*Tunindex*	*TMM*	*Inflation*
Mean	2.8594	-0.1790	0.0750	0.1012	0.0538	0.0328
Median	2.7279	-0.2877	0.0821	0.1107	0.0526	0.0300
Maximum	5.3566	2.3514	0.2057	0.3669	0.0594	0.0500
Minimum	0.2927	-2.9957	-0.0879	-0.1299	0.0500	0.0200
Std. Dev.	1.1597	1.1282	0.0519	0.1498	0.0037	0.0094
Observations	135	135	135	135	135	135
Cross sections	24	24	24	24	24	24

Table 2. Correlation matrix for explanatory variables

	Dividend	*Prof*	*Tunindex*	*TMM*	*Inflation*
Dividend	1				
Prof	0.2362	1			
Tunindex	-0.1032	-0.0259	1		
TMM	0.1481	0.0866	-0.4800	1	
Inflation	-0.2452	0.0327	0.2712	-0.1425	1

Table 3. Cash dividend effects on share prices

	Pooled	***Fixed effects***	*Random effects*
Intercept	1.896**	**1.5962****	1.7388**
	(2.14)	**(2.04)**	(2.28)
Dividend	0.813***	**0.4641*****	0.7377***
	(17.22)	**(6.49)**	(15.52)
PROF	4.0286***	**4.0761*****	4.0422***
	(3.96)	**(2.99)**	(4.19)
Market	1.0322**	**1.0417****	1.0337***
	(2.56)	**(2.96)**	(2.99)
TMM	18.4855	**22.9547***	21.1915
	(1.15)	**(1.59)**	(1.53)
Inflation	-8.927*	**-9.1631***	-9.5153*
	(-1.55)	**(-1.78)**	(-1.91)
R Squared	0.7614	**0.8591**	0.6855
Adjusted R Squared	0.7522	**0.8219**	0.6733
p – Fisher		**0.0000**	
p – Chi – Square		**0.0000**	
p – Hausman			0.0000
Observations	135	**135**	135
Cross-sections	24	**24**	24