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Investment opportunities, corporate finance, and dividend payout policy

Evidence from emerging markets

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Abstract

Purpose – The purpose of this paper is to investigate the effects of investment opportunities and corporate finance on dividend payout policy.

Design/methodology/approach – This issue is tested with a sample of 34 emerging market countries covering a 17-year period, 1990-2006. Fixed effects panel model is employed in our estimation.

Findings – A significantly negative relationship between investment opportunity set and dividend payout policy is found. There are, however, insignificant effects of the various measures of corporate finance namely, financial leverage, external financing, and debt maturity on dividend payout policy. Profitability and stock market capitalization are also identified as important in influencing dividend payout policy. Profitable firms are more likely to support high dividend payments to shareholders. However, firms in relatively well-developed markets tend to exhibit low dividend payout policy.

Originality/value – The main value of the paper is in respect of the fact that it uses a large dataset from emerging market countries. The results generally support existing literature on investment opportunity set and dividend payout policy.

Keywords Investments, Corporate finances, Dividends, Emerging markets

Paper type Research paper

1. Introduction

The impact of investment and financing decisions on firm value has been the focus of extensive research since Modigliani and Miller (1958) proposed the "separation principle". The theory asserts that in a perfect capital market, the value of the firm is independent of the manner in which its productive assets are financed. In fact some authors like Barnea *et al.* (1981) support their view. However, others have contrasted the findings of the earlier studies suggesting that investment, financing, and dividend policy are related (Grabowski and Mueller, 1972; McCabe, 1979; Anderson, 1983). This is predicated on the assumption that Modigliani and Miller's ideal world does not exist. Financial markets are not perfect given taxes, transaction costs, bankruptcy costs, agency costs, and uncertain inflation in the market place. According to Bierman and Hass (1983), management usually addresses the dividend target payout level in the context of forecasting the firm's sources and use of funds. Considering prospective investment opportunities and the internal cash generation potential of the firm, both capital structure and dividend policy are chosen to ensure that sufficient funds are available to undertake all desirable investments without using new equity (Black, 1976). But what constitutes a "desirable" investment? If it is one that has an

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expected return greater than the cost of funds that finance it, and if the cost of retained earnings is different from the cost of new equity capital, then dividend policy, capital structure, and investment strategy are necessarily jointly determined (Black and Scholes, 1974).

Dividend payout policy is an important corporate issue and may be closely related to, and interacts with, most of the financial and investment decisions firms make. A proper understanding of dividend policy is critical for many other areas such as asset pricing, capital structure, mergers and acquisitions, and capital budgeting (Allen and Michaely, 1995). Firms' dividend decisions could also be influenced by their profit level, risk, and size. Though dividend policy has been identified as a major corporate decision faced by management, it remains one of the puzzles in corporate finance (Ooi, 2001). There has been emerging consensus that there is no single explanation of dividends. Brook *et al.* (1998) agree that, there is no reason to believe that corporate dividend policy is driven by a single goal.

Attention of empirical research has been at ascertaining the relationship between investment opportunities, corporate financing and dividend payout (Pruitt and Gitman, 1991; Aivazian and Booth, 2003). However, these findings have failed to establish any clear link concerning this issue. Most of these studies tend to focus on developed markets. Little is, however, known about how investment opportunities and corporate finance influence dividend payout policy of emerging markets. This present study contributes to the extant literature by focusing on emerging markets. Firms in emerging markets tend to exhibit different dividend behaviour from those of developed markets like the US. This may be a result of the differences in levels of efficiency and institutional arrangements between developed markets and emerging markets. It is, therefore, useful to improve our understanding of the issue from an emerging market perspective.

The purpose of this paper is to examine the effects of investment opportunity set and corporate finance on dividend payout. The contribution of this paper lies in the fact that it considers a large-scale dataset covering 34 emerging market countries over a 17-year period, 1990-2006. The rest of the paper is organized as follows. Section 2 covers the literature on dividend policy. It also reviews the existing literature on the effects of investment opportunities and corporate finance on dividend payout policy. Section 3 discusses the data used in the study and also details the model specification used for the empirical analysis. Section 4 includes the discussion of the empirical results. Finally, Section 5 summarizes and concludes the paper.

2. Overview of literature

Since the publication of the dividend irrelevance theory by Miller and Modigliani (1961), a lot of studies have been conducted in the area of determinants of dividend payout the world over. The dividend irrelevance theory is possible in a perfect and efficient market where stockholders are perfectly rational and there are no taxes and transaction costs. The theory, however, pointed out the importance of investment as being the main issue. Miller and Modigliani framework has thus formed the foundation of subsequent work on dividends and payout policy in general. Their framework is rich enough to encompass both dividends and repurchase, as the only determinant of a firm's value is its investment policy (Allen and Michaely, 2002). It is arguably said a company's overriding goal is to maximize shareholder wealth (Brealey and Myers, 1996; Block and Hirt, 2000), but to Block and Hirt (2000) this concept is not

a simple task as management cannot directly influence the price of a share but can only act in a manner consistent with the desires of investors. In the view of Woods and Randall (1989), shareholder wealth is generally accepted as the aggregate market value of the common shares, which in turn is assumed to be the present value of the cash flows which will accrue to shareholders, discounted at their required rate of return on equity. These cash flows include dividend and perhaps more importantly capital appreciation except for its high volatility. Firms must, therefore, make important decisions over and over again about how much cash the firm should give back to its shareholders and probably what form it should take. Should corporations pay their shareholders through dividends or repurchasing their shares which is the least costly form of payout from a tax perspective (Allen and Michaely, 2002)?

Black (1976) observed that the harder we look at the dividends picture, the more it seems like a puzzle, with pieces that just do not fit together. This attests to the much controversy that surrounds dividend policy. The dividend puzzle revolves around figuring out why companies pay dividends and investors pay attention to dividend. To Brealey and Myers (1996), dividend policy is seen as a trade-off between retaining earnings on one hand and paying out cash and issuing new shares on the other. The theoretical principles underlying the dividend policy of firms range from information asymmetries, tax-adjusted theory to behavioural factors. The information asymmetries encompass several aspects, including the agency cost, free cash flow hypothesis, and signalling models.

Tax-adjusted models presume that investors require and secure higher expected returns on shares of dividend-paying stocks. The consequence of tax adjusted theory is the division of investors into dividend tax clientele and the clientele effect is responsible for the alterations in portfolio composition (Modigliani, 1982). To Masulis and Trueman (1988), investors with differing tax liabilities will not be uniform in their ideal firm dividend policy. They conclude that as tax liability increases, the dividend payment decreases while earnings reinvestment increases and vice versa.

Shareholders typically face the problem of adverse selection and moral hazard in the face of separation of ownership and control. The problem of information asymmetry is evident in conflicts of interest between various corporate claimholders. It holds that insiders such as managers have more information about the firm's cash flow than the providers of the funds. Agency costs are lower in firms with high managerial ownership stakes because of better alignment of shareholder and managerial control (Jensen and Meckling, 1976) and also in firms with large block shareholders that are better able to monitor managerial activities (Shleifer and Vishny, 1986). Fama and Jensen (1983) argue that agency problems can be resolved by the payment of large dividend to shareholders.

According to the free cash flow model, Jensen (1986) explains that finance available after financing all positive net present value projects can result in conflicts of interest between managers and shareholders. Clearly, dividends and debt interest payment decrease the free cash flow available to managers to invest in marginal net present value projects and manager perquisite consumption. Firms with higher levels of cash flow should have higher dividend payout and/or higher leverage.

The signalling theory suggests that corporate dividend policy used as a means of putting quality message across has a lower cost than other alternatives (Miller and Rock, 1985; Asquith and Mullins, 1986). This was developed initially for the labour market but its usefulness has been felt in the financial markets. Akerlof (1970) defines

signalling effect as a unique and specific signalling equilibrium in which a job seeker signals his/her quality to a prospective employer. The signalling theory suggests that dividends are used to signal managements' private information regarding the future earnings of the firm. Investors often see announcements of dividend initiations and omissions as managers' forecast of future earnings changes (Healy and Palepu, 1988). Dividends are used in signalling the future prospects, and dividends are paid even if there is profitable investment opportunity (Baker *et al.*, 1985; Pruitt and Gitman, 1991).

2.1 Investment opportunities and dividend payout

The investment opportunities available to the firm constitute an important component of market value. The investment opportunity set of a firm affects the way the firm is viewed by managers, owners, investors, and creditors (Kallapur and Trombley, 2001). The literature has given considerable attention in recent years to examining the association between investment opportunity set and corporate policy choices, including financing, dividend, and compensation policies (Smith and Watts, 1992; Gaver and Gaver, 1993; Kallapur and Trombley, 1999; Jones and Sharma, 2001; Abbott, 2001). According to Jones (2001), investment opportunity set represents a firm's investment or growth options but to Myers (1977) its value depends on the discretional expenditures of managers. Myers (1977) further explains investment opportunity as a yet-to-be realized potentially profitable project that a firm can exploit for economic rents. Thus, this represents the component of the firm's value resulting from options to make future investments (Smith and Watts, 1992).

Growth opportunities are also represented by the relative fraction of firm value that is accounted for by assets in place (plant, equipment, and other tangible assets), and that the lower the fraction of firm value represented by assets in place, the higher the growth opportunities (Gul and Kealey, 1999). Kallapur and Trombley (2001) suggest that, the conventional notion of investment opportunity set is of new capital expenditure made to introduce a new product or expand production of an existing product. This may include an option to make expenditure to reduce costs during a corporate restructuring. An investment opportunity has been measured in various ways by various writers. These include market to book value of equity (Collins and Kothari, 1989; Chung and Charoenwong, 1991), book to market value of assets (Smith and Watts, 1992), and Tobin's q (Skinner, 1993).

Existing literature suggests a relationship between investment opportunities and dividend policy. Smith and Watts (1992) argue that firms with high investment opportunity set are likely to pursue a low dividend payout policy, since dividends and investment represent competing potential uses of a firm's cash resources (Gaver and Gaver, 1993). Jones (2001), extending and modifying the work of Gaver and Gaver (1993), found out that high growth firms were associated with significantly lower dividend yields. Gul and Kealey (1999) also found a negative relationship between growth options and dividends. Abbott (2001) argues that firms that experienced an investment opportunity set expansion (decrease) generally reduced (increase) their dividend payout policy. Others support the fact that firms with higher market-to-book value tend to have good investment opportunities, and would retain more funds to finance such investment, thus recording lower dividend payout ratios (Rozeff, 1982; Lloyd *et al.*, 1985; Collins *et al.*, 1996; Amidu and Abor, 2006). Riahi-Belkaoui and Picur (2001) also validated the fact that firms in high investment opportunity set group are "PE valued" whilst firms in low investment

opportunity set are "dividend yield valued". This implies that for firms in low investment opportunity set, dividends are of greater relevance than earnings whilst the opposite is true for firms in high investment opportunity set. Using market-to-book ratio as proxy for investment opportunity set, Aivazian and Booth (2003), however, found a positive relationship between market-to-book value ratio and dividend payments, suggesting that firms with higher investment opportunities rather pay higher dividends.

2.2 Corporate finance and dividend payout

The financing choice of firms is perhaps the most researched area in finance in the past decades following the seminal article of Modigliani and Miller (1958) raising the issue of the relationship between a firms choice of finance and its value. Recently, there are still increasing research and new evidence being sought for the relevance or otherwise of the theory started by Modigliani and Miller. The theorem hinges on the principle of perfect capital markets. This asserts that firm value is completely independent of how its productive assets are financed. Subsequent researches have suggested a relationship between choice of financing and firm value even though some researchers corroborated the findings of Modigliani and Miller's irrelevance theory (Fama, 1974; Pruitt and Gitman, 1991). However, studies by Anderson (1983), Peterson and Benesh (1983) have proved that in the "real world" market imperfections effectively prohibit the independence of firm's investment and financing decisions. This market imperfection is primarily coming from the fact that there are taxes, transaction cost, information asymmetry, and bankruptcy cost. This indicates a relationship between the choice of financing and firm value.

Financial leverage is said to play an important role in reducing agency costs arising from shareholder-manager conflict and is believed to play a vital role of monitoring managers (Jensen and Meckling, 1976; Jensen, 1986; Stulz, 1988). Farinha (2003) contends that debt is likely to influence dividend decisions because of debt covenants and related restrictions that may be imposed by debtholders. Also, firms with high financial leverage and implied financial risk tend to avoid paying high dividends, so they can accommodate risk associated with the use of debt finance. Rozeff (1982), Easterbrook (1984) and Collins *et al.* (1996) extending the agency theory observe that firms pay dividend and raise capital simultaneously. In the view of Easterbrook (1984), increasing dividends raises the probability that additional capital will have to be raised externally on a periodic basis. This view is also shared by Green *et al.* (1993) who argue that dividend payout levels are not totally decided after a firm's financing has been made. Higgins (1972) suggests that firms' dividend payout ratio could be negatively influenced by their need for finance. Thus, dividend decision is taken alongside financing decisions. Higgins (1981) shows a direct link between growth and financing needs, in that rapidly growing firms have external financing need because working capital needs normally exceed the incremental cash flows from new sales. Aivazian and Booth (2003) support the fact that financial constraints can affect dividend decisions, therefore, firms with relatively less debt have greater financial slack and are more likely to pay and maintain their dividends.

3. Data and econometric method

3.1 Data and variable construction

This study examines the effects of investment opportunity set and corporate finance on the dividend payout policy of emerging market firms. Our dataset is composed

of accounting and market data for a large sample of publicly traded firms in 34 emerging market countries over the period 1990-2006. These countries include: Argentina, Brazil, Chile, China, Columbia, Czech, Egypt, Greece, Hong Kong, Hungary, India, Indonesia, Israel, South Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Portugal, Russian Federation, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Taiwan, Thailand, Turkey, Venezuela, and Zimbabwe. This information is obtained through the Corporate Vulnerability Utility of the International Monetary Fund. The corporate vulnerability utility provides indicators for surveillance of the corporate sector and it relies on accounting data from Worldscope and market data mainly from Datastream.

The dependent variable, dividend payout is defined as the ratio of dividend to capital. Dividend is total cash dividend paid to equity and preferred shareholders. The independent variables include investment opportunity set and corporate finance. We also control for profitability, risk, market capitalization, and two other macroeconomic variables: inflation rate and log of gross domestic product (GDP) per capita as a measure of the country's income level.

In terms of the independent variables, Tobin's q is used as a proxy for investment opportunity set. Three measures of corporate finance are used. These are; financial leverage (the ratio of debt to equity), external finance (the ratio of external finance to total finance), and debt maturity (the ratio of short-term debt to total debt).

In terms of the control variables, profitability is measured as return on assets. Profitability is considered as the primary indicator of the firm's capacity to declare and pay dividends. Baker *et al.* (1985) find that a major determinant of dividend payment is the anticipated level of future earnings. Pruitt and Gitman (1991) also report that current and past years' profits are important in influencing dividend payments. Others such as Jensen *et al.* (1992), Aivazian and Booth (2003), and Amidu and Abor (2006) find evidence of a positive association between profitability and dividend payouts. Baker (1989) finds that an important reason cited by firms for not paying dividends is "poor earnings". Similarly, DeAngelo and DeAngelo (1990) find that a significant proportion of firms with losses over a five year period, tend to omit their dividends entirely. A positive relationship should exist between profitability and dividend payout.

Risk is defined using the O-Score, which is a measure of probability of default. Pruitt and Gitman (1991) find that risk is a major determinant of firms' dividend policy. Firms which have higher risk profiles are more likely to maintain lower dividend payout policy compared with those with lower risk profiles. Using β value of a firm as a measure of its market risk, Rozeff (1982), Lloyd *et al.* (1985), and Collins *et al.* (1996) found a significantly negative relationship between β and dividend payout. Their findings suggest that firms having a higher level of market risk will pursue lower dividend payout policy. D'Souza (1999) also suggests that risk is significantly and negatively related with firms' dividend payout. We expect risk to be negatively related to dividend payout.

We control for size of the market. This is defined as ratio of market capitalization to GDP. Size of the market is used as a proxy for capital market access. Firms with better access to the capital market should be able to pay higher dividends (Aivazian and Booth, 2003). It is expected that a positive relationship will exist between market capitalization and dividend payout policy.

We also control for two macroeconomic variables: inflation and GDP per capita. Inflation is the inflation rate. GDP per capita is log of GDP per capita and is included as a measure of the country's income level.

3.2 Model specification

We estimate the following panel data regression model:

$$Y_{it} = \alpha + \lambda Invt_{it} + \partial Fin_{it} + \beta X_{it} + \mu_{it} \quad (1)$$

where subscript i and t represent the country and time, respectively. Y is a measure of dividend payout. *Invt* is a measure of investment opportunity set. *Fin* are measures of corporate finance variables including, financial leverage, external finance, and debt maturity. X are the control variables and include profitability, risk, stock market capitalization, inflation, and GDP per capita. μ is the error term. Using this model, it is possible to investigate the effects of investment opportunity set and corporate finance on dividend payout policy.

3.3 Estimation issues

This study adopts a panel data method given that it allows for broader set of data points. Therefore, degrees of freedom are increased and collinearity among the explanatory variables is reduced and the efficiency of economic estimates is improved. Also, panel data can control for individual heterogeneity due to hidden factors, which, if neglected in time-series or cross section estimations leads to biased results (Baltagi, 2005). The panel regression equation differs from a regular time-series or cross-section regression by the double subscript attached to each variable. The general form of the model can be written as:

$$y_{it} = \alpha + X'_{it}\beta + \mu_{it} \quad i = 1, \ldots, N; \; t = 1, \ldots, T \quad (2)$$

where α is a scalar, β is $KX1$ and X_{it} is the it th observation on K explanatory variables. We assume that the μ_{it} follow a one-way error component model:

$$\mu_{it} = \mu_i + \nu_{it} \quad (3)$$

where μ_i is time-invariant and accounts for any unobservable individual-specific effect that is not included in the regression model. The term V_{it} represents the remaining disturbance, and varies with the individual countries and time. It can be thought of as the usual disturbance in the regression. The choice of the model estimation whether random effects or fixed effects will depend on the underlying assumptions. In a random effect model, μ_i and V_{it} are random with known disturbances. In the fixed effects model, the μ_i are assumed to be fixed parameters to be estimated and the remainder disturbances stochastic with V_{it} independent and identically distributed, i.e. $\nu_{it} \sim iid(0, \sigma_\nu^2)$. The explanatory variables X_{it} are assumed independent of the V_{it} for all i and t. We use the Hausman (1978) specification test in choosing the appropriate model. We report the results of the Hausman specification test in Table III.

4. Empirical results

4.1 Descriptive statistics

Table I presents the descriptive statistics of the dependent and independent variables. The sample covers 34 emerging countries over a 17-year period, 1990-2006. It reports

	Mean	SD	Min	Max
Dividend payout	0.32	0.49	0.00	3.93
Investment opportunities	1.05	0.52	0.06	5.01
Financial leverage	1.17	127.58	0.00	12.99
External finance	−0.01	5.27	−0.24	0.79
Deb maturity	0.58	11.83	0.22	1.00
Profitability	6.66	5.37	−17.79	51.90
Risk	−3.37	4.60	−58.81	61.89
Market capitalization	49.74	66.52	0.00	528.49
Inflation	0.0261	0.2169	−0.0016	4.5060
GDP per capita	8.04	1.09	5.74	10.22

Table I.
Descriptive summary statistics

the mean and standard deviation of all the variables used in the study as well as the number of observations over the sample period. The mean value for the dependent variable (dividend payout) is 0.32, implying that across the sample countries the average dividend payout is 32 percent. There is, however, a variation in the dependent variable across the countries over the time period as shown by standard deviation of 0.49 with a minimum and maximum dividend payout of 0.00 and 3.93, respectively.

The mean investment opportunity set measured by the Tobin's q is 1.05 with a variation of 0.52. All the countries have positive investment opportunities with minimum and maximum values of 0.06 and 5.01, respectively. Financial leverage, measured by the debt to equity ratio has a mean value of 1.17 and has a standard deviation of 127.58. External finance registers an average value of −0.01 over the period with a standard deviation of 5.27. Debt maturity has a mean figure of 0.58, indicating that short-term debt accounts for 58 percent of total debt. Profitability defined in terms of return on assets also registers an average value of 6.66 percent. The standard deviation is also shown as 5.37. Risk shows a mean value of −3.37. Stock market capitalization to GDP has a mean value of 49.74 percent. The minimum and maximum values for this variable are 0.00 and 528.49, respectively, with a variation of 66.52. The average inflation rate and GDP per capita are 2.61 and 8.04 percent, respectively (Figure 1).

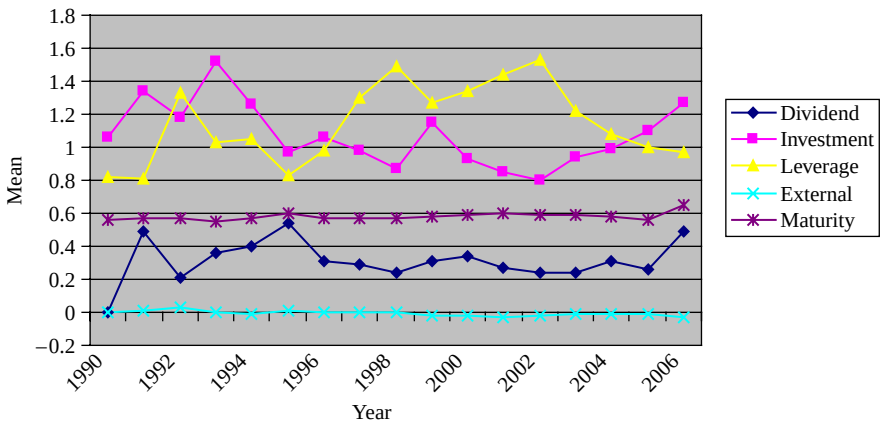

Figure 1.
Dividend, investment, leverage, external finance, and debt maturity

4.2 Correlation analysis

We test for possible degree of multi-collinearity among the regressors by including a correlation matrix of the variables in Table II. Dividend payout shows significantly positive correlations with debt maturity, profitability, and GDP per capita. Investment opportunity set exhibits significantly negative correlations with financial leverage, inflation, and GDP per capita, but shows significantly positive correlations with external finance, debt maturity, profitability, and market capitalization. There is a significant but negative correlation between financial leverage and profitability and a positive correlation between financial leverage and risk. External finance shows significant and positive correlations with profitability and inflation but a negative correlation with GDP per capita. Debt maturity is significantly and negatively correlated with GDP per capita. There are significant and negative correlations between profitability and risk, market capitalization, as well as GDP per capita. However, we found positive correlation between profitability and inflation. There are statistically and significant positive correlations between risk and market capitalization, and GDP per capita. Market capitalization is also positively correlated with GDP per capita. Overall, the magnitude of the correlation coefficients indicates that multi-collinearity is not a potential problem in the regression models.

4.3 Panel regression results

Both fixed and random effects specifications of the model were estimated. After which the Hausman (1978) test was conducted to determine the appropriate specification. We report the results of the Hausman test in Table III. The test statistics are all significant at 1 percent, implying that the fixed effects model is preferred over the random effects. The Hausman specification test suggests we reject the null hypothesis that the differences in coefficients are not systematic.

The results indicate a statistically significant but negative relationship between investment opportunities and dividend payout ratio. It could be inferred that firms with high investment opportunities are more likely to exhibit low dividend payout ratio. In other words, firms with high investment opportunities are more likely to pursue a low dividend payout ratio since dividends and investment represent competing potential uses of a firm's cash resources. Paying low dividends means that such firms could retain enough funds to finance their future growth and investments. Gaver and Gaver (1993) note that firms with high growth potential or investment opportunity set are expected to pay low dividends, since investment and dividends are linked through the firm's cash flow identity. This result is consistent with the results of some prior empirical studies (Rozeff, 1982; Lloyd *et al.*, 1985; Gaver and Gaver, 1993; Collins *et al.*, 1996; Gul and Kealey, 1999; Abbott, 2001; Jones, 2001; Amidu and Abor, 2006), but contradicts the findings of Aivazian and Booth (2003).

On corporate finance, various measures of corporate finance were used including, financial leverage, external financing, and maturity of debt. All the corporate finance measures exhibit positive relationships with dividend payout. However, our results do not show any significant relationship between these measures and dividend payout. This could mean that corporate finance is not an important determinant of the dividend behaviour of emerging market firms. In other words, it may suggest that dividend decisions are taken independent of decisions on corporate financial policy.

Table II. Correlation matrix

	Dividend payout	Investment opportunity	Financial leverage	External finance	Debt maturity	Profit	Risk	Market cap	Inflation	GDP per capita
Dividend payout	1.0000									
Investment opportunity	−0.0267 (0.5638)	1.0000								
Financial leverage	−0.0058 (0.9002)	−0.0818 (0.0660)	1.0000							
External finance	−0.0157 (0.7355)	0.0909 (0.0500)	−0.0659 (0.1560)	1.0000						
Debt maturity	0.1467 (0.0015)	0.1620 (0.0003)	−0.0027 (0.9521)	−0.0027 (0.9521)	1.0000					
Profitability	0.2024 (0.0000)	0.2335 (0.0000)	−0.2287 (0.0000)	0.0992 (0.0327)	0.0467 (0.2973)	1.0000				
Risk	−0.0272 (0.5582)	0.0460 (0.3197)	0.0949 (0.0399)	0.0202 (0.6635)	0.0070 (0.8802)	−0.1489 (0.0012)	1.0000			
Market cap	0.0082 (0.8693)	0.2608 (0.0000)	−0.0724 (0.1312)	−0.0422 (0.4013)	−0.0347 (0.4697)	−0.1674 (0.0005)	0.3104 (0.0000)	1.0000		
Inflation	0.0665 (0.1843)	−0.1132 (0.0183)	−0.0256 (0.5947)	0.0854 (0.0897)	0.0236 (0.6245)	0.0811 (0.0935)	−0.0175 (0.7272)	−0.0737 (0.1087)	1.0000	
GDP per capita	0.0973 (0.0514)	−0.1333 (0.0053)	−0.0147 (0.7590)	−0.0988 (0.0490)	−0.1313 (0.0060)	−0.3385 (0.0000)	0.1225 (0.0142)	0.3905 (0.0000)	−0.0261 (0.5681)	1.0000

Notes: *p*-values are in parentheses; Tobin's q is used as a proxy for investment opportunities; financial leverage is the ratio of debt to equity; external finance is the ratio of external finance to total finance; debt maturity is the ratio of short-term debt to total debt; profitability is net profit as a percentage of assets; risk is defined in terms of O-score; market capitalization is stock market capitalization as a percentage of GDP; inflation is the inflation rate; GDP per capita is the log of GDP per capita

	(1)		(2)		(3)	
Investment opportunities	−0.1779	(−2.56)*	−0.1843	(−2.63)*	−0.1811	(−2.61)*
Financial leverage	0.0003	(1.37)				
External finance			0.0002	(0.05)		
Debt maturity					0.0058	(1.33)
Profitability	0.0301	(4.14)*	0.0277	(3.88)*	0.0290	(4.06)*
Risk	0.0048	(0.91)	0.0049	(0.92)	0.0049	(0.94)
Market capitalization	−0.0018	(−2.21)*	−0.0018	(−2.17)*	−0.0019	(−2.24)*
Inflation	0.0002	(1.27)	0.0002	(1.18)	0.0002	(1.21)
GDP per capita	0.0132	(0.06)	−0.0179	(−0.08)	0.0005	(0.00)
Constant	0.2909	(0.17)	0.5991	(0.34)	0.1071	(0.06)
R^2	0.10		0.09		0.10	
F-statistic	5.51		5.20		5.50	
Prob > F	0		0		0	
Hausman test, $\chi^2(7)$	18.26	0.0056	24.05	0.0005	16.59	0.0203

Notes: *Means significant at 1 percent level; all regressions include a constant; T-statistics are in parentheses; Tobin's q is used as a proxy for investment opportunities; financial leverage is the ratio of debt to equity; external finance is the ratio of external finance to total finance; debt maturity is the ratio of short-term debt to total debt; profitability is net profit as a percentage of assets; risk is defined in terms of O-score; market capitalization is stock market capitalization as a percentage of GDP; inflation is the inflation rate; GDP per capita is the log of GDP per capita

Table III.
Regression model results: dividend payout

The results also reveal a statistically significant positive relationship between profitability and dividend payout ratio. This signals the fact that a firm's profitability is considered an important factor in influencing dividend payment and that a highly profitable firm is more likely to declare and pay high dividends. Clearly, profitable firms are able to accumulate enough earnings over time and, therefore, may be capable of supporting high dividend payments to their shareholders. This result amply supports our hypothesis of a positive relationship between firm profitability and dividend payout ratio. This finding seems to provide strong support for the residual cash flow theory of dividends and is also consistent with prior empirical studies (Baker *et al.*, 1985; DeAngelo and DeAngelo, 1990; Pruitt and Gitman, 1991; Jensen *et al.*, 1992; Aivazian and Booth, 2003; Amidu and Abor, 2006).

A priori, risk should have a negative influence on dividend policy. In other words, firms with high risk tend to pursue a low dividend payout policy. Surprisingly, the results of this study, however, show a positive but insignificant relationship between risk and dividend payout ratio. This may suggest that, in the case of emerging markets, risk does not seem to play a role in explaining firms' dividend payout decisions.

The results show a significantly negative relationship between the ratio of market capitalization to GDP and dividend payout. This indicates that as the stock market develops, firms tend to pursue low dividend payout policy. A higher ratio suggests a higher stock market development and this may influence investment growth of firms. According to Braun and Johnson (2005), stock markets can influence the level of investment. Therefore, stock market development should positively correlate with investment growth. This is even evident from our correlation matrix in Table II. It stands to reason that, in order to finance that level of investment, firms would pursue low dividend payout policies.

Considering the differences in the levels of economic growth across the countries, one would have expected variations in corporate dividend policies across the various countries. However, the results of this study fail to register any significant relationship between the macroeconomic variables and dividend payout policy, suggesting that inflation and GDP per capita may not be important in influencing dividend payout decision of emerging market firms.

5. Conclusions

This paper examined the effects of investment opportunity set and corporate finance on dividend payout policy of firms in emerging markets, covering the period 1990-2006. This study presents important and interesting evidence regarding the effects of investment opportunities and corporate finance on dividend payout policy. The results suggest that investment opportunity set is a major determinant of firms' dividend payout policy. Our findings imply that firms with high investment potentials would pursue very low dividend payout policy in order to retain funds to finance their investments. On the other hand, as suggested by Gaver and Gaver (1993), contractual arrangements encourage firms without profitable investment opportunities to pay higher dividends, rather than to undertake negative net present value projects. This finding clearly supports several previous empirical studies in this area (Gaver and Gaver, 1993; Gul and Kealey, 1999; Abbott, 2001; Jones, 2001). In addition, the results of this study showed insignificant relationships between all measures of corporate finance and dividend payout. This finding is indicative of the fact that, decisions regarding dividend payout may be taken independent of corporate financial policy. Firm profitability and stock market capitalization were also identified as important in explaining corporate dividend payout policy. Profitable firms are more likely to satisfy their shareholders by supporting high dividend payments. However, firms in relatively well-developed markets tend to exhibit low dividend payout policy. High stock market capitalization may signal growth potentials of the firms and, therefore, would require funds to finance such growth. The effect then would be that firms would be interested in low dividend payments.

This current study has shed light on the significance of investment opportunity set and corporate finance in explaining the dividend payout policy of emerging market firms. It is clear from the study that in emerging markets, the main factors driving dividend policy decisions are investment opportunity set, firm profitability, and stock market development. These findings suggest that firms with higher investment opportunities and operating in relatively developed stock markets would retain adequate financing for future investments as long as such investment projects yield positive net present values. However, profitable firms that do not have positive net present value investments may be expected to pay dividends rather than retain such profits for investment projects that would not maximise shareholder value. Future research is, however, necessary to further our understanding on this issue and to build on some of the findings provided by this paper.

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