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Investors’ power and the dividend cost minimization model: Which one better explains the dividend policy in Pakistan?

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This paper posits that the relevance and indeed the assumptions of the dividends cost minimization model are restricted to those countries where shareholders rights are well protected. Alternatively, we propose an “investor power” hypothesis, which is closely akin to the La Porta et al. (2000) “outcome hypothesis”. Our hypothesis states that the determining factor of dividends payout in a weak legal system is not the minimization of agency costs, instead it is the presence of certain powerful outside investors who can force firms to pay out dividends. Using two variants of the dividends cost minimization model and a modified version of the dividends partial adjustment model on a data set for 183 Pakistani listed firms, our results partially support the investor power hypothesis. Results of the mean-comparison tests as well as the regression models show that dividend-payout ratio decreases with the ownership percentage of individual shareholders and the incumbent managers. Our empirical results indicate that there is only weak evidence that institutional investors can force managers to pay dividends. Among the other variables, dividend payout ratio increases with the size of a firm and ownership percentage of associated companies, and decreases with financial leverage, coefficient of variation of net income, and growth opportunities.

Key words: Ownership structure, dividend policy, investors’ power, cost minimization model of dividend.

INTRODUCTION

Dividends are considered a reward for equity holders. However, the payment of dividends is not mandatory. In practice, dividend decisions are linked to agency costs (Jensen, 1986; Easterbrook, 1984), the firm’s investment opportunities (Lease et al., 2000), existing leverage and available financing options (Smith and Warner, 1979; Rozeff, 1982), dividends and personal taxes (Brennan, 1970), the preferences of different groups of investors clienteles effects (John and Williams, 1985), the relative power of insiders and outsiders (La Porta et al., 2000), and the past payout and future profitability (Lintner, 1956; Brav et al., 2005). Despite an enormous amount of research in this area, dividends remain a puzzle for theoretical and empirical researchers (Black, 1976). In a frictionless world, the payment of dividend is irrelevant to the value of a firm since investors can generate home-made dividends (Miller and Modigliani, 1958, 1963). However, in less-than-perfect markets, an optimal dividend payout ratio exists that maximizes the firm’s value. For example, several theoretical and empirical studies show when information asymmetry exists between managers and external shareholders, dividends can be used as a signaling device. Bhattacharya (1979), Miller and Rock (1985) and Ambarish et al. (1987) argued
that increases or cuts in dividends send signals regarding the future profitability of a firm. However, recent tests have indicated that the empirical support for the signaling model is found to be weak (DeAngelo et al., 1996; Benartzi et al., 1997).

In relatively less efficient markets, a more powerful explanation of dividend payout policy has recently emerged in the context of agency models. In an agency framework, financial economists offer two opposing explanations for dividend payouts. Studies like Hart and Moore (1974), Jensen (1986), Fluck (1998, 1999), Zwiebel (1996), Myers (1998), Easterbook (1984) and Gomes (2000) suggest that dividends curtail cash flows under the managers’ discretion and/or force managers to seek outside financing, which would subject them to the scrutiny of external markets. According to this agency view, one would expect outsiders to have a strong preference for dividends. Extending the agency model, Rozeff (1982) conjectured that dividend payout is an outcome of the trade-off between the firm’s agency costs and transactions costs. He called his model as dividend cost minimization model (DCM). According to him, outside minority shareholders will demand higher dividends to overcome agency problems, however, these shareholders will be less forceful in their demands for dividends if they believe that dividend payment would subject the firm to higher transaction costs of external financing. However, La Porta et al. (2000) argues that dividends are not voluntarily paid by the management and that the rights of the minority shareholders in a legal system determine the dividend payout ratio. If minority shareholders have stronger rights, they can force management to payout dividends through different tactics. They found support for their hypothesis through a sample of 4000 firms from 33 countries. We are of the view that a strong rationale exists for La Porta et al. (2000) argument especially in developing economies where the corporate governance indices are low and the rights of minority shareholders are not well protected. The agency model is based on the assumption that even minority shareholders can squeeze dividends out of firms and minimize agency costs. However, this assumption may seem unreasonable given imperfections of the legal and governance mechanisms in developing economies.

It should be really hard for weak external shareholders to force well-entrenched managers or a large inside-blockholder to pay dividends in a weak legal system. The purpose of this study is to empirically evaluate the above hypotheses using a sample of Pakistani listed firms. In Pakistan, the ownership structure of firms is different from those of the Anglo Saxon countries like the United State and the United Kingdom where dispersed shareholdings are ubiquitous. Pakistan lacks widely held corporations. The ownership of the firms is concentrated in a few hands, with large shareholders having ample incentives and ability to control. These settings can be used to test the validity of La Porta et al. (2000) hypothesis in comparison to the dividend cost minimization hypothesis. The overall theme of this paper is broadly in line with that of La Porta et al. (2000). However, our paper is different from theirs on two accounts. First, we use a within-country sample and distinguish between different classes of shareholders on the basis of their relative powers to force firms to disgorge cash. For example, we expect that outside individual shareholders are incapable of forcing entrenched managers to pay dividends. Hence dividend payout ratio would be negatively associated with the ownership percentage of individual shareholders. In contrast, the dividend cost minimization model of Rozeff (1982) implies a positive relationship between the two. Similarly, we proxy the investors powers with the ownership percentage of institutional investors, who have the comparative advantage of information and being vocal about their rights. Being more powerful than individual investors, they can force firms to pay dividends. Other proxies that we use for investors’ powers are the ownership percentage of directors, associated companies, and five largest shareholders. In contrast, La Porta et al. (2000) use an index that measures protection of investors’ rights in different countries. We argue that such an index may not be useful for a single country sample, as any specific group of investors is treated equally by the law. Secondly, we also test La Porta et al. (2000) outcome hypothesis (our close counterpart for their outcome hypothesis is “the investors’ power hypothesis”) with Lintner’s (1956) Partial adjustment model.

The study makes several contributions to the literature. First, this paper extensively examines the relationship between ownership variables and dividend policy in Pakistan. This area has attracted little attention of empirical researchers in Pakistan for the obvious reason of non-availability of ownership structure data in an organized form. The few existing studies on this topic in Pakistan lack rigor not only in terms of data set and insufficient number of ownership variables, but also in terms of proper econometric modeling. Secondly, this study extends the cost minimization model of Rozeff (1982) by splitting the data set on the basis of 50th percentile of ownership variables. We hypothesize and test that the effects of transaction costs and agency costs on dividend payout ratio are not straight-forward; instead the presence of one moderates the impact of the other on dividend policy. This conjecture allows us to split the data into two subsamples using the 50th percentiles of the ownership variables like percentage of ownership held by institutional investors, outside individual investors, directors (insiders) and associated companies. Thirdly, it is important to note that La Porta et al. (2000) make a specific case for the determinants of dividend payout ratio in weak legal systems. The results of their study have not been validated rigorously, especially on within-country samples. This study attempts to validate their findings. The rest of the paper is organized as follows: Section 2 briefly reviews the existing literature in light of which we draw testable hypotheses. Data, methodology and model specification are discussed in Sections 3 and 4 highlights
the descriptive statistics and discusses the regression results. Finally, Section 5 presents concluding remarks.

THEORETICAL FRAMEWORK AND RELATED LITERATURE

This section discusses the theoretical considerations surrounding dividends, agency problems, dividends cost minimization model, and the investors powers. Also, proxies for transaction cost variables and ownership variables are defined in light of existing research. Finally, testable hypotheses are developed towards the end of this section.

Agency problems and dividends

Jensen and Meckling (1976) in their seminal study argue that managers act opportunistically to increase their personal benefits at the expense of external shareholders. Therefore, non-payment of dividends can effectively increase the chances of agents to misappropriate the shareholders' wealth towards their personal gains. As such, it is in the best interest of managers to pay lower dividends. In addition, managers may not want to pay dividends because the payment of dividends can subject managers to the scrutiny of external capital markets (Easterbrook, 1984).

Agency problems, transaction costs and dividends

Rozef (1982) conjectures that optimal dividend payout ratio is determined by two factors; the agency costs of free cash flows and the transaction costs of outside financing. Agency costs decrease with the payment of dividends as such payments reduce the amount of free cash flows under the control of self-serving managers. Secondly, dividends payment could subject managers to the scrutiny of external capital providers and thus serve as a monitoring device. On the other hand, dividend payments would make it more likely for a firm to seek external financing and sustain transaction costs associated with it. An optimal dividend payout ratio will be one that minimizes the sum of agency costs and transaction costs.

Agency problems, transaction costs, investors' power, and dividends

Rozef (1982) implicitly assumes that outside shareholders are powerful enough to force management to pay dividends. In other words, outside shareholders would require a payout ratio that minimizes transaction and agency costs. However, this assumption might not hold true in weak legal systems where outside shareholders are not well-protected. La Porta et al. (2000) draw a testable hypothesis from the agency framework of Jensen (1986) that managers would not pay dividends unless outside shareholders are powerful enough to force them to do so. Several studies show that investors' pro-tection is weak and corporate governance index is low in emerging economies like Pakistan. The following section identifies proxies for agency costs, investors' powers and the transactions costs in the light of the theoretical and empirical research.

Explanatory variables: Proxies for investor's powers and agency costs

Institutional ownership (INST)

Due to their large stake and monitoring capability, institutional investors are assumed to reduce the free-riders' problem which is more pronounced in the case of dispersed individual-ownership. Being good monitors, institutional investors can reduce the type of agency problems proposed by Jensen and Meckling (1976). In the context of agency model, Rozeff (1982) and Easterbrook (1984) argue that dividends can serve as a monitoring tool because it makes it more likely for a firm to be out in the capital market more often than not. The scrutiny of external markets would result in lower agency cost. Zeckhauser and Pound (1990) conjecture that institutional investors can be a surrogate for dividends induced monitoring. It can be hypothesized that the percentage of institutional shareholding will be negatively related to dividend payout ratio. However, in a system where managers do not pay dividends voluntarily even if they do not have value-enhancing projects, institutional investors would play a more direct role to reduce agency costs. They will use their powers to force managers to pay dividends. They could do so because they are more informed, active and aware of their rights as compared to individual investors. Along similar lines, Zeckhauser and Pound (1990) argue that large shareholders such as institutional shareholders do not monitor managers directly but instead force them to pay dividends. According to this alternative hypothesis, a higher percentage of institutional investors should increase dividend payout ratios. Besides this power hypothesis, the dividend preference hypothesis also predicts a positive relationship between institutional shareholders and dividend payout. Some studies have found evidence that institutional shareholders have a preference for dividends due to their assets-liabilities structures (Short et al. 2002).

Individual's ownership (IND)

Established financial literature has clearly established that individual shareholders lack incentives to monitor managers and impose checks on their activities. This is
referred to as the free riders’ problem. Grossman and Hart (1980) and Demsetz (1983) argue that minority shareholders get paybacks in proportion to their ownership but the cost they pay for monitoring is relatively high. Resultantly, individual shareholders prefer dividend-induced monitoring instead of personal monitoring. In the cost minimization model of Rozeff (1982), higher percentage of individual shareholders should lead to a higher dividend payout ratio so as to reduce the amount of free-cash flow under the control of managers. However, in legal systems where individual shareholders are not well protected, like the one in Pakistan, the most relevant question is whether individual shareholders can force managers to disgorge cash or not? In such legal systems, the power of individual shareholders to force firms to pay dividends should be a major determining factor of dividend payout ratio (La Porta et al., 2000). Thus, a more relevant hypothesis in Pakistan’s context will be that individual shareholders are toothless and their higher ownership percentage would result in lower payout ratio.

**Directors’ ownership (DIRC)**

When inside directors have a higher stake in a firm, their interest is more aligned with the interest of outside shareholders (Jensen and Meckling, 1976). This renders dividends a useless tool for controlling agency problems. Consequently, we can expect an inverse relationship between directors’ ownership and dividend payout. In contrast, we argue that the owner-directors do not pay dividend because dividend-induced monitoring is not needed, but because their larger stakes give them more power to retain in the firm. Higher retention allows the controlling shareholders to enjoy more perks and expropriate outside minority shareholders. Thus the negative association between directors’ ownership and dividend payout should be considered as an expropriation of minority shareholders at the hands of the directors. To distinguish between these two alternative hypotheses, we estimate two different versions of the cost minimization model as is explained in the materials and methods section of this work.

**Associated companies (ASSO)**

Group companies have historically been viewed as a useful mechanism to help each other in financial matters, technology transfers, experience sharing, and also to overcome many imperfections in product, capital, and the ongoing labor markets Tarzijan (1999). Recently, several studies have shifted the focus towards internal conflicts of interests that shareholders in business groups can experience (Dewenter et al., 2001; Weinstein and Yafeh, 1998; Morck et al., 1998; Berger and Ofek, 1995). On the other hand, it is believed that business groups do not act opportunistically enough due to their reputation as these groups are highly visible. Their visibility might be due to their big sizes and/or usually the famous business tycoons or personalities with bureaucratic and political backgrounds that sit on their managerial boards (Dewenter et al., 2001).

On the other hand, a complex web of intra-group transactions might make it more difficult for analysts and investors to know about their opportunistic behavior. Thus the complexity of any intra-group transaction can increase the probability of opportunistic transactions. In the agency framework, a higher ownership percentage of group companies should reduce agency conflict between shareholders and managers, but it might lead to severe conflicts of interest between majority-insiders and minority-outsiders. Thus, if the group-reputation hypothesis holds, group companies should pay more dividends, as the transaction costs of such companies are assumed to be low due to the group size and reputation. However, if complexity of transaction hypothesis is true, then group companies should pay lower dividends, which would imply that the group companies are involved in minority shareholders exploitation, and/or the group has lower reputation and is facing higher transaction costs.

**Block holders (BLOC)**

Owing to their large ownership stake, outside block holders have sufficient incentives to monitor managers’ activities, so they can reduce agency costs (Shleifer and Vishny 1986), suggesting that block holders and dividends are alternative forms of monitoring. However, dividend is a costly option of monitoring and hence firm with large shareholders would like to use the less costly option (Goergen et al., 2005). Similarly, Rozeff’s (1982) model suggests that large block holders prefer lower or no dividends in order to reduce transaction costs. All of these studies use the term “block holders” to refer to shareholders who are not part of the executive management. However, our data do not allow us to differentiate between internal and external block holders.

In Pakistan, family holdings are typical and prominent in the corporate sector. Therefore, in the absence of such information, the compelling assumption is that block holders are either directors or family members of the top management. Based on this assumption, BLOC should reduce problems between management and shareholders, but it may also give rise to another agency problem that exists between majority and minority shareholders. Therefore, a testable hypothesis for BLOC is that the dividend payout ratio is lower when BLOC is above the 50th percentile. Our measure of block holding is BLOC which is dummy variable. BLOC takes the value of 1 if the ownership percentage of the top 5 shareholders is above its 50th percentile, otherwise zero.
Explanatory variables: Transaction costs variables

Size
Large firms are more diversified and less likely to experience financial distress (Titman and Wessels, 1988), face lower expected costs of bankruptcy as a percentage of total firm value, and generate more information about themselves than small firms (Petit and Singer, 1985). These factors facilitate large firms’ access to external financing at a lower cost than small firms. In the cost minimization model, keeping other things constant, large firms should have a higher dividend payout ratio. Our measure of size of the firm is represented by SIZE and is calculated as a log of total assets.

Growth
A growing firm is more likely to require external financing than a non-growing firm. According to pecking order theory, growing firms should rely first on internally generated funds, debt financing should be considered as a second option and finally equity should be referred to. This implies a negative relationship between the firm’s growth rate and its dividend payout ratio. Under the cost minimization model, growing firms will maintain lower dividend payout ratio because they are considered riskier than more mature and stable firms and face higher transaction costs of external financing. We have measured growth as geometric mean of annual percentage increase in total assets and is represented by GROW.

Leverage and cash flow volatility
Leverage increases a firm’s cash flow sensitivity to external shocks (Hamada, 1972). A firm with more volatile cash flows can be frequently in need of external financing (Rozef, 1982). Additionally, a higher leverage ratio reduces the likelihood that the firm will obtain more external financing easily and cheaply (Ozkan and Ozkan, 2004). Consequently, it is hypothesized that both leverage and cash flow volatility are negatively related to dividend payout ratio. We measure the financial leverage of a firm by dividing total debts by total assets. Cash flow volatility is measured as the coefficient of variation of net income and is represented by LEV and CV accordingly.

Interaction of the agency cost variables and the transaction cost variables
Besides the straightforward influence of the agency cost variables and the transaction cost variables, we hypothesize that these variables also affect the dividend payout ratio. As an example, consider the case of firm size, which is a proxy for transaction costs, and the percentage of ownership by institutional shareholders, which is a proxy for agency costs and/or the relative power of investors.

From the perspective of agency costs, institutional shareholders can monitor the activities of managers, thereby becoming a surrogate for dividend-induced, external monitoring. The presence of institutional shareholders would control agency costs, and the need to reduce free-cash flow through dividend payments would become less compelling. On the other hand, large size of the firm facilitates external financing. Dividends payment will not subject large firms to costly external financing. Based on the theoretical arguments and justifications, we propose the following hypotheses:

H$_1$: Where the percentage of institutional shareholders is high, dividend payments would be less responsive to the size of a firm.

However, they would be more responsive to the size of the firm where institutional shareholding is less or zero. From the investors’ power perspective, an alternative hypothesis could be developed by considering two firms operating in a country in which shareholders’ rights are not well protected, that is, a country with more institutional shareholders, and in another country that has fewer institutional shareholders. Institutional shareholders in the first firm will be comparatively more powerful and could force managers to pay dividends as long as the firm does not incur higher transaction costs.

As the firm size increases, the transaction costs would decrease accordingly and the dividend payments will be more responsive to the size of the firm in the first case as compared to the second one. Since the shareholders’ rights are not well protected, managers in the second firm would not pay dividends even if the firm had lower transaction costs. Thus, the dividend payout ratio will be less responsive to the size of the second firm in which there are fewer institutional shareholders.

H$_2$: Where the percentage of institutional shareholders is high, dividend payment will be more responsive to the size of a firm.

However, in firms where institutional shareholding is less, dividend payout will be less responsive to the size of the firm. We can generalize this to other transaction cost variables, for example, in the presence of strong institutional shareholders, dividend payout ratio will be more responsive to growth, leverage and cash flow volatility than it would be in the absence of strong institutional shareholders.

Further we can generalize this to other ownership variables. Dividend payout ratio will be more responsive to all transaction cost variables in firms with lower percentage of managerial and individual ownership than other firms. All these hypotheses are based on the investors’ power hypothesis. These hypotheses are tested by
splitting the data into groups that are based on the 50th percentiles of the ownership variables.

DATA AND METHODOLOGY

Sample and data sources

The study uses the financial and ownership data of 200 firms listed on the Karachi Stock Exchange over the period 2003 to 2008. Initially, the sample consisted of all the firms with the data available on the pattern of shareholdings. We also require the firms to satisfy the following criteria:

1. A firm should not be financially-distressed such as firms with negative equity.
2. A firm should not be a financial firm.
3. A firm should not be owned by the Government of Pakistan.
4. Firms with abnormal or influential data can create goodness of fit problems and make the generalization of results difficult. For this reason, all such firms or observations were identified with Cook’s D and/or studentized residuals and were removed.

It is important to note that the data on ownership variables is available but sometimes with gaps. This restriction necessitated the time series averages of the ownership variables for every cross-sectional unit. Theoretically, averages can reduce or miss yearly variations in the ownership variables. However, it is expected that this problem would not be severe in Pakistan. Block holdings are ubiquitous and many firms are owned by families and business groups in Pakistan. Due to these features, ownership structures of the listed firms can be expected to show considerable persistence over short periods. Data on ownership variables is obtained from the annual reports of the sample firms. The firms listed on KSE are required by the Companies Ordinance, 1984 and by the Code of Corporate Governance under clause XIX (i) to provide information on the pattern of shareholdings in their annual reports. Financial data has been taken from the “Balance Sheet Analysis of Joint Stock Companies Listed on the Karachi Stock Exchange”, a publication of the State Bank of Pakistan.

Specifications of the models

A panel data framework is used to test the hypotheses developed in the previous section. Panel data, as noted by Hsiao (1986), has several distinct advantages: it provides more degrees of freedom, increases variations in the data and thereby reduces the chances of multicollinearity, and makes it possible to control for fixed effects, etc. We test the hypotheses using the following three alternative methods.

Cost minimization model, the baseline estimation

The first method is the simple cost minimization model of dividends. This method uses a dummy variable scheme for the agency cost variables. These dummy variables are defined on the basis of 50th percentile of each respective agency cost variable. For example, a dummy variable INST, the institutional shareholders, assumes the value of 1 for a firm where the ownership percentage of institutional shareholders is above the 50th percentile; otherwise it assumes a value of 0. Similarly, dummy variables DIRC, IND, ASSO, and BLOC are defined for directors, individual shareholders, associated companies, and block holders, respectively. Out of a total of 923 observations, dividend was 0 in 467 cases. This is a very high ratio of left-censored observation to the total. In such a case, simple ordinary least squares (OLS) would give inconsistent estimates. An appropriate option in a censored data is to use a Tobit regression. The dividends cost minimization model estimated with Tobit regression is thus:

\[
DIV_i = a + \beta_1(SIZE_i) + \beta_2(LEV_i) + \beta_3(GROW_i) + \beta_4(CV_i) + \beta_5(DIRC_i) + \beta_6(IND_i) + \beta_7(BLOC_i) + \beta_8(ASSO_i) + \beta_9(INST_i) + \beta_{10-14}(YEARS) + \beta_{15-42}(INDUST_i) + \epsilon_{it}
\]

Where,

- \(DIV_i\) is the dividend payout ratio of firm \(i\) at time \(t\).
- All specifications include a full set of industry dummies (\(INDUST\)) and year dummies (\(YEARS\)).
- \(SIZE, LEV, GROW\), and \(CV\) are proxies for the transaction cost variables are discussed in the previous section.
- \(DIRC, IND, BLOC\), and \(ASSO\) are the proxies for agency cost variables discussed in the previous section of this study.
- \(\epsilon_{it}\) is the error term.

Cost minimization model, the interaction effects

To test the interaction effects, the second method splits the data into groups based on the 50th percentile of the ownership variables. On the basis of each ownership variable, the data is divided into two groups and a separate regression is estimated for each group. In doing so, our interest lies in comparing the coefficients of transaction cost variable in both regressions to determine interaction effects between transaction costs and agency costs variables.

\[
DIV_i = a + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 GROW_{it} + \beta_4 CV_{it} + \beta_{5-32} INDUST_{it} + \beta_{33-37} Year_{it} + \epsilon_{it}
\]

The partial adjustment model

Besides the above, the investors’ power hypothesis is also tested with the Partial Adjustment Model of Lintner (PAM). PAM is modified in a way that it accommodates the ownership variables. A large number of financial economists favor Lintner (1956) model, which shows that the dividends follow an adjustment process. In this section we use the famous partial adjustment model of Lintner (1956) to provide further evidence on the investors’ power hypothesis. Lintner (1956) hypothesized that shareholders do not prefer breaks in the patterns of dividends. Management tries to ensure more stable dividend policies. Any change in dividend policy is linked to the earnings level such that the new dividend level could be maintained in the future. This way firms choose a desired payout ratio on the basis of last year’s dividend payment as well as the current year’s earning. We further argue that this preference is not
uniform for all types of investors. Especially, we hypothesize that the power of investors would be a determining factor in influencing the dividends sensitivity to the current earnings. The target dividend in the partial adjustment model of Lintner (1956) is given by:

$$D_t^* = rE_t, \quad 0 < r \leq 1,$$

(3)

Where the target dividend payout ratio ($D_t^*$) is dependent upon the current level of earning ($E_t$) and the sensitivity of dividends ($r$) to current earnings. When a firm moves away from previous level of dividends to current level of dividends, the change necessarily reflects the change toward the target dividend payout. According to Lintner (1956), this change in dividend is given by;

$$D_t - D_{t-1} = c(D_t^* - D_{t-1}) + \varepsilon_t, \quad 0 < c \leq 1;$$

(4)

The $(D_t - D_{t-1})$ reflects change in dividends from previous period to current period and $c$ shows the speed of adjustments. Substituting Equation 3 and 4, the following testable model is obtained.

$$D_t = a + (cr)E_t + (1-c)D_{t-1} + \varepsilon_t$$

(5)

In the light of the discussion in Section 2.4.1 through 2.4.6, we argue that $r$ will be high in firms where there are powerful external shareholders than in those firms where there are weak external and/or powerful internal shareholders. The modified partial adjustment model that we test is as follows;

$$D_t = a + (cr)E_t + crE_t^* Own_k + (1-c)D_{t-1} + \varepsilon_t$$

(6)

Where $D_t$ is the dividend payout ratio of firm $i$ at time $t$. And $c$ and $r$ are speed of adjustments and payout ratios, respectively. $Own_k$ represents different ownership variables. The ownership variables are in dummy form. The variable $E$ is a measure of a firm’s earnings which is measured as the ratio of net income to total assets. To avoid the problem of circularity that may be induced by including all ownership variables in one regression; we estimate the above equation separately for each ownership variable. This also helps in avoiding the multicollinearity problem.

RESULTS AND DISCUSSION

In this Section, we present and discuss descriptive and empirical results of various specifications discussed in the data and methodology section.

Descriptive statistics

Panel A of Table 1 reports descriptive statistics of the variables used in this study. The mean dividend payout ratio during the period 2003 to 2008 is 11.9%. The ratio is considerably lower than dividend payout ratios in developed countries. For example, Short et al. (2000) report the mean payout ratio of 26.4% for a sample of 200 United Kingdom firms during the period 1988 to 1992 (Table 1 in Short et al., 2000). Similarly, for a sample of 266 firms Gill et al. (2010) found that United State firms paid on average 27% of their earnings in dividends in the year 2007. It will be interesting to know that such a lower payout ratio in Pakistan is an indication of expropriation of minority shareholders by directors and family members.

This will be analyzed in a systematic manner through our empirical models. Panel B of Table 1 reports mean dividend payout for two groups of firms. The groups are based on the 50th percentile of financial and ownership variables. The results indicate that mean dividend payout is significantly higher in large firms; firms with more associated holdings and higher percentage of block holdings than other firms. The dividend payout ratio is significantly lower in firms with higher ownership percentage of directors, individual shareholders, and in firms with more volatile cash flows and higher leverage.

To examine the association of dividends with the explanatory variables from a different perspective, Panel C of Table 1 reports mean values of financial and ownership variables of dividend-paying and non-dividend-paying firms. Dividend-paying firms are more profitable, are larger in size and have more institutional shareholders. Non-dividend paying firms have higher leverage ratios, have volatile cash flows and have more individual and directors’ shareholdings. However, dividend payment is not statistically related to the growth of firms or to the percentage of block holdings.

Regression models

Cost minimization model

Table 2 reports the results of the cost minimization model. Specification (1) and (2) show the results of Tobit and OLS regressions, respectively. In both of these, ownership variables are in dummy form. For every ownership variable, a separate dummy variable is formed which assumes a value of 1 for values of the variable that are above the 50th percentile, otherwise zero. Specification (3) shows beta coefficients of the OLS regression. It would show the relative importance of the explanatory variables in determining the dividend payout ratio. Coefficients of the explanatory variables are reported outside the parenthesis whereas their standard errors are reported in the parenthesis. All transaction cost variables have the expected signs and are significant in all specifications, with the exception of GROW. The results show that large firms distribute more profits in dividends than small firms. This result supports our descriptive results. This shows that larger firms raise external financing without delays and face lower costs of external financing. Our results also indicate that firms with volatile cash flows and higher leverage distribute lower dividends. This implies that firms facing higher operating and financial risks find external financing costly and prefer to rely more on internally generated funds. These results are consistent with Rozeff (1982) and Khan (2006).
The investors' power hypothesis receives partial support in some of the ownership variables. The dummy variable \( \text{INST} \) for institutional ownership has a positive coefficient but is insignificant in specifications (1) and (2). Similar findings are also shown in descriptive statistics in Panels B and C of Table 1. In unreported regression results, the coefficient of \( \text{INST} \) is positive when \( \text{INST} \) is included in the regression in continuous form instead of a dummy form. Also results of the interaction effect model in indicate that institutional shareholder make the dividend payout ratio more sensitive to the transaction cost variables. These results partially support our investors’ power hypothesis. The predictions of DCM fails in the case of outside individual shareholders. It is a widely held view that the free-riders' problem is severe in the case of individual investors. The DCM predicts that outside minority shareholders will demand more dividends to curtail cash flows under managers' discretion. The negative coefficient of \( \text{IND} \) in fact shows that the dividend payout ratio decreases with an increase in ownership of individual shareholders. In contrast to the explanation of DCM, the power-hypothesis explains the negative coefficient
negative coefficient of IND. Since individual investors lack incentives and resources to force managers to pay dividends, managers successfully find ways to eschew dividends especially in a legal system in which effective protection for individual shareholders is not available.

Cost minimization model

Tobit regression estimates of the dividend cost minimization model based on 183 KSE listed firms from 2003 to 2008:

\[
DIV_{it} = a + \beta_1(SIZE_{it}) + \beta_2(LEV_{it}) + \beta_3(GROW_{it}) + \beta_4(CV_{it}) + \beta_5(DIRC_{i}) + \beta_6(IND_{i}) + \\
\beta_7(BLOC_{i}) + \beta_8(ASSO_{i}) + \beta_9(INST_{i}) + \beta_{10-14}(YEARS) + \beta_{15-42}(INDUST) + \varepsilon_{it}
\]

Table 2. Results of the cost minimization model

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE</td>
<td>0.055 (0.008)*</td>
<td>0.024 (0.004)*</td>
<td>0.23 (0.004)*</td>
</tr>
<tr>
<td>LEVE</td>
<td>-0.303 (0.046)*</td>
<td>-0.113 (0.023)*</td>
<td>-0.14 (0.023)*</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.035 (0.081)</td>
<td>-0.083 (0.042)**</td>
<td>-0.058 (0.042)**</td>
</tr>
<tr>
<td>CV</td>
<td>-0.291 (0.033)*</td>
<td>-0.119 (0.017)*</td>
<td>-0.241 (0.017)*</td>
</tr>
<tr>
<td>INST</td>
<td>0.01 (0.018)</td>
<td>0.004 (0.009)</td>
<td>0.012 (0.009)</td>
</tr>
<tr>
<td>DIRC</td>
<td>-0.041 (0.021)***</td>
<td>-0.038 (0.011)*</td>
<td>-0.114 (0.011)*</td>
</tr>
<tr>
<td>IND</td>
<td>-0.058 (0.019)*</td>
<td>-0.034 (0.01)*</td>
<td>-0.103 (0.01)*</td>
</tr>
<tr>
<td>BLOC</td>
<td>-0.033 (0.02)***</td>
<td>0.008 (0.01)</td>
<td>0.025 (0.01)</td>
</tr>
<tr>
<td>ASSO</td>
<td>0.047 (0.022)**</td>
<td>0.021 (0.012)***</td>
<td>0.062 (0.012)***</td>
</tr>
<tr>
<td>Constant</td>
<td>-.042 (.155)</td>
<td>0.211 (0.061)***</td>
<td>0.211 (.061)**</td>
</tr>
<tr>
<td>No. of observations</td>
<td>923</td>
<td>923</td>
<td>923</td>
</tr>
<tr>
<td>LR chi^2(40)</td>
<td>587.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob &gt; chi^2</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo R^2</td>
<td>0.7179</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-115.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R^2</td>
<td></td>
<td>0.46</td>
<td>0.46</td>
</tr>
<tr>
<td>Adj. R^2</td>
<td></td>
<td>0.43</td>
<td>0.43</td>
</tr>
<tr>
<td>Observations censored at dvd=0</td>
<td>467</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results significant at 1, 5, and 10% are denoted by *, **, and *** respectively.
should reduce agency as well.

significant ownership variables. Panel A shows that the data set Table 3 presents results of the regressions run on the institutional shareholding is above the 50th percentile, the constant is 18.4% (significant at 5%) whereas it is 15.1% (insignificant) in the regression where the institutional shareholding is below the 50th percentile. These results imply that, keeping other factors constant, dividend payout is high when there are shareholders who are more informed, vocal and capable of enforcing their rights, such as institutional shareholders. Secondly, the results suggest that institutional shareholders also care about a firm’s cost of capital. When the transaction costs are potentially high, they are not forceful in their demand for dividend. However, the presence of institutional shareholders makes the dividend payment more responsive to the changes in the transaction costs variables. This is evident from the comparison of coefficients of SIZE, LEV, CV, and GROW in both high- and low-INST regressions. All of the transaction costs variables in both the high- and low-INST regressions are according to the expectations. The coefficients of SIZE, LEV, CV, and GROW are significantly lower in regressions where institutional ownership is below the 50th percentile.

The investors’ power hypothesis cannot be rejected in case of individual shareholdings. In the regression where individual shareholding is above the 50th percentile, the coefficient of CONST is 14% whereas it is almost double (28.7%) in the regression where the individual shareholding is below 50th percentile. In addition, many of the transaction costs variables have larger coefficients in the low-IND regressions as compared to their coefficients in the high-IND regressions. If predictions of the DCM model were valid, the results should have been the other

Split sample regressions

Table 3 presents results of the regressions run on the data sets that are split on the basis of 50th percentile of different ownership variables. Panel A shows that the dividend payout increases significantly in the presence of institutional shareholders. In the regression where shareholding is below 50th percentile, the change in the transaction costs variables have larger coefficients in the low-IND regressions as compared to their coefficients in the high-IND regressions. If predictions of the DCM model were valid, the results should have been the other

<table>
<thead>
<tr>
<th>Variable</th>
<th>Panel A</th>
<th>Panel B</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE</td>
<td>HIGH-INST</td>
<td>HIGH-DIRC</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.189 (0.04)*</td>
<td>-0.145 (0.024)*</td>
</tr>
<tr>
<td>GROW</td>
<td>-0.096 (0.06)</td>
<td>0.021 (0.047)</td>
</tr>
<tr>
<td>CV</td>
<td>-0.17 (0.02)*</td>
<td>-0.042 (0.188)**</td>
</tr>
<tr>
<td>CONST</td>
<td>0.184 (0.09)**</td>
<td>0.08 (0.056)</td>
</tr>
<tr>
<td>R²</td>
<td>0.45</td>
<td>0.32</td>
</tr>
<tr>
<td>F-test</td>
<td>12.29*</td>
<td>7.71*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Panel A</th>
<th>Panel B</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE</td>
<td>LOW-INST</td>
<td>LOW-DIR</td>
</tr>
<tr>
<td>LEV</td>
<td>-0.119 (0.03)*</td>
<td>-0.15 (0.041)*</td>
</tr>
<tr>
<td>GROW</td>
<td>-0.074 (0.06)</td>
<td>-0.076 (0.067)</td>
</tr>
<tr>
<td>CV</td>
<td>-0.094 (0.02)</td>
<td>-0.222 (0.026)*</td>
</tr>
<tr>
<td>CONST</td>
<td>0.151 (0.106)</td>
<td>0.353 (0.077)*</td>
</tr>
<tr>
<td>R²</td>
<td>0.53</td>
<td>0.52</td>
</tr>
<tr>
<td>F-test</td>
<td>16.02*</td>
<td>14.79*</td>
</tr>
</tbody>
</table>

Results significant at 1, 5, and 10% are denoted by *, **, and ***, respectively.
### Table 4. Results of the partial adjustment model with interaction terms.

<table>
<thead>
<tr>
<th>Variable</th>
<th>ROA×DIRC</th>
<th>ROA×IND</th>
<th>ROA×INST</th>
<th>ROA×BLOC</th>
<th>ROA×ASSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>(D_{t-1})</td>
<td>0.458(0.032)*</td>
<td>0.453(0.032)*</td>
<td>0.48(0.031)*</td>
<td>0.474(0.031)*</td>
<td>0.46(0.032)*</td>
</tr>
<tr>
<td>(E)</td>
<td>0.328(0.056)*</td>
<td>0.356(0.056)*</td>
<td>0.258(0.057)*</td>
<td>0.093(0.067)</td>
<td>0.144(0.059)**</td>
</tr>
<tr>
<td>(E \times DIRC)</td>
<td>(-0.197(0.068)^*)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(E \times IND)</td>
<td></td>
<td>(-0.228(0.061)^*)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(E \times INST)</td>
<td></td>
<td></td>
<td>(-0.03(0.062))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(E \times BLOC)</td>
<td></td>
<td></td>
<td></td>
<td>(0.212(0.067)^*)</td>
<td></td>
</tr>
<tr>
<td>(E \times ASSO)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.2(0.069)^*)</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.065(0.064)</td>
<td>0.066(0.064)</td>
<td>0.062(0.064)</td>
<td>0.064(0.064)</td>
<td>0.065(0.064)</td>
</tr>
</tbody>
</table>

### Goodness of Fit Statistics

<table>
<thead>
<tr>
<th></th>
<th>F-Statistics</th>
<th>P-value(F-Statistics)</th>
<th>R²</th>
<th>Adj.R²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26.95</td>
<td>27.32</td>
<td>26.66</td>
<td>27.06</td>
</tr>
<tr>
<td></td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>0.5581</td>
<td>0.5615</td>
<td>0.5632</td>
<td>0.5592</td>
</tr>
<tr>
<td></td>
<td>0.5374</td>
<td>0.541</td>
<td>0.5421</td>
<td>0.5385</td>
</tr>
</tbody>
</table>

Results significant at 1, 5, and 10% are denoted by *, **, and ***, respectively.

way around. According to agency theory, individual shareholders are a poor monitor that is why they would prefer dividend-induced monitoring. However, our results support the alternative explanation of investors’ power hypothesis. Our results suggest that dividend payout ratio is not high in firms where majority of shareholders are outside individual shareholders even if the firm has lower transaction cost. It clearly indicates that dividend payout is not an outcome of the wishes of helpless shareholders like dispersed outside individual shareholders. The results in Table 3 lend further support to our explanation in cost minimization model regarding \(DIRC\) and the investor’s power hypothesis. Results in Table 3 shows that dividends are less responsive to all other transaction cost variables except \(SIZE\), in firms where directors’ ownership is high. Moreover, the constant of high-\(DIRC\) regressions is in line with the descriptive statistics and the regression results in the cost minimization model. \(BLOC\) represents ownership of top 5 block holders. In Pakistan, the block holders are family members, directors, or associated companies in many cases. The results seem to partially support our hypothesis that dividend payout decreases with the increase in ownership percentage of block holders. There is an indication that large insiders expropriate outside minority shareholder as shown by the statistically significant constant of the regression which is 21.8% in the low-\(BLOC\) regression. The sensitivity of transaction costs variables is not uniform in low- and high-\(BLOC\) regressions.

### Results of split-sample regressions

Table 3 displays results of the split-sample regressions for a sample of 183 firms listed on KSE over the period 2003 to 2008. Panel A displays results of Equation (2) which is estimated if the given ownership variable is above its 50th percentile. Panel B reports estimated values of Equation (2) if the given ownership variable is below its 50th percentile.

\[
DIV_{it} = a + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 GROW_{it} + \beta_4 CV_{it} + \beta_5 INDUST_{it} + \beta_6 \text{Year}_{it} + \epsilon_{it}
\]

### Results of the partial adjustment model

Results of the regressions estimated from Equation 6 are given in Table 4. In almost all regressions \((1 – c)\) is in the range of 0.45 to 0.48 and accordingly the speed of adjustment is in the range of 52 to 55%. In line with the previous results, the incremental coefficients of \(ROA \times DIRC\) and \(ROA \times IND\) are negative and significant. Our explanation for the negative coefficient of \(ROA \times IND\) is that individual shareholders are weak and cannot influence the dividend to be more sensitive to the level of earnings. In the case of directors’ ownership, the negative and statistically significant coefficient is an indication that directors are more interested in retaining higher portion of the current earnings. Again this lends support to our earlier assertion that powerful insiders prefer higher retention rate to accumulate cash flows for their perks or for the expropriation of minority shareholders. The interaction terms of \(BLOC\) and \(ASSO\) are positive and statistically significant. The results in the
previous sections as well as this section consistently show that dividend payout ratio move positively with the ownership of foreign investors and associated holdings. Though group-reputation hypothesis explains the positive association of dividends with the ownership percentage of associated holdings, our explanation for the foreign ownership is rather inconclusive. Apparently, investors across the borders are in a weak position to force firms to pay dividends. Thus the alternative explanation is that these investors are petty investors. They are highly biased towards firms that have good history of dividend payout. This selectivity bias needs to be investigated in depth which we leave for future studies. The results also show that ownership percentage of 5 blockholders increases the dividends sensitivity to current earnings. This again affirms the investors’ power hypothesis. Interestingly, the coefficient on institutional ownership is not statistically significant. We can link this to our results in the previous Section (Table 2). Results in Table 2 show similar findings. Regression estimates of the partial adjustment model PAM based on 183 KSE listed firms from 2003 to 2008

\[ D_{it} = a + (c r_i)E_{it} + c r_i E_{it} * Own_{it} + (1 - c)D_{it-1} + \varepsilon_{it} \]

Conclusion

This paper challenges the validity of the dividends cost minimization model in a weak legal system in an emerging economy, such as that of Pakistan. This paper’s main hypothesis holds that managers do not pay dividends willingly in a weak legal system unless there are powerful external shareholders. In contrast, the cost minimization model assumes that even weak external shareholders, such as dispersed individual shareholders, can ask for and receive dividends in a bid to curtail agency problems. Similarly, our proposed hypothesis is in contrast to the view that institutional shareholders play a monitoring role and substitute dividend-induced monitoring. Instead, we propose that the relative information advantage and the size of their shareholdings place institutional shareholders in a better position to force managers to pay dividends. Similar hypotheses are developed for a number of ownership variables in this study.

These hypotheses are tested comprehensively in three different ways, through (1) the cost-minimization model, (2) the cost-minimization model with interaction effects (splitting the data set on the basis of 50th percentile of ownership variables), and (3) the dividends partial adjustment model. All these models are estimated in a framework of panel data comprising a cross-section of 183 KSE-listed firms from 2003 to 2008. To account for the censored-nature of the dividend data, we estimate the two cost minimization models with Tobit regressions. Almost in all models, dividend-payout ratio decreases with the ownership percentage of individual shareholders and incumbent managers. These results lend strong support to our investors’ power hypothesis. The ownership dummy for institutional investors is statistically significant only in the interaction effects’ model. This implies that institutional investors are either not powerful enough or they are not active investors in Pakistan to influence dividend decisions. The ownership of associated companies is positively related to dividend payout ratio in all models. These results show that group reputation hypothesis dominates the power hypothesis. In the cost minimization models, all the transaction cost variables have expected signs, and are statistically significant, with the exception of the firms’ past growth rate. Our results are robust across the three regression models. Furthermore, results of the regression models are consistent with the descriptive statistics.

REFERENCES


