Dynamic Determinants of Dividend in Affiliated and Unaffiliated Firms to Government in Tehran Stock Exchange (TSE)

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Abstract

Dividend Policy is one of the most important financial decisions that managers encounter. This study contributes to the literature of dividend and empirical research investigating the effects of dynamic factors in Tehran Stock Exchange. Based on some criteria, the study contains 133 listed firms over a 10-year period from 2001 to 2010. To test the research hypotheses, this study uses Fixed Effect model as a static and Generalized Method of Moments as a dynamic regression model. The results indicate that the most important determinants of dividends are market risks with a negative association, followed by market to book value, and firm size with positive associations. The variable of the government ownership has a negative coefficient, and it is statistically insignificant. It means that affiliated firms to the governments generally tend to pay fewer dividends, which is not significant. Therefore, the determinants of dividend decisions are not significantly different between the two groups of firms.

Keywords

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Introduction

Dividend Policy (DP) is one of the most important financial decisions that managers encounter. Brealey and Myers (2005) have listed DP as one of the top ten important unresolved issues in the field of corporate finance. Previous studies document that the patterns of dividends tend to vary across countries, especially between developed and emerging capital markets (Brealey & Myers, 2005). It is important not only because of the amount of money involved but also because of the repeated nature of the decision, which interacts with firms' financing and investment decisions. For instance, one of the reasons of the importance is that it affects firms' capital structure; the retained earnings could be used as internal funds to finance the projects rather than external sources. Otherwise, the firm has to raise funds by issuing new debt.

On the other hand, the amount of dividend is one of the important components of the investment return for all investors in the stock markets. Indeed, they expect to gain favorable dividend and capital gain to maximize their investment return. Due to the certainty of present dividends compared to the future capital gain for the investors, firms' DP is more likely to attract the attention of investors and stockholders.

Based on the discussion above, the present study is going to contribute to the literature and empirical researches of dividend employing dynamic methods to test the effects of the variables on DP over time as well as across companies.

Literature Review

Since Lintner's (1956) seminal article, theoretical and empirical researches have been proved to be contradictory. After four decades, the main theoretical issues regarding DP have focused upon the optimal DP for a firm, the market response to the firms' dividend decisions, the dividend signaling hypothesis, the dividend clientele effect, taxation issues associated with dividends versus capital gains, importance of agency costs, lifecycle theory of dividend, and determinants of DP.

Determinants of DP including firms' internal and external factors

have been studied by several researches in developed and emerging markets so far. Jensen and Meckling (1976) state that large firms, due to the free cash flow and agency problems, have a high tendency to distribute the free cash flow among shareholders to mitigate the firm's agency costs, and these companies are assumed to have higher payout ratios compared to others.

Fama and French (2001), Grullon *et. al.* (2002), and DeAngelo and DeAngelo (2006) all favour lifecycle explanations for dividends that rely, implicitly or explicitly, on the trade-off between the advantages and the costs of retention. The trade-off between retention and distribution evolves over time as profits accumulate and investment opportunities decline, so that paying dividends becomes increasingly desirable as firms mature.

Following Rozeff (1982) and Easterbrook (1984), other researchers aimed to study the determinants of dividend and how firm's managers can balance between agency costs and transaction costs altering the firm's DP. They investigated the relationship between payout ratio and firms' characteristics. They found that DP is a function of firm size, rate of growth, operating/financial leverage mix, intrinsic business risk, and ownership structure. It also appears that firms proceed to minimize the sum of agency costs and transaction costs toward an optimum level of dividend payout (Moh'd, Perry & Rimbey, 1995).

Etemadi and Chalaki (2005) investigated the relationship between performance measures (operating cash flow, operating income and earning per share) and cash dividend in Tehran stock exchange. The results show a significant relationship between firms' current performance and their cash dividend payment. Based on the results, it seems that the most significant determinant of dividend is earning per share, operating income, and operating cash flow respectively.

Jahankhani and Ghorbani (2005) in their study investigate the determinants of DP for listed companies in Tehran stock exchange. They conclude that there is no significant association between firms' growth and development, ownership concentration, and the amount of cash with dividend decisions, whereas increasing risk, investment opportunity, enlargement of firm size, and increasing debt in capital structure all significantly reduce firms' dividend payment.

Al-Malkawi (2007) studied the determinant variables of corporate

DP in Jordan. The variables include number of shareholders as a proxy for agency costs, firm size, debt ratio, ownership structure, information asymmetry, investment opportunity, and profitability. The results suggest that the proportion of stocks held by insiders and state ownership significantly affect the amount of dividends payouts. Size, age, and profitability of firms are determinant factors of corporate DP in Jordan.

Huston (2008) investigated the determinants of DP among regulated firms in the US. His study considers some firms' characteristics as dividend determinants following Rozeff and Saxena's model. The results of his study are consistent with previous findings. The results also assert that managers pay lower dividends in the presence of higher risk, higher growth rates, and higher numbers of stockholders and pay lower dividends when the percentage of insider holdings is higher.

Chemmanur, He, Hu, and Liu (2010) developed new insights about the dynamics of corporate dividend policy by performing the natural experiment of comparing corporate dividend policies in Hong Kong and the U.S. Their empirical results can be summarized as follows. The test of Lintner model reveals that the extent of dividend smoothing by firms in Hong Kong is significantly less than those in the U.S. The signalling effects of dividend changes on stock returns are stronger in the U.S. compared to those in Hong Kong. The logit analysis of the determinants of dividend changes indicates that the lagged dividend significantly affects the dividend changes in both countries in the same fashion and prior year stock returns have opposite effects on dividend changes in the two countries.

Brockman and Unlu (2011) examined the agency cost version of the lifecycle theory of dividends by taking advantage of cross-country variations in disclosure environments. The results confirm that dividend-initiating firms increase their retained earnings deciles rank prior to their initiations, and that dividend-omitting firms decrease their retained earnings deciles rank prior to their omissions. Taken together, these empirical results strongly support the lifecycle theory of dividends. In the second section of empirical analyses, they verify that the propensity to pay dividends increases significantly with retained earnings, even after controlling for returns on assets, firm size, total equity, cash holdings, and sales growth.

Fuller and Goldstein (2011) found evidence that investors are concerned with firms' dividend policies. Their results indicate that dividend-paying stocks outperform non-dividend-paying stocks by approximately 1% to 2% more in declining markets than in advancing markets. Further, these results hold when they control for risk, different definitions of advancing and declining markets, size, liquidity, industry groups, and for different sub-periods. They also found that the more these differences increase, the market decreases. These results seem not to be a function of the quality of the firm, based on past profitability, future profitability, cash flow, or Tobin's Q.

Mashayekh and Abdollahi (2011) investigated the relationship between ownership concentration, performance measures and firm dividend payments. The results revealed that ownership concentration could improve firms' performance, and higher concentration of ownership leads to better performance measures such as ROA and Tobin's Q. Based on second hypothesis, positive relationship exists between firms' performance and payout policies. However, the result of third hypothesis asserts that no significant relationship can be observed between ownership concentration and dividend decision. It means that in Iran the majority of shareholders could not influence dividend payout decision significantly.

Abbaszadeh, Vadeei, and Pakdel (2012) investigated the association of institutional ownership, cash flow, and dividend policy. They have used three multiple regression models including, full adjustment, partial adjustment, and earning trend models to test the research hypotheses. The results indicate a significant positive relationship between levels of institutional ownership, active institutional ownership, and dividend policy. However, the relationship between inactive institutional ownership and payout policy is negative. Furthermore, the finding reveals that there is a positive and significant association between operating cash flow and firm dividend decision.

Patra, Poshakwale, and Ow-Yong (2012) examine the determinants of corporate dividend policy of listed firms in Greece as a case study of an emerging market country. The study uses the Generalized Method of Moments (GMM) to estimate the firm level factors that may determine why firms distribute dividends. The study shows evidence that size, profitability, and liquidity factors increase the probability to pay

dividends. However, investment opportunities, financial leverage, and business risk decrease the likelihood to pay dividends. Overall, the findings lend support for the information asymmetry and agency cost theories.

Richard (2013) examined whether corporate dividend policy changed during the financial crisis. For this purpose, a life-cycle model was used to predict the probability that a firm pays dividend. The panel logistic regression analysis considers the firm cluster effects and the autoregressive correlation of the firm clusters. The results show evidence that the probability that a firm paid a dividend declined in 2008 and 2009, even after taking the firm's financial condition into account. Furthermore, the analysis also shows that dividend policy did shift during the financial crisis. The research provides evidence that firms placed additional emphasis on financial viability after the financial crisis.

As it can be seen, regarding the determinants of dividend in Tehran stock exchange just a few research indicating limited factors have been done so far. Therefore, considering the importance of dividend decision, it is obvious that more empirical research is necessary.

Methods

The present study uses panel data in which listed firms are considered as cross sections investigated over the period of the study. Contrary to cross-sectional studies conducted by previous research such as Rozeff (1982), Saxena (1999), Al-Malkawi (2007), and others, this study hypothesizes that the DP changes over time. For this reason, the study assumes that the variability of dividend payout is a function of the firm's dynamic optimal behaviour over time. Panel data opens up the possibility of observing differences in behaviour simultaneously over cross-sectional units as well as over time for a given cross-sectional unit.

The study attempts to test how firms' specific characteristics affect dividend payout ratio across units as well as over time. For this reason, the study tends to use several tests to investigate the effects of explanatory variables, such FE[1] estimation as static methods as well as

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1. Fixed Effect

DPD[1] using GMM[2] estimation. However, the core part is to employ the GMM model to test the dynamic relationship between the variables of the study.

Research Hypotheses

Based on the literature of dividend discussed previously and following empirical research about determinants of dividend in developed and emerging markets, the following hypotheses were developed in the study:

1. There is a positive relationship between firms' market share of value and dividend policy.
2. There is a positive relationship between majority ownership and firms' dividend policy.
3. There is a positive relationship between ownership by government and firms' dividend policy.
4. There is a positive relationship between firms' maturity and dividend policy.
5. There is a positive relationship between profitability and firms' dividend policy.
6. There is a positive relationship between free cash flow and firms' dividend policy.
7. There is a negative relationship between investment opportunities and firms' dividend policy.
8. There is a negative relationship between leverage and firms' dividend policy.
9. There is a negative relationship between Beta coefficient and firms' dividend policy.
10. There is a positive relationship between size and firms' dividend policy.

Sample Selection, Data, and Variables

In this study, sample companies were selected from listed firms in both main board and second board of Tehran Stock Exchange (TSE). The study considered the following criteria to select the sample companies.

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1. Dynamic Panel Data
2. Generalized Method of Moments

1. Financial companies (banks, insurance, and investment companies) were excluded from the sample due to their different accounting regulations, categories, and financial reports.
2. Companies with different fiscal year were also excluded from the sample.
3. In the estimation of the dynamic model for DP, it is required that the data of the sample firms to be observed at least for five consecutive years, so the companies with unavailable data at least for five years were also excluded from the sample.
4. Sample firms must be listed on either main board or second board until the end of 2011, which means that firms that exited the boards before 2011 were excluded from the sample.

All financial data are extracted from the audited financial statements including, the balance sheet, the income statement, and the cash flow statement through the official website of TSE and Tadbir Pardaz database. Based on the criteria above, final sample in the study contains 133 listed firms over a 10-year period from 2002 to 2011.

Dependent Variable: The present study, following several researches of dividend policy (Omran & Pointon, 2004; Rozeff, 1982; Sexena, 1999), tends to apply dividend payout ratio as follow:

$$DPR = \frac{Total\ Dividends}{Net\ Earnings} * 100 \qquad (1)$$

Independent Variables: The proxies of independent variables are presented by following equations:

1. Firm's market share (MSHAR) is calculated by the following equation:

$$MSHAR = \frac{Firm's\ Market\ Capitalization}{Total\ Market\ Capitalization\ of\ the\ Industry} * 100 \qquad (2)$$

2. Majority ownership (MOW) is represented by the total percentage of common stocks held by major shareholders who own more than 5% of companies' outstanding shares.
3. Ownership by government (DUMGV) is represented by a dummy variable which takes one for companies who are affiliated to the government or quasi-government institutions with shareholding more than 50% and zero.

4. Firms' maturity is represented by the proportion of retained earnings (RER) as follows:

$$RER = \frac{Total\ Retained\ Earnings}{Total\ Equity} * 100 \qquad (3)$$

5. Profitability is represented by Return on Assets (ROA).

$$ROA = \frac{Net\ Earnings\ after\ Tax}{Total\ Asset} * 100 \qquad (4)$$

6. Free Cash Flow (FCF) is represented by the equation below:

$$FCF = LN\ (Net\ Earnings\ after\ Tax - \Delta Net\ Assets) \qquad (5)$$

7. Investment opportunity is represented by Tobin's Q ratio, market to book value of total assets.

$$Tobin's\ Q = \frac{Market\ Value\ of\ Total\ Equity + Book\ Value\ of\ Total\ Debt}{Book\ Value\ of\ Total\ Assets} \qquad (6)$$

8. Leverage ratio (LEV) is represented by the following equation:

$$LEV = \frac{Total\ Debt}{Total\ Assets} * 100 \qquad (7)$$

9. Firm's market risk is represented by Beta coefficient (BETA) calculated by the following formula:

$$BETA = \frac{Cov(R_i, R_m)}{\sigma_{R_m}^2} \qquad (8)$$

10. Different proxies such as, natural log of total assets, total sales, and total market capitalisation will represent firm size. In the present study, firm's size is surrogated by natural log of total assets (SIZE).

Methods

The present study assumes that the firms' characteristics (explanatory variables) have a linear relationship with firms' DP. Using panel data enables us not only to consider both the time-series and cross-sectional features of the sample, but also to identify the mingled effects and importance of each explanatory variable in affecting the firms' DP.

Fixed Effect Model: Using fixed effect estimation, the study aims to consider only the presence of the individual fixed effects, $\alpha_i \neq 0$ 0which means the firms' intercept are different across firms but the intercept for given firm is constant over time. The differences of intercept across firms may be due to special characteristics in each firm such as managerial ability or competition environment. The error term α_{it} is called *idiosyncratic* error because it can change across *i* as well as time *t* (Wooldridge, 2002). Therefore, the overall regression equation will be as follows:

$$Y_{it} = \sum_{i=t}^{N-1} \alpha_i d_i + \beta X_{it} + \varepsilon_{it} \tag{9}$$

Where,

α_i : Firm effect parameters.

d_i: Firm-specific dummy variables which are equal to 1 if the observations belong to the ith firm, and zero otherwise; and

X_{it}: Explanatory variables (firms' characteristics)

β : Regression coefficients

ε_{it}: Error term

Therefore, the empirical static model to estimate parameters and test the research hypotheses is presented in equation 10:

$$\begin{aligned} DPR = \beta_0 + \beta_1 MSHAR + \beta_2 MOW + \beta_3 DUMGV + \beta_4 RER + \beta_5 ROA + \beta_6 FCF \\ + \beta_7 MBV + \beta_8 LEV + \beta_9 BETA + \beta_{10} SIZE + \varepsilon \end{aligned} \tag{10}$$

Dynamic Model of Dividend Policy: Many empirical researches of dividend determinants have concentrated on the static bases (Al-Malkawi, 2007; Anil & Kapoor, 2008; Rozeff, 1982; Saxena, 1999). Estimating parameters under such condition relies on the assumption that the coefficients of all lagged variables in the model are not different from zero. Based on this assumption, the lagged exogenous variables have no effect on current adjustment at all. This kind of analysis exposes short-run determinants of DP econometrically.

The present study, in order to provide the long-run determinants of DP and the adjustment process toward optimal DP, is going to extend the empirical research on the dynamic of dividend decision and the nature of adjustment process. Under the dynamic condition, this study

tends to estimate the dynamic model of DP by employing the GMM technique as suggested by Arellano and Bond (1991).

GMM Estimation Model: The core of the GMM estimation is the application of instrumental variables[1]. GMM would be more appropriate than other techniques for several reasons as follows:

1. Some explanatory variables in the model such as leverage, free cash flow, and beta are assumed endogenous. Therefore, the use of instrumental variables is required;
2. There is evidence that time-invariant firms' characteristics (fixed effect) may be correlated with the explanatory variables of the model;
3. The panel data set of the study will have a short time dimension (T<15) and a longer firm dimension (N>100);

Furthermore, the GMM estimators have advantages because they allow for possible correlation of the disturbances over time in a dynamic framework. To illustrate how the Arellano and bond (1991) estimation method performs, the dynamic model to be estimated in level as follows:

$$Y_{it} = \rho Y_{i,t-1} + \beta X_{it} + \lambda_i + \varepsilon_{it} \tag{11}$$

Where differencing, eliminates the individual fixed effects, λ_i :

$$Y_{it} - Y_{i,t-1} = \rho\left(Y_{i,t-1} - Y_{i,t-2}\right) + \beta\left(X_{it} - X_{i,t-1}\right) + \left(\varepsilon_{it} - \varepsilon_{i,t-1}\right) \tag{12}$$

After rewriting the above equation, the following equation is obtained:

$$\Delta Y_{it} = \rho \Delta Y_{i,t-1} + \beta \Delta X_{it} + \Delta \varepsilon_{it} \tag{13}$$

The present study looks for a set of instrumental variables for each year, in the differenced equation. For $\mathbf{t = 3}$, the dynamic equation to be estimated will be:

$$Y_{i3} - Y_{i2} = \rho(Y_{i2} - Y_{i1}) + \beta(X_{i3} - X_{i2}) + (\varepsilon_{i3} - \varepsilon_{i2}) \tag{14}$$

Or

$$\Delta Y_{i3} = \rho \Delta Y_{i2} + \beta \Delta X_{i3} + \Delta \varepsilon_{I3} \tag{15}$$

Where the instruments $Y_{i1}, X_{i1,}$ and X_{i2} are available to be used for the estimation. For t = 4, the equation will be:

$$\Delta Y_{i4} = \rho \Delta Y_{i3} + \beta \Delta X_{i4} + \varepsilon_{i4} \tag{16}$$

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1. Based on GMM method the instrumental variables (Zs) are uncorrelated with the error terms (ε) of the dynamic model.

Here the instrumental variables are $Y_{i1}, Y_{i2}, X_{i1}, X_{i2}$, and X_{i3} to be used. Therefore, for the equation in the final period of the study (T), we obtain:

$$\Delta Y_{iT} = \rho \Delta Y_{iT-1} + \beta \Delta X_{iT} + \varepsilon_{iT} \qquad (17)$$

Based on the discussion above, the final empirical dynamic model to test the research hypotheses would be presented as follows:

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\begin{aligned}
DPR = \beta_0 &+ \beta_1 DPR_{-1} + \beta_2 MSHAR + \beta_3 MOW + \beta_4 DUMGV + \beta_5 RER \qquad (18)\\
&+ \beta_6 ROA + \beta_7 FCF + \beta_8 MBV + \beta_9 LEV + \beta_{10} BETA\\
&+ \beta_{11} SIZE + \varepsilon
\end{aligned}
$$

Findings and Empirical Results

Descriptive statistics of the variables and the equality test of the variables means used in the study are summarized in Table 1. The Table shows that the mean of dependent variable DPR (Y) is 70.74 percent with standard deviation of 29.73. The mean of MSHAR (X_1) is 12.12 percent with standard deviation of 21.1, indicating that each listed firms on average own 12 percent of market capitalization in the same industry. The largest mean of explanatory variables belongs to the variables MOW (X_2) with 69.99 percent and LEV (X_8) with 67.61 percent. The mean of SIXE (X_{10}) is 26.74 with 1.44 standard deviation. The table also shows the results of the equality test of the variables means between the two groups of companies, Affiliated Firms (AF) and Unaffiliated Firms (UAF) to governments.

Table 1. Descriptive statistics of the variables[1] and test of equality of variables' means

Variables	Overall Sample		AF(n=68)		UAF(n=65)		*T-value*	*P-value*
	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev		
DPR (Y)	70.74	29.73	72.43	28.17	68.28	31.73	2.35	0.019*
MSHAR (X_1)	12.12	21.10	14.04	22.77	9.36	18.08	3.99	0.000*
MOW (X_2)	69.99	20.07	75.83	13.26	61.54	24.73	11.79	0.000*
RER (X_4)	28.85	22.49	28.81	22.07	28.92	23.10	-0.081	0.935
ROA (X_5)	15.84	11.06	16.57	11.32	14.79	10.60	2.77	0.006*
FCF (X_6)	19.70	9.54	20.03	9.69	19.23	9.31	1.447	0.148
MBV (X_7)	1.68	1.08	1.79	1.24	1.51	0.75	4.904	0.000*
LEV (X_8)	67.61	20.55	68.59	22.57	66.18	17.12	2.024	0.043*
BETA (X_9)	0.91	0.24	0.91	0.23	0.91	0.24	0.287	0.774
SIZE (X_{10})	26.74	1.44	27.08	1.50	26.24	1.18	10.85	0.000*

Note: DPR(Y) is dividend payout ratio, MSHAR(X_1) is firms' market share, MOW(X_2) is majority ownership, RER(X_4) is the proportion of retained earnings, ROA(X_5) is return on asset, FCF(X_6) is free cash flow, MBV(X_7) is market to book value, LEV(X_8) is leverage, BETA(X_9) is beta coefficient, SIZE(X_{10}) is firm size.

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1. Dummy variables are not included in the Table.

Table 2 reports the results of FE model with firm-specific variables and a constant term. The results show that the joint *F*-statistics of all estimated coefficients are highly significant with value of 5.501 and are able to reject the null hypothesis of joint insignificance of the coefficient at 0.01 level. The values of R-square and adjusted R-square are 0.42 and 0.344, respectively, indicating higher goodness of fit measured by adjusted R-square. The estimated coefficients show that only five explanatory variables are significant at 0.01 and 0.05 levels. The results show that BETA (X_9) has the largest negative association (-6.862) with DPR (Y) and consistent with the expected result, whereas the RER (X_4) with estimated parameter of -0.119 has the lowest relationship with DPR (Y). The relationship between other significant variables include MSHAR (X_1), ROA (X_5), FCF (X_6), and LEV (X_8), and DPR(Y) are consistent with the expected association arise from the literature.

Table 2. The result of Fixed Effect regression model

Dependent Variable: DPR (Y)			
Variables	**Coefficient**	**t-Statistic**	**P-value**
Const.	124.85	3.569	0.000
MSHAR (X_1)	0.191	2.241**	0.025
MOW (X_2)	-0.109	-0.954	0.341
DUMGV(X_3)	1.485	0.240	0.810
RER (X_4)	-0.119	-2.648***	0.008
ROA (X_5)	0.415	3.590***	0.000
FCF (X_6)	0.148	1.817**	0.069
MBV (X_7)	-1.506	-1.498	0.135
LEV (X_8)	-0.149	-2.636***	0.009
BETA (X_9)	-6.862	-1.917**	0.056
SIZE (X_{10})	-1.379	-1.200	0.230
R-squared		0.420	
Adjusted R-squared		0.344	
F-statistic		5.501	
P-value		0.000	

Statistically significant at 0.01 (***), 0.05 (**),and 0,10 (*).

Table 3 reports the results of AB's estimator of the GMM model for all explanatory variables including lagged dependent variable and firm-specific characteristics. The Table also shows the results of Wald joint significance, first order autocorrelation (AR1), second order autocorrelation (AR2), and Sargan test. The results show that at the aggregate level, the Wald joint test of all the coefficients is highly

significant with a value of 10369, and rejects the null hypothesis of joint insignificance of the coefficient at 0.01 level. Based on the literature of GMM model the probability of AR (1) test must be less than 0.05 to be significant; however, the probabilities of AR (2) as well as Sargan test must exceed 0.05 to indicate validity of the instruments. The Table shows that the probability of AR (1) is zero and for AR (2) and Sargan test are more than 0.05 indicating no autocorrelation in the model and valid instruments. On the other hand, the estimated coefficients show six explanatory variables to be significant at 0.01 and 0.05 levels. As it is seen, BETA (X9) has the largest negative impact on dividend payout ratio with coefficient of -5.108 while the lowest impact belongs to the MOW (X2) with 0.089.

Table 3. The results of Generalized Method of Moments regression model

Dependent Variable: DPR(Y)			
Variables	**Coefficient**	**Z-Statistic**	**P-value**
LDPR (Y_{-1})	0.362	3.950***	0.000
MSHAR (X_1)	0.150	3.350***	0.001
MOW (X_2)	0.089	1.780*	0.075
DUMGV(X_3)	-1.820	-0.920	0.359
RER (X_4)	-1.182	-1.610	0.107
ROA (X_5)	0.504	2.060**	0.040
FCF (X_6)	0.052	0.320	0.752
MBV (X_7)	4.856	1.730*	0.083
LEV (X_8)	-0.163	-1.340	0.179
BETA (X_9)	-5.108	-2.560*	0.100
SIZE (X_{10})	1.511	3.230***	0.001
Wald test	10369***	P (chi2)	0.000
AR(1)	-5.62***	P (Z)	0.000
AR(2)	1.14	P (Z)	0.254
Sargan test	58.64*	P (chi2)	0.083

Statistically significant at 0.01 (***), 0.05 (**),and 0,10 (*).

Table 4 tabulates a summary of expected signs (based on the literature and previous empirical evidence), estimated signs, and significance of the parameters and whether or not the hypotheses of the study accepted in the market. The Table shows that 6 variables out of 11 are statistically significant and consistent with the expected results, while only one variable (X_7) is significant but inconsistent with expected sign, it is concluded that only 6 hypotheses are accepted while other 5 hypotheses rejected by the study.

Table 4. The Summary of estimated parameters of the variables

Hypothesis	Variables	Expected Sign	Sign	Significant	Hypothesis
	LDPR (Y_{-1})	+	+	Yes	Accepted
2	MSHAR (X_1)	+	+	Yes	Accepted
3	MOW (X_2)	+	+	Yes	Accepted
4	DUMGV(X_3)	+	-	No	Reject
5	RER (X_4)	+	-	No	Reject
6	ROA (X_5)	+	+	Yes	Accepted
7	FCF (X_6)	+	+	No	Reject
8	MBV (X_7)	-	+	Yes	Reject
9	LEV (X_8)	-	-	No	Reject
10	BETA (X_9)	-	-	Yes	Accepted
11	SIZE (X_{10})	+	+	Yes	Accepted

Conclusion

Returning to the hypotheses of the study posed previously, it is now possible to state that several firm specific characteristics were used in the modeling. The study employed static and dynamic regression models to identify the appropriate method of estimation of the parameters. The findings shed new insights on the financing behavior of sample firms. The market risk has affected firms' DP negatively and seems to be the most important determinant. These results are in agreement with the documented literature in developed and emerging markets. Under the dynamic framework, this study could obtain estimates for long-run coefficients of the variables in the dividend model, which was under estimated by the static model or usually neglected in the prior studies of dividends.

The results show that the most important determinants of firms' DP are market risk with a negative association, followed by market to book value, and then firm size with positive associations. In addition, the study reveals that the dummy variable of the government ownership (X_3) has a negative coefficient and it is statistically insignificant. It means that affiliated firms to the governments generally tend to pay fewer dividends which are not significant. Overall, the determinants of dividend decisions are not significantly different between the two groups of firms, independent and dependent firms on the governments.

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