

## **THE IMPACT OF DIVIDEND POLICY ON FIRM VALUE. A PANEL DATA ANALYSIS OF ROMANIAN LISTED FIRMS**

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**Abstract:** *The aim of the paper is to investigate the impact of dividend policy on firm value. Our sample consists of sixty-three non-financial firms listed on the Bucharest Stock Exchange over the period 2001-2011. Employing a fixed effects model, we found that dividend pay-out ratio positively influences firm value after controlling for other firm-specific variables. Furthermore, leverage and firm size were found to have a positive effect on firm value.*

**Keywords:** *dividend policy, firm value, emergent economies, Romania, listed firms.*

### **INTRODUCTION**

Numerous factors affect the firm's dividend policy, among them legal constraints, contractual constraints, the firm's growth prospects, owner considerations, and market considerations (Gitman and Zutter, 2012). On the other hand, dividend policy affects significantly firm's ability to raise money and its value.

Several theories have highlighted the role of dividend policy. According to the dividend irrelevance theory (Miller and Modigliani, 1961), in perfect capital markets (no taxes, no transactions costs, and no other market imperfections), dividend policy does not affect firm value. The role of dividend policy has been reconsidered in imperfect capital markets. According to the residual theory, dividends are paid by a firm only after all acceptable investment opportunities have been undertaken. Gordon (1963) and Lintner (1962), in the dividend relevance theory, suggest a direct relationship between a firm's dividend policy and its market value. Their "bird-in-the-hand" argument states that existing and potential investors consider current dividends less risky than future dividends or capital gains. Baker and Wurgler (2004) argue for a "catering theory of dividends" in which firms cater to the preferences of investors, initiating or increasing dividend payment in periods when the exogenous demand for dividends is high.

Despite the importance of dividend policy, we still know little about its implications on firm value. Numerous papers studied the effect of dividend pay-out on firm value, but the results are still mixed and inconclusive.

The aim of the paper is to analyse the impact of dividend policy on firm value using a sample of Romanian firms listed on the Bucharest Stock Exchange (BSE) over the period 2001-2011. We contribute to the extant literature by providing new insights on the effect of dividend policy on firm value.

The paper is organized as follows. Section 2 presents an overview of the extant literature on dividend policy in Romania. Third section describes the data and methodology used in paper. Section 4 presents the empirical results, while the last section concludes.

## LITERATURE REVIEW ON DIVIDEND POLICY IN ROMANIA

Only a few papers studied the dividend policy in Romania and its implications on firm dynamics. Dragotă et al. (2009) focused on the effect of corporate taxation on dividend policy for the Romanian listed firms over the period 1998-2005. Using a sample of 65 firms, the authors found that corporate tax burden does not play a major role in the dividend decision making process. However, the authors highlighted that Romanian listed firms changed the dividend policy in 2005, after Romania introduced a flat tax system. Barbuta-Misu (2013) analyzed the dividend policy of five Romanian Financial Invest Companies (FICs) over the period 2006-2012 and found that the financial crisis affected the dividend distribution rate in 2008 and 2009. Similar results have been obtained Berceanu et al. (2012) on the same sample of FICs. To the best of our knowledge, there is no paper on the effect of dividend policy on firm value.

## DATA AND METHODOLOGY

In this study we used financial data collected manually from the financial annual reports of sixty three five Romanian non-financial firms listed on the BSE over the period 2001-2011. Also, we retrieve data on stock prices from the BSE website.

Our dependent variable (TQ) is computed as the ratio between market value and replacement value of its assets (Lewellen and Badrinath, 1997). In order to minimize the influence of outliers we use the logarithm of firm value.

Dividend pay-out ratio (DPR), our independent variable of interest, is calculated by dividing the firm's cash dividend per share by its earnings per share. Similar to other studies (i.e., Rehman, 2016), we employ as control variables that could have an impact on firm value the following: leverage (LEVE), firm size (FS, proxied by total sales), profitability (ROAN), and liquidity (CURR\_RA). Table 1 presents an overview of the dependent and independent variables employed in the models.

**Table no.1 Variables description**

Variable	Abbreviation	Description
Firm value	TQ	Natural logarithm of market value of firm over replacement value of its assets
Dividend payout ratio	DPR	Dividend per share over earnings per share
Debt ratio	DEBTRA	Total liabilities over total assets
Firm size	FS	Natural logarithm of total sales
Profitability	ROAN	Net profit over total assets
Liquidity	CURR_RA	Current assets over current liabilities

*Source: Research results*

To test the relation between dividend payout ratio and firm value, we consider the following model:

$$TQ_{i,t} = \beta_0 + \beta_1 * DPR_{i,t} + \beta_2 * DEBTRA_{i,t} + \beta_3 * FS_{i,t} + \beta_4 * ROAN_{i,t} + \beta_5 * CURR\_RA_{i,t} + u_i + \varepsilon_{i,t}$$

where:  $TQ_{i,t}$  denotes the firm value for firm  $i$  in year  $t$  ( $i=1, \dots, N$ ;  $t=1, \dots, T$ );  $DPR_{i,t}$ , our independent variables of interest, measures the dividend payout ratio for firm  $i$  in year  $t$ ;  $DEBTRA_{i,t}$ ,  $FS_{i,t}$ ,  $ROAN_{i,t}$ , and  $CURR\_RA_{i,t}$  represent control variables for firm  $i$  at time  $t$ ;  $\beta_0, \beta_1, \dots, \beta_5$  are parameters to be estimated;  $u_i$  are firm-specific fixed effects;  $\varepsilon_{i,t}$  is an idiosyncratic disturbance term.

We test the following research hypothesis:

Ho: dividend policy has a significant effect on firm value.

## EMPIRICAL RESULTS

Table no.2 present the descriptive statistics for all variables employed in the study. For our sample of firms, the mean value of dividend payout ratio is 0.22 (or 22.1%), with significant differences across firms and across time as highlighted by minimum and maximum values. The mean value is low if we compare it with the values reported in other studies – Kalay and Lemmon (2008) reported dividend payout ratio between 35% to 169% over the period 1972-2003 for their sample of US firms in the Compustat database. We also notice the difference between mean (0.22) and median (0.0) value for DPR, suggesting that a low number of firms are paying high dividends, while the rest is paying no dividends or low dividends. The value for debt ratio is in line with those reported by other studies for the Romanian listed firms over almost the same period (Botoc, 2013; Brenda, 2014).

**Table no.2 Descriptive statistics**

	Mean	S. D.	Minimum	Maximum	Obs.
TQ	-0.22745	0.614136	-2.58566	2.497648	475
DPR	0.221335	0.416423	0	3.630712	475
DEBTRA	0.390721	0.276235	6.52E-05	1.774894	475
FS	11.53006	1.566411	7.068249	16.63395	475
ROAN	0.016072	0.134402	-1.23465	0.821012	475
CURR_RA	2.217458	2.287344	0.160397	18.22099	475

Source: Research results

In table 3 we present the Pearson correlations between variables. According to our expectations and to results obtained in other studies we found a positive correlation coefficient between dividend payout ratio and firm value. Firm size and the degree of indebtedness are positively correlated with firm value. We also found a negative correlation between debt ratio and dividend payout ratio, which imply that more

leveraged firms are likely to pay lower dividends. Given the fact that correlations among explanatory variables are below 0.5, the multicollinearity is not a concern.

**Table no.3 Correlation matrix of variables**

	TQ	DPR	DEBTRA	FS	ROAN	CURR_RA
TQ	1					
DPR	0.086	1				
DEBTRA	0.368	-0.209	1			
FS	0.261	0.129	0.241	1		
ROAN	-0.015	0.206	-0.451	0.020	1	
CURR_RA	-0.062	0.012	-0.492	-0.174	0.168	1

Source: Research results

We employ Hausman test in order to choose between fixed effect model and random effect model (null hypothesis of a random effect model) (Anton et al., 2016). The results reported in table no. 4 reveal that  $H_0$  is rejected and the fixed effect panel models provide better fit of data.

**Table no.4 Results for Hausman test**

Correlated Random Effects - Hausman Test			
Equation: EQ01			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	37.301287	5	0.0000

Source: Research results

The results of our models are presented in table no 5. In the first model we test the impact of dividend payout ratio on firm value during the period 2001-2011. In order to exclude the effect of financial crisis on firm value, in the second model we employ only data for the period 2001-2007. According to results obtained for the first model, dividend policy has a positive effect on firm value. Our results for the pre-crisis period confirm the previous findings – dividend payout ratio positively influences firm value. Hypothesis 1 is accepted at a significance level of 10 %. Our results confirm the findings of the previous studies focused on firms operating in emerging economies (i.e., Rehman, 2016). Investors value more the Romanian firms which pay higher dividends from their profits.

**Table no.5 Impact of dividend payout ratio on firm value**

Variables	Model 1 (2001-2011)	Model 2 (2001-2007)
C	-2.729828 (0.524163)	-6.292270 (0.789697)
DPR	0.106780* (0.062023)	0.224469* (0.122060)
DEBTRA	1.244533*** (0.157499)	1.009904*** (0.213011)
FS	0.173759*** (0.046296)	0.516569*** (0.070185)
ROAN	0.284002	-0.234612

	(0.197861)	(0.305531)
CURR_RA	-0.007004 (0.014197)	-0.073298*** (0.023191)
R-squared	0.556428	0.633881
Adjusted R-squared	0.483407	0.542351
Total panel (unbalanced) observations	475	475
Standard error in parentheses *** p<0.01, ** p<0.05, * p<0.1		

Source: Research results

Our results show that leverage and firm size have a positive impact on firm value. Our findings regarding the positive effect of leverage on firm value are in line with those reported by other studies (Masulis, 1983; Martínez-Sola *et al.*, 2013). On the other hand, profitability and liquidity do not have a statistically significant influence on firm value.

As a supplementary robustness test, following Lintner (1956), we include in our models the previous year dividend payout ratio. We ran again the models and the new results (available upon request) remained broadly consistent with the previous findings.

## CONCLUSIONS

An increasing number of Romanian listed firms decided to pay dividends in the pre-crisis period. The global financial crisis affected the Romanian firms' profitability and also their dividend pay-out policy. However, we know little about the effects of dividend policy on the firm value.

The aim of the paper is to investigate the influence of dividend policy on firm value for the Romanian listed companies. For this purpose, we employ a Romanian firm-level panel data-set over the period 2001–2011. The results of the fixed-effects model show that investors valued positively firms which paid higher dividends over the period 2001-2011. Our findings suggest that managers can create value by increasing dividends to an optimal level. We also found that firm value is positively affected by leverage and firm size. Our results are useful for managers, for existing and potential investors, and also for academics.

## References

1. Anton, S., Toader, E. and Firțescu, B. (2016). Does Risk Management with Derivatives Improve the Financial Performance of Pension Funds? Empirical Evidence from Romania. *Transformations in Business and Economics*, Vol. 15, No. 3C (39C) (forthcoming).
2. Baker, M. and Wurgler, J. A. (2004). Catering theory of dividends. *Journal of Finance*, 59, pp. 1125–1165. <http://dx.doi.org/10.1111/j.1540-6261.2004.00658.x>
3. Barbuta-Misu, N. (2013). Analysis of Dividend Policy of the Romanian Financial Investment Companies. *Annals of "Dunarea de Jos" University of Galati, Fascicle I. Economics and Applied Informatics*, No. 3, pp. 23-32.
4. Berceanu, D., Sichega, N. and Militaru, D. (2012). Study on the Dividend Policy Analysis at Financial Investment Companies. *Annals of the University of Craiova, Economic Sciences Series*, Vol. 3, pp. 1-12.

5. Boțoc, C. (2013). Profitability - Capital Structure trade off: case of publicly Romanian companies. *The Annals of the University of Oradea, Economic Sciences*, Tom XXII, No. 1, pp. 409-415.
6. Brendea, G. (2014). Financing Behavior of Romanian Listed Firms in Adjusting to the Target Capital Structure. *Finance a úvěr-Czech Journal of Economics and Finance*, Vol. 64, no. 4, pp. 312-329.
7. Dragota, M., Dragota, V., Tâtu, L. and Tâtu, D. (2009). Income Taxation Regulation and Companies' Behaviour. Is the Romanian Companies' Dividend Policy Influenced by the Changes in Income Taxation?. *Romanian Journal of Economic Forecasting*, No. 1, pp. 76-93.
8. Gitman, L. and Zutter, C. (2012). *Principles of Managerial Finance*, 13<sup>th</sup> Edition. Upper Saddle River, NJ: Prentice Hall.
9. Gordon, M. J. (1963). Optimal Investment and Financing Policy. *Journal of Finance*, Vol. 18, No. 2, pp. 264-272.
10. Kalay, A. and Lemmon, M. (2008). "Payout policy". In: B. E. Eckbo (ed.): *Handbook of Corporate Finance: Empirical Corporate Finance*, Volume 2. Amsterdam: Elsevier/Science BV.
11. Lewellen, W. G. and Badrinath, S. G. (1997). On the measurement of Tobin's Q. *Journal of Financial Economics*, Vol. 44, No. 1, pp. 77-122.
12. Lintner, J. (1962). Dividends Leverage, Stock Prices, and the Supply of Capital of Corporations. *Review of Economics and Statistics*, Vol. 44, No. 3, pp. 243-269, DOI: 10.2307/1926397.
13. Lintner, J. (1956) Distribution of Incomes of Corporations among Dividends, Retained Earnings and Taxes. *American Economic Review*, Vol. 46, No. 2, pp. 97-113.
14. Martínez-Sola, C., García-Teruel, P. and Martínez-Solano, P. (2013). Corporate cash holding and firm value. *Applied Economics*, Vol. 45, No. 2, pp. 161-170. DOI: 10.1080/00036846.2011.595696.
15. Masulis, R. (1983). The impact of capital structure change on firm value: Some estimates. *The Journal of Finance*, Vol. 38, No. 1, pp. 107-126.
16. Miller, M. and Modigliani, F. (1961). Dividend Policy, Growth, and the Valuation of Shares. *The Journal of Business*, Vol. 34, No. 4, pp. 411-433.
17. Rehman, O.U. (2016). Impact of Capital Structure and Dividend Policy on Firm Value. *Journal for Studies in Management and Planning*, Vol. 2, No. 2, pp. 308-324.