Dividend Pay-out Policy and Share Price: A Atudy of Listed Firms in Morocco

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Abstract

The main purpose of this study is to examine the relationship between dividend policy and financial performance in Morocco stock market. The panel data regression method is used to analyze the relationship of share price with dividend per share. This study presumes that dividend policy has an effect on the share price in Morocco. Also, it assumes that companies that pay dividends tend to have a higher financial performance than those that do not. On the other hand, companies that do not distribute dividends are more indebted and have a smaller size compared to distributors. The results of the econometric analysis conducted indicate that the dividends distributed and the profits are found to be significantly positive for the financial performance of Moroccan companies.

Keywords: Dividend Policy; panel data; financial performance; dividend; business finance

Introduction

Dividend policy is one of the most debated topics in corporate finance. Moreover, many researchers have tried to find the missing pieces of this

enigma as described by Black (1976). From another perspective, the dividend payout controversy is one of the top ten thorny issues in corporate finance (Brealey, Myers, & Allen, 2008). We must reconsider more advanced researches pushed in this field in order to improve the perception of this subject. In the same perspective, Modigliani and Miller (1961) presented a relevant argument on the impact of dividends on the value of the company. They show that whether or not a company pays a dividend does not affect its value; under the strict assumption that all investors are rational and markets are perfect. They reveal that the value of the firm is determined solely by the earning capacity of its assets. However, contradictory opinions have been expressed, indicating that the dividend policy has a positive effect on the value of companies. Proponents of this postulate Gordon (1963) and Lintner (1962) indicate that investors prefer high dividends to counter market imperfections (asymmetry of information and certainty). The theory developed by these authors suggests that shareholders - having an aversion to risk - prefer to receive cash dividends than to expect higher dividends in the long term.

Many researchers have focused on different types of market imperfections to explain why dividends are important in driving businesses. Arguments explain that the payment of dividends vary from one theorist to another. Among the most advanced arguments is the tax preference argument. According to this argument, investors enjoy favorable tax treatment on capital gains. This type of investor prefers companies that pay low dividends. This position contradicts that defended by Lintner and Gordon. Other explanations deal with the adversarial nature of the relationship between shareholders and managers; this is agency theory. In accordance with this theory, the interests of shareholders and managers diverge, hence the use of the dividend as a means of controlling them. This control is manifested by the reduction in liquid assets made available to managers (Rozeff (1982), Easterbrook (1984), Jensen (1986)). Still in the sequence of explanations relating to the imperfection of the market is projected the theory of signal. The contribution of the latter stipulates that dividends serve to communicate information to shareholders and other market participants (Bhattacharya (1979), John and Williams (1985).

Theories dealing with dividend policy have accompanied the evolution of the business environment. In this sense, we are witnessing the appearance of fairly recent theories (the theory of "catering" and the theory of the life cycle of the company and distribution) which deal with the subject. The first theory states that companies can adjust dividend policy over time to meet personal investor demand. If managers respond to investor demand, they will initiate or continue to pay dividends when investors prefer dividends, but fail to pay dividends when investors do not demand them (Baker & Wurgler, 2004b). According to the second theory, the optimal dividend distribution policy

depends on both the evolution of companies' investment opportunities and the amount of internal funds retained (De Angelo et al., 2006). A young company faces a relatively large set of investment opportunities, but is not profitable enough to meet all of its financing needs with its own cash. In addition, it faces an array of hurdles in raising capital from external sources. As a result, the company will conserve its cash by foregoing the distribution of dividends to shareholders. Once the company reaches the maturity phase; the opportunities for its investments are reduced. Therefore, the company starts paying dividends to distribute its profits to the shareholders.

The theoretical context of dividend policy is rich by scientific production that clarifies the notion of performance and its link with the decision relating to the distribution of dividends. However, this subject arouses less interest in the countries of North Africa and even less in Morocco. Through this study, we will first try to understand and analyze theoretically and empirically the decisions relating to corporate dividends in Morocco. Secondly, we will seek to know if there is a link between these decisions and the financial performance of companies.

1. Literature review and formulation of hypothesis
1.1. Financial performance

Performance is at the center of the concerns of all companies. It can be presented as the action report. What makes this notion complex is the fact that it is assessed from several sides: economic, commercial, financial and social performance, etc. Thus, the existence of so many proposed conceptual models of performance allows each stakeholder to approach it as they see fit. It remains that this term is often surrounded by a semantic vagueness. In management, the word performance is declined in various ways. Thus, we will speak of the financial performance of a company measured by a certain number of ratios (ECOSIP, 1999). These indicators will be used to rank firms against each other.

It is interesting to point out that in the range of studies carried out until now on the link between financial performance and the dividend policy, we notice a great diversity of performance indicators (rate of return, share price, Tobin's Q, M/B, Earning per share, EBIT etc). In this study we use the share price to measure the financial performance of the company.

1.2. The dividend policy

Finance theories offer different perspectives on the relationship between dividend policy and firm performance, while empirical results are often divided into two perspectives; neutrality and non-neutrality of dividends. Modigliani and Miller's dividend neutrality proposition finds that firm value as a determinant of financial performance is not influenced by dividend policy

in a perfect market. Studies by Peter (1996), Fersio et al. (2004), Geary and Moser (2004) support the neutrality thesis of the dividend policy. However, previous studies support the dividend non-neutrality hypothesis of Gordon (1962) and Lintner (1956) who state that dividend decisions are an active variable that can influence firm performance (e.g. : Asquith and Mullins (1983), Anand (2004), Amidu (2007), Al-Malkawi (2007) Ji-ming et al., (2009), Stiriba (2013) and M'rabet and Boujjat (2016)…) .

1.3.   The debt policy

Indebtedness is another variable that has been widely used in later studies. A large number of studies have been conducted in various countries and sectors to assess the impact of debt on the financial performance of the company. However, there is no general consensus for a specific country or for a specific industry. For example, Laurent (2002) tests the relationship between these two variables in France, Germany and Italy. The study found mixed evidence by country; although significantly negative in Italy, the relationship between indebtedness and firm performance is significantly positive in France and Germany. According to Jensen (1986), debt financing increases the pressure on managers because it reduces the free cash flow available to them. Therefore, companies with the highest debt ratio should have the most incentive to improve their performance. However, according to Jensen & Meckling (1976), a higher debt ratio means higher agency costs due to divergent interests between shareholders and bondholders. So, it can be suggested that leverage may be negatively related to performance.

1.4.   The profits made by the company

Profits are used as indicators of the profitability and efficiency of running a business. In this study, earnings will be measured by annual earnings per share for comparability purposes. Empirical studies suggest that earnings per share is one of the strongest factors affecting share price. The pioneers of studies on the determinants of stock prices were Collins (1957) and Gordon (1959). In their independent studies, the two identified profits as one of the factors influencing the course of action. In view of the above, we assume that there is a significant relationship between the share price and the profits made by Moroccan companies.

In light of the literature review on this topic, key explanatory variables have been identified as determinants of dividend policy: current and future earnings, leverage, stock price behavior, company size, industry and life cycle of the company.

Based on the analysis of our literature review, we formulated the following hypothesis.

Hypothesis 1: There is a significant relationship between financial performance and the distribution of dividends.

Hypothesis 2: Debt has a negative effect on corporate financial performance.

Hypothesis 3: There is a significant relationship between financial performance and profits earned by the firm.

2.   Research methodology and data

To test the above hypothesis and study the impact of dividend policy on the financial performance of companies listed on the Casablanca Stock Exchange, the study undertook empirical tests of the following variables:

- Financial performance was measured by share price. The latter is the price of a security which, at a given time, maximizes the number of securities traded. In the stock market, the price of stocks is ultimately determined by the interactions of the forces of demand and supply.

- The dividend policy measured by the dividend per share. DPS is the total amount of dividend allocated to each outstanding share of a company. The dividend per share is an important metric for investors because it gives them insight into how much income they could generate by investing in a particular company.

- The debt policy was apprehended through the debt ratio. This ratio was calculated manually since the measure was not available in official data or in annual reports. However, most companies include some form of debt ratio in their annual reports, but the variables included in the ratio vary differently from company to company. In our study, indebtedness is measured by the financial debt/equity ratio.

- The profits made by the company have been measured by earnings per share. The latter is the amount of outstanding earnings per share of each share of a company. Table 1 provides the definitions of all the variables used in our analysis.

Table 1. Unit measurement

Variables	Codification	Unit measurement
Financial performance	CA	Share Price
Dividend Policy	DPA	Dividend per share
Profits	BPA	Earning per share
The debt policy	EN	financial debt/equity ratio

Source : Authors

The econometric model to be tested for this link is as follows:
$$CA_{it} = \beta_0 + \beta_1 DPA + \beta_2 EN + \beta_{3_{it}} BPA + \varepsilon$$

3.   Data, descriptive statistics and preliminary analyzes
The empirical data relating to the study correspond to those collected from the companies listed on the stock exchange subject of the study, their processing is done through the use of the statistical software STATA 13.

3.1.   Period and data collection
Our sample consists of 43 listed Moroccan companies. The period of the study extends from 2008 until 2016. This sample is in line with previous studies.

3.2.   Descriptive statistics of the model variables
The sample companies in this model are classified into distributors and non-distributors of dividends for each year, during the study period. A total of 387 observations were analyzed over the 108 months of the study. Of this total amount, 63 of the observations were found to be non-dividend paying and the other 324 to be dividend paying.

Table 2. Dividend payment trend during the period 2008-2016 for Casablanca Stock Market

Years	Non-dividend distributors		Dividend distributors	
	Number of firms	Total number	Number of firms	Total number
2008	4	9	39	91
2009	4	9	39	91
2010	6	14	37	86
2011	12	28	31	72
2012	7	16	36	84
2013	5	12	38	88
2014	5	12	38	88
2015	7	16	36	84
2016	13	30	30	70

Source : compiled from our database

In the light of the data given in the table above, we note that the number of companies having paid dividends during the study period had shown stagnation until 2009, and then it had decreased thereafter. This can be explained, among other things, by the overall less favorable economic activity that characterized the 2009-2011 period. Thus, after 2012, it experienced a constant decrease reaching 4% in 2013 and 2014. The total number of non-distributors of dividends fell from 4 in 2008 to 12 in 2011, then to 13 in 2016. The increase in the number of companies that do not distribute dividends can be explained by the poor performance of the Moroccan stock market which is part of an unfavorable macroeconomic context.

Below are the descriptive statistics of the financial performance of the companies selected in our sample.

Table 3. Descriptive statistics of the financial performance of all companies distributing and not distributing dividends

The financial performance of dividend distributors

	Min	Max	Standard Deviation	Average	Median
2008	17,10	6 450,00	1 131,36	842,04	489,00
2009	17,98	10 490,00	1 701,74	1 035,08	612,00
2010	20,98	12 550,00	2 039,60	1 131,05	540,00
2011	17,94	3 790,00	864,19	872,46	640,50
2012	17,48	3 690,00	814,76	729,66	278,45
2013	18,40	3 660,00	792,66	687,45	330,00
2014	19,00	3 100,00	730,90	686,92	348,55
2015	18,50	2 550,00	698,55	676,20	399,50
2016	20,95	2 950,00	928,24	954,78	609,55
All years	18,70	5 470,00	1 078,00	846,18	471,95

Financial performance of non-dividend distributors

	Min	Max	Standard Deviation	Average	Median
2008	203,25	1 180,00	444,86	529,76	367,90
2009	193,90	501,00	137,67	298,70	249,95
2010	247,95	1 800,00	647,26	747,36	433,00
2011	36,12	1 920,00	568,83	479,47	293,50
2012	117,90	1 019,00	314,84	314,33	193,65
2013	117,00	1 450,00	580,83	412,60	166,00
2014	147,00	1 450,00	558,31	454,73	206,90
2015	24,99	420,00	129,78	137,84	100,00
2016	22,30	1 340,00	341,80	263,47	130,00
All Years	123,38	1 231,11	413,80	404,25	237,88

Source **:** compiled from our database

The table 3 shows the descriptive statistics of the financial performance of companies listed on the Casablanca stock market. Over the 9 years of study, the share prices of companies distributing dividends vary between 18.70 and 5470 dhs. While, the share prices of non-distributors evolve between 123.83 and 1231.11dhs. The analysis of this indicator shows that distributing companies have on average a higher financial performance than non-distributing companies. For the study period 2008-2016, the share price for all distributors is on average 846.18 against 404.25 for non-distributors. Both groups regardless of distributors or non-distributors showed fluctuations in financial performance during the sample period. But, the non-distributors showed considerable fluctuations during the sampling period particularly in 2009 and 2015. In total, the two groups showed a downward trend during the intervening years or, as during the last year of the study period, they showed an increase.

Table 4. Descriptive statistics of the model variables
Panel 1. Descriptive statistics of non-dividend distributors

Variable	Obs	Mean	Std. Dev.	Min	Max
CA	63	388.5494	452.3955	22.3	1920
DPA	63	0	0	0	0
BPA	63	.7878313	27.86865	-69.25474	119.3255
EN	63	42.01751	67.53501	0	229.4116
TAILLE	63	8.849657	.6435649	7.648344	9.953056

Panel 2. Descriptive statistics of dividend distributors

Variable	Obs	Mean	Std. Dev.	Min	Max
CA	324	841.51	1176.658	17.1	12550
DPA	324	41.43389	56.92433	.4	505
BPA	324	55.48063	73.91298	-46.63029	663.482
EN	324	21.11243	29.45769	0	194.1791
TAILLE	324	9.018997	.6042833	7.658217	10.38523

Source **:** compiled from our database Stata 13

We notice that distributors have on average a lower debt ratio than non-distributors. Dividend distributors had a ratio of 21.11, versus 42.02 for non-distributors. Furthermore, the size of dividend distributors seems much larger than that of non-distributors, according to Table 4. This observation is in agreement with Fama and French (2001). The average size measured by the logarithm of total assets of distributors was on average 9 and 8.84 for non-distributors. So not only is the financial performance of dividend distributors higher than non-distributors. But still, we find from the analysis of the descriptive statistics of all these companies that the payers are less indebted and having a higher size than the non-distributors for all the years of study. Before starting the regression, it was important to identify possible collinearity between the independent variables. Therefore, a Pearson correlation was undertaken and the result of this correlation is summarized in the following table.

Tableau 5. Model correlation coefficients

	lca	1DPA	EN	BPA
lca	1.0000			
	387			
1DPA	0.6717*	1.0000		
	0.0000			
	387	387		
EN	-0.0754	-0.2189*	1.0000	
	0.1385	0.0000		
	387	387	387	
BPA	0.6471*	0.6207*	-0.1570*	1.0000
	0.0000	0.0000	0.0020	

* The correlation is significant at level 10
Source **:** compiled from our database Stata 13

This table (5) shows the bivariate correlations between the variables: share price (CA), earnings per share (EPS), dividend per share (DPA) and the debt ratio. The results showed a positive correlation between all the variables, except between the dividends per share and the debt ratio which had a negative correlation coefficient of -0.075. EPS and DPA had a significant correlation with the share price at 10%. DPA and CA were positively correlated with a correlation coefficient of 0.67. BPA and CA also had a positive correlation coefficient of 0.64. A high correlation between explanatory variables may indicate the presence of multicollinearity. One of the most widely used methods for testing collinearity between independent variables is the determination of the variance inflation factor (VIF) for each independent variable.

Table 6. The inflation factor of the variance of the independent variables

Variable	VIF	1/VIF
1DPA	1.67	0.599641
BPA	1.63	0.614300
EN	1.05	0.951361
Mean VIF	1.45	

Source **:** compiled from our database Stata 13

Based on the results in Table (6), all the VIF values between the independent variables are around 1. It can therefore be concluded that there is no multicollinearity between the independent variables and the dependent variable, at a level 95% confidence.

4.   Empirical results

To examine the validity of the correlation results, this study used a fixed-effects and random-effects regression model. In order to develop this model we carried out a logarithmic transformation. Transformations, which are applied to stock prices and/or independent variables, are applied to correct for nonlinearity problems and to correct for heteroscedasticity. As the logarithm of any negative number or number less than 1 is undefined. We left the variables (BPA, EN) that contain negative values without transformation, for the remaining variable (DPA), a constant is added to move the minimum value of the distribution, preferably to 1.00.

The results of the models have been presented in the following table, using the dividend per share as the measure of the dividend policy with other variables as the independent variables and the stock price as the dependent variable.

Table 7. The estimation results of the first model

Dependent variable : LCA	fixed effect (FE)		Random effect (RE)	
Explanatory variables	Coeff	t-stat	Coeff	t-stat
LDPA	0.155***	6.00	0.179***	6.93
EN	-0.001	-1.15	-0.001	-0.77
BPA	0.004***	9.25	0.004***	9.45
Constant	5.35***	72.62	5.27***	40.18
F test de modèle				
F statistic (42, 321) pour FE et wald statistic pour RE	27.72		252.29	
P- value >F	0.0000		0.0000	
Observations	387		387	
Groups	43		43	
Groups				
Min	9		9	
Max	9		9	
Average	9.0		9.0	
R-squared				
Within	0.3873		0.3867	
Between	0.6187		0.6361	
Overall	0.5174		0.5265	
Hausman test				
Test statistic	156.67			
Prob > chi2	0.0000			
Decision	Fixed effects model			

Note: Results significant at the 10% significance level are followed by *, at the 5% significance level by **, and at the 1% significance level by ***.

Although this study integrates both the fixed effects model and the random effects model, we find that the fixed effect model is more applicable to the random effect due to the result of the Hausman test (Prob>chi2 = 0.0000) so our analysis will be based on FE. Our study tested whether DPA, BPA and EN have a significant impact on the stock price of 43 companies listed on the Casablanca Stock Exchange for the period (2008-2016). From the analysis of the fixed effects model, it can be said that there is a significant relationship between stock price, DPA and EPS. For example, the dividend per share has a positive and significant effect on the evolution of the share price ($p \leq 0.05$). Moreover, earnings per share has a positive and significant effect on stock price movement ($P \leq 0.05$). However, leverage has a negative but insignificant effect on stock price movement. The F test has a value of 156.67, and a corresponding p-value of 0.000 shows that the model significantly explains variations in the dependent variable. In other words, the explanatory variables strongly determine the behavior of the market values of stock prices.

From the estimation model of the regression results, the following equation can be constructed:

$$LCA=5.35+0.155LDPA-0.001EN+0.004BPA$$

The dividend policy

The distribution of dividends has a significant impact on share prices. A change of 1% in the value of the dividend per share results in a change of 0.1609% in the value of the share price. Meaning, an increase in the value of the dividend per share will lead to an increase in the value of the stock price and vice versa. This result contradicts the conclusions of Miller and Modigliani (1961) that dividends have no effect on stock price. Moreover, it partially confirms the dividend signaling hypothesis, according to which the company can use dividends to reveal to the market its state of "health". So as dividends rise, investor confidence improves, leading to higher stock prices. This finding is consistent with the views of Anand (2004) and Asquith and Mullin (1983) that the dividend policy gives information about the future of the company and also has an important impact on the stock price.

The debt policy

On the other hand, we find a negative relationship between the debt ratio and the stock price, but with a somewhat high level of insignificance (p-value = 0.252). The reason for the inverse relationship can be attributed to the fact that investors do not prefer companies that have large debt because a higher debt ratio exposes the company to higher risk. The insignificance can be attributed to the low level of importance given to this factor as an important determinant of stock price in the eyes of investors. The negative coefficient

observed between the debt ratio and the share price is consistent with the results of Midani (1991) and Pani (2008).

The profits made by the company

Also earnings per share has a positive impact on share prices. This is evident in the t-value of (t-statistics = 9.25 and p-value < 0.01). The results can be explained by the fact that an increase in earnings per share will lead to a significant increase in the market prices of the shares. In other words, investors would therefore be willing to pay more for the shares of companies that have made higher profits. This result is consistent with the results provided by Collins (1957), Gordon (1959) Ball and Brown (1968), Beaver (1968), Baskin (1989). These various authors have observed that earnings per share is a major determinant of stock prices.

Conclusion

The result of our study concerning the link between financial performance and dividend policy shows that the variables, including stock dividends and profits, were found to be significantly positive for the financial performance of Moroccan companies. However, the indebtedness of these companies is not significantly linked to dividends. This means that the reduction or increase in dividends affects the price of shares and the behavior of shareholders. Since, the reduction in dividends and hence the decline in the stock price of the company will lead to the reduction in the wealth of the shareholders. This result contradicts the conclusions of the irrelevant theory of Miller and Modigliani that dividends have no effect on firm performance. This result can be explained by the unrealism of the market efficiency assumptions that are the basis of this theory, because one cannot be sure of their existence in any financial market. Furthermore, it provides support for the dividend relevance theory developed by Lintner (1962) and Gordon (1963). Shareholders seem to prefer a higher percentage of profits distributed as dividends. While this hampers future growth, it does provide shareholders with a secure return. Also, it partially confirms the dividend signaling theory developed by Bhattacharya (1979) and John and Williams (1985). This theory is based on the existence of information asymmetry between the various participants in the financial market. It suggests that executives use dividends as a signaling mechanism to convey information about company prospects to the market.

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