

OWNERSHIP STRUCTURE, FIRM-SPECIFIC FACTORS AND PAYOUT POLICY: EVIDENCE FROM THE GCC REGION

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Abstract

How to cite this paper: Al-Malkawi, H. A. N. (2017). Ownership structure, firm-specific factors and payout policy: Evidence from the GCC region. *Corporate Ownership & Control*, 15(1-2), 476-486.
<http://doi.org/10.22495/cocv15i1c2p16>

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ISSN Online: 1810-3057

ISSN Print: 1727-9232

Received: 05.11.2017

Accepted: 14.12.2017

JEL Classification: G32, G35

DOI: 10.22495/cocv15i1c2p16

This paper draws on the author's previously published works. The purpose of this study is to examine the effect of ownership structure and firm-specific factors on the payout policy of firms listed on the largest stock market in the Gulf Cooperation Council (GCC) region namely the Saudi Stock Exchange (SSE). The paper uses a balanced panel dataset of 69 nonfinancial companies (552 firm-year observations) and employs the random effects Tobit specification. The results show that government, institutional and family ownership positively influence dividend payments in Saudi Arabia. Furthermore, dividend payments are positively associated with firm-specific factors such as profitability, firm size and firm maturity but negatively related to business risk and leverage. The findings are consistent with the agency costs and reputation hypotheses. The paper provides some practical implications for the Capital Market Authority of Saudi Arabia (CMA), corporations and investors.

Keywords: Ownership Structure, Payout Policy, Tobit Specification, GCC Region, Saudi Arabia

Acknowledgment: I would like to thank the Editorial team of the journal for the professional editing process and also thank anonymous reviewers for constructive comments and suggestions which have helped to improve the final version of this manuscript.

1. INTRODUCTION

Since the mid-1950s, a considerable body of literature has emerged examining why firms pay dividends in developed and emerging markets. However, to date, the issue remains controversial. In their pioneering study, Miller and Modigliani (1961) establish that under the assumptions of the perfect capital market, dividend policy is irrelevant and has no impact on firm's value. Since then, many financial researchers challenge Miller and Modigliani's proposition and argue that once the assumptions of the perfect capital market are relaxed dividend policy may matter.

It has been argued that the patterns of corporate payout policies not only vary over time but also across countries, especially between developed and emerging markets (e.g. Al-Malkawi, 2008). In general, firms in emerging capital markets face more financial constraints and limited resources to finance their investment opportunities, which may result in more reliance on retained earnings and accordingly lower payout ratios.

However, consistent with the "outcome model" proposed by La Porta et al. (2000), the lower corporate governance standards and weaker shareholder protection in such markets suggest higher payout ratios to mitigate agency problem and to maintain a good reputation with shareholders. In the case of Gulf Cooperation Council (GCC) countries in general and Saudi Arabia in particular, companies operate in a quite distinctive environment. For instance, there are no personal taxes, low or no corporate taxes and companies have less financial constraints than their counterparts in other emerging markets. Furthermore, like many emerging markets, Saudi Arabia is characterized by concentrated ownership (Al-Malkawi, Bhatti and Magableh, 2014).

These differences and the peculiarities of the Saudi market raise the question about the extent to which competing dividend policy theories such as agency, reputation and signaling hypotheses can explain payout policies in such market. Thus, the current study will attempt to answer this question.

Saudi Arabia is the biggest and the largest economy in the GCC region. It is the only country in the Middle East region among the constituents of the G20 and its economy accounts for one-fifth of the region's total GDP (El-Erian et al, 1996). The market capitalization of Saudi equity market is \$203.0 billion (as of 06/30/2014); this would place Saudi Arabia as the 9th largest emerging market country, similar in size to Malaysia or Mexico (Parametric, 2014). In 2016, the market capitalization of Saudi companies reached to approximately \$448.83 billion. The average dividend payouts of Saudi listed companies have improved from 45.6% in the 2003-2007 period to 63.4% in the 2008-2012 period (AlJazira Capital, 2013). Similarly, with increasing earnings and dividend payouts, the aggregate dividend yields of Saudi companies improved from 3.7% in 2003 to 4.0% in 2012 (AlJazira Capital, 2013, p.2). As can be seen from the aforesaid statistics, Saudi companies exhibit high payout ratios and relatively high dividend yields. Hence, this study is an empirical attempt to examine what factors determine payout policies in such under-researched market.

This paper makes several contributions to our body of knowledge. First, an examination of the effect of ownership structure on dividend payout policy in emerging equity markets such as Saudi Stock Exchange (SSE) is currently not well established in the literature. In addition, the existing work on emerging markets has produced mixed results. Therefore, the current study contributes to the literature by providing a direct test of the impact of ownership structure, such as government, institutional and family shareholdings on the payout policy of Saudi public holding companies. To the best of our knowledge, the present paper is the first of its type to examine the impact of three ownership variables on payout policy within the Saudi context. Second, the paper also examines the relationship between dividend policy and six firm-specific factors for companies listed in SSE. Third, the paper aims to confirm or contradict the current evidence from Saudi Arabia. Fourth, the outcomes of this study could form the basis of future comparative research into other GCC or emerging markets. Finally, the paper will attempt to provide valuable evidence to Saudi investors and policy makers.

The main purpose of this paper, therefore, is to examine the impact of ownership structure and firm-specific factors on the payout policy of firms listed on the Saudi Stock Exchange (SSE). The paper employs panel data analysis to examine 69 non-financial companies (552 firm-year observations) for the eight-year period from 2005-2012. Tobit specification is used to estimate those factors affecting the level of dividend payments in Saudi Arabia. For comparison purposes only, pooled OLS estimation is also reported.

The following section presents the theoretical background, hypotheses development and relevant literature. The next section describes the data and research methodology followed by the empirical results. The final section concludes the paper.

2. THEORETICAL FRAMEWORK, TESTABLE HYPOTHESES AND RELEVANT LITERATURE

In this section, we follow a three-step process. Firstly, we present the theoretical background of the relationship between ownership structure and firm-specific factors and the dividend payout policy,

supported by the relevant literature. Secondly, based on the theoretical background and the empirical work we develop the testable hypotheses. Finally, we select and describe the appropriate proxy variables supported by the literature.

2.1. Ownership structure

In countries with weak corporate governance and low level of protection for minority shareholders, ownership structure can play a significant role in monitoring managers and therefore reducing agency costs. This suggests less reliance on dividends as a mechanism to reduce agency costs. However, different types of controlling owners may have different influences on corporate dividend payouts (Maury and Pajuste, 2002). According to Faccio, Lang and Young (2001), the existence of multiple owners might alleviate expropriation of minority shareholders by the controlling shareholder. This implies that firms with multiple owners will pay higher dividends, which in turn suggests a positive relationship between dividend payouts and multiple owners. However, it could be argued that the presence of multiple large shareholders also mitigates the agency problem. This implies a negative rather than positive relationship between multiple owners and dividend payouts. The present study will examine three major modes of ownership namely government, institutional and family shareholdings.

2.1.1. Government ownership

The government or its agencies own and control a large number of publicly traded firms in many countries around the world including Saudi Arabia. Having the government (or its agencies) as a firm's largest shareholder may influence its dividend policy. In state-controlled firms, the government acts on behalf of the citizens (the ultimate owners) who are not directly in control. Therefore, in such firms, "a double principal-agent [conflict] even exists" (Gugler, 2003, p.1301). That is, on the one hand, agency problems may arise between citizens and government representatives, as they might not work for the citizens' best interests, and on the other hand between state-owner and other managers. The payment of dividends may reduce the cash flow available to managers, and hence help to alleviate agency problems. Several studies report a positive relationship between dividend payouts and government ownership. For example, using Austrian data, Gugler (2003) finds that state-controlled firms have large target payout ratios. More recently, Al-Malkawi (2007) documents that state-controlled firms pay higher dividends in Jordan. In the context of Saudi Arabia, Al-Ajmi and Abo Husain (2011) find no evidence of the relationship between government ownership and dividend policy. However, using GCC data including Saudi Arabia, Al-Kuwari (2009) obtains a positive relationship between government ownership and dividend payout ratios.

Therefore, consistent with agency costs theory, other things being equal, state-controlled firms are expected to pay more dividends. The percentage held by the government (STATE) is used as a measure of government ownership and the following hypothesis is formulated:

H1: Other things being equal, the percentage of government ownership is expected to be positively associated with dividend payments.

2.1.2. Institutional ownership

As far as ownership structure of the firm is concerned, institutional investors can play a significant role in monitoring corporate managers, therefore reducing agency costs (McConnell and Servaes, 1990, and Crutchley, et al., 1999). The economies of scale of large shareholders (such as institutions) enable them to perform the monitoring role more effectively and at relatively low cost. Moreover, institutional investors are in a better position, compared to small investors, to takeover inefficient firms, which may oblige managers to be more efficient. Shleifer and Vishny (1986) argue that small shareholders favour high dividend payments to attract and compensate large shareholders in order to perform the role of monitoring the management. However, Short, Zhang, and Keasey (2002, p.108), show that “the arm’s length view of investment held by many institutional investors, coupled with the incentives to free ride with respect to monitoring activities, suggests that institutional shareholders are unlikely to provide direct monitoring themselves”. Numerous studies have documented that corporate or institutional investors tend to be attracted to high-dividend stocks (see for example Han, Lee and Suk, 1999, Allen, Bernardo and Welch, 2000, and Short et al., 2002). Redding (1997) argues that institutional investors are more likely to invest in dividend-paying stocks for tax and fiduciary reasons. Black (1976) points out that certain portfolio managers deem that it is imprudent to invest in non-dividend-paying stocks. Thus, a positive relationship between institutional ownership and dividend payouts is hypothesised. The percentage held by the institutional investors (INST) is used to measure the institutional ownership and the following hypothesis is proposed:

H2: Other things being equal, the percentage of institutional ownership is expected to be positively correlated with dividend payments.

2.1.3. Family ownership

In family-controlled firms, shareholder-manager conflict is significantly reduced since the managers and the ultimate owners are usually the same and large shareholders (families) have strong incentives and an ability to perform the monitoring role. As a result, the use of dividends as a tool to reduce agency costs or information asymmetry between managers and owners is less valuable, and accordingly, family-owned and controlled firms are expected to have low dividend payout ratios. In addition, the legacy and rent extraction/private benefit hypotheses predict that family-controlled firms pay low dividends. The legacy hypothesis asserts that such companies pay low dividends to preserve the wealth for the next generation of the family while the rent extraction/private benefit hypothesis predicts that family-controlled firms will set a low dividend payout policy in order to retain and use firms’ resources for their own benefits (see Amoako-Adu, Baulkaran and Smith, 2014, p.2).

However, the reputation hypothesis predicts that investors may pay less for family-owned firms’ stocks because they may feel that family managers may expropriate cash flows from the firm. In order to entice investors to hold restricted voting shares and alleviate concerns about expropriation, family-owned firms may set a high payout policy (see, Amoako-Adu et al., 2014). Furthermore, Al-Kuwari

(2009, p.59) maintains that “the main aim of non-financial firms listed on the GCC countries is to reduce agency conflict and maintain firm reputation”. Therefore, based on the preceding assertion and consistent with Al-Kuwari (2009), we expect a positive relationship between family-owned firms and dividend policy in the case of Saudi Arabia. The percentage held by the family owners (FMLY) is used to measure the family ownership and the following hypothesis is formulated:

H3: Other things being equal, the percentage of family ownership is expected to be positively correlated with dividend payments.

2.2. Firm-specific factors

2.2.1. Profitability

Dividends are the distribution of a firm’s profits to shareholders. Thus, it can be argued that profitability of a firm is the key determinant in making dividend policy decisions. It is expected that profitable firms are more likely to pay a dividend as compared to non-profitable firms. The pecking order hypothesis, proposed by Myers (1984) and Myers and Majluf (1984), suggests that firms finance their investments with the internally generated (retained earnings) and if external financing is needed they prefer to issue debt before issuing equity to reduce the costs of information asymmetry and other transactions costs. This financing hierarchy thesis might also have an effect on the dividend decision. That is, taking into account the costs of issuing debt and equity financing, less profitable firms will not find it optimal to pay dividends, *ceteris paribus*. On the other hand, highly profitable firms are more able to pay dividends and to generate internal funds to finance investments. Therefore, the pecking order hypothesis provides a plausible explanation for the relationship between profitability and dividends. Prominent scholars such Fama and French (2001) interpret their results of the positive impact of profitability on the likelihood to pay dividends for US firms as consistent with the pecking order hypothesis (see also Fama and French, 2002).

In his classical study on how U.S. managers make dividend decisions, Lintner (1956) finds that the current earnings and previous dividends are the primary factors affecting dividend decision. Further, Baker, Farrelly and Edelman (1986) survey 318 firms listed on New York Stock Exchange and reached a result consistent with Lintner’s findings. In the more recent study, Baker et al. (2007) find that the level of current and future earnings is one of the key factors affecting dividend policy of Canadian dividend-paying firms. For emerging markets, Al-Malkawi (2007 and 2008) finds that profitability is the main determinant of both the level of dividend payments and the likelihood to pay dividends for companies listed on the Amman Stock Exchange, respectively. In the Saudi context, Al-Ajmi and Abo Husain (2011) report a positive relationship between profitability, measured by earnings per share, and the likelihood of paying dividends. More recently, using Tobit specification, Amina (2015) finds a positive association between firm profitability and dividend payout ratio in Saudi Arabia.

In the current study, we employ the return on equity (ROE) as a measure of profitability (PROF). Based on the above discussion and consistent with prior research, PROF is expected to be an important determinant of corporate dividend decision in Saudi

Arabia and increase the level of dividend payments. Thus, the following hypothesis is proposed:

H4: Other things being equal, profitable firms are expected to pay more dividends.

2.2.2. Business risk

Consistent with dividend signaling hypothesis, Chang and Rhee (1990, p.24) argue that “a firm with stable earnings can predict its future earnings with greater accuracy. Thus, such a firm can commit to paying larger portion of its earnings as dividends with less risk of cutting dividends in the future”. This suggests an inverse relationship between variability in earnings and dividend payouts. Baker et al. (2007) show that, the stability of earnings is considered to be a very important factor influencing dividend policy of Canadian dividend-paying firms. More recently, Baker and Powell (2012) report similar finding for Indonesian firm.

Furthermore, as agency theory predicts, dividend payments can mitigate the agency problem between principals (owners) and agents (managers). However, high payout ratios force companies to rely on external financing which in turn increases the transaction costs (Rozef, 1982). Thus, the benefits of agency costs mitigation are offset by higher transaction costs associated with the external financing. Holder, Langrehr and Hexter (1998) maintain that “underwriters charge more for issues of riskier firms” (p.77). Therefore, firms with higher business risk should pay less dividends. Several empirical studies have reported a negative relationship between business risk and dividend payouts including Crutchley and Hansen (1989), Holder et al. (1998), and Al-Najjar (2009), among others. However, Aivazian et al., (2003) find mixed results for the relationship between business risk and dividend payouts in emerging markets (see also Chang and Rhee, 1990).

Following Crutchley and Hansen (1989) we use the standard deviation of the return on assets as a measure for earnings variability i.e. business risk (see also Chang and Rhee, 1990, Aivazian et al., 2003 and Al-Najjar 2009). We refer to this variable as BRISK. Based on the foregoing discussion, the following hypothesis is proposed:

H5: Other things being equal, firms with more business risk are expected to pay lower dividends.

2.2.3. Firm size

Firm size may also affect corporate dividend policy. It has been argued that a large firm has better access to capital markets and finds it easier to raise funds with lower cost and fewer constraints compared to a smaller firm. This indicates that, other things being equal, larger firms have less reliance on the internally generated funds and therefore are more able to pay higher dividends (see, for example, Lloyd, Jahera and Page, 1985, Chang and Rhee, 1990 and Holder et al., 1998). The above assertion is, to a large extent, consistent with transaction costs explanation of dividend policy.

In addition, larger firms exhibit a higher level of information asymmetry and therefore higher agency costs. This implies that larger firms should pay higher dividends to mitigate these costs (see Zeng, 2003). Crutchley and Hansen (1989, p.43) argue that “to control equity agency costs, managers of larger firms should use ownership less (due to

liquidity costs) and should use dividends more (due to reduced floatation costs)”.

A wide range of financial literature has documented that size is a significant determinant of corporate dividend policy and is positively related to dividend payout ratios in developed as well as emerging markets (see, among others, Crutchley and Hansen, 1989, Chang and Rhee, 1990, Redding, 1997, Holder et al., 1998, Fama and French, 2002, Deshmukh, 2003, Al-Malkawi, 2008, and Al-Najjar, 2009). In the Saudi context, however, Al-Ajmi and Abo Husain (2011) find mixed results. Using two measures for size namely the natural logarithm of both total assets and market capitalization, the coefficient on size is found to be insignificant in relation to dividend payments but positive and significant with the likelihood of paying dividends. In addition, Amina (2015) reports a positive and significant relationship between size and dividend payouts in Saudi Arabia. Aivazian et al., (2003, p.386) examine the determinants of dividend policy for various emerging markets and concluded that “there is little evidence that business risk or size affects dividend policy in a significant and consistent way”. Such inconclusive evidence warrants further investigation.

To examine the impact of firm size on dividend policy the current paper employs the natural logarithm of total assets (SIZE). This proxy is widely used in the literature (see, Fama and French, 2002, Al-Najjar, 2009, and Al-Ajmi and Abo Husain, 2011, among others). Based on the aforesaid discussion and consistent with previous research SIZE is expected to have a positive impact on the dividend payments. This suggests the following hypothesis:

H6: Other things being equal, larger firms are expected to pay more dividends.

2.2.4. Leverage

When a firm acquires debt financing it commits itself to fixed financial charges embodied in the interest payments and the principal amount, and failure to meet these obligations may lead the firm into liquidation. The risk associated with high degrees of financial leverage may, therefore, result in low dividend payments because, ceteris paribus, firms need to maintain their internal cash flow to pay their obligations rather than distributing the cash to shareholders. Moreover, Rozeff (1982) points out that, firms with high financial leverage tend to have low payout ratios to reduce the transaction costs associated with external financing. Therefore, other things being equal, an inverse relationship between financial leverage ratio and dividends is expected. Several studies have found a negative association between leverage and dividends (see, for instance, Jensen, Solberg and Zorn 1992, Crutchley et al., 1999, Al-Malkawi, 2008 and Amina, 2015).

To test this hypothesis, the present study uses the ratio of short-term and long-term debt to total assets as a proxy for financial leverage (LEV). This measure has been frequently used in the literature (see, for example, Harada and Nguyen, 2011 and Al-Ajmi and Abo Husain, 2011). Thus, the following hypothesis is proposed:

H7: Ceteris paribus, firms with high leverage are expected to pay lower dividends.

2.2.5. Growth

Firms with high growth and investment opportunities will need the internally generated funds to finance those investments, and thus tend to pay little or no dividends. This prediction is consistent with the pecking order hypothesis proposed by Myers and Majluf (1984). Also, both residual and signaling theories have different explanation towards growth opportunities. Under the residual theory, companies with high growth opportunities tend to pay lower dividends because they may use the available funds to finance their investments with positive net present values. Under signaling perspective, high investment opportunities may be associated with high dividends as high-quality firms basically may pay dividend to signal their quality to the market. Furthermore, the transaction costs hypothesis predicts a negative relationship between growth and dividend payouts. That is, firms experiencing high growth need the internal funds to avoid transaction costs associated with the external financing (Holder et al., 1998).

Researchers such as Rozeff (1982), Jensen et al. (1992), Deshmukh (2003), and many others, have found a significant negative relationship between dividends and firms' investment opportunities. Barclay, Smith, and Watts (1995) document that, investment opportunities are significant determinant of corporate dividend policy. Fama and French (2001) affirm that investment opportunities influenced dividend decision. They find that firms with better growth and investments opportunities have lower payouts. Accordingly, we expect the firm's growth and investment opportunities to be negatively related to dividend payouts. To test this hypothesis, the current study employs the market value of equity to the book value of equity normalized by the number of shares outstanding (MBR) as a proxy for growth opportunities (see, for example, Barclay et al., 1995, Aivazian et al., 2003, Al-Malkawi, 2007 and Al-Najjar, 2009). Based on the aforesaid discussion the following hypothesis can be formulated:

H8: Other things being equal, firms with greater potential growth are expected to pay lower dividends.

2.2.6. Firm's age

Generally speaking, mature companies are likely to be in their low-growth phase with fewer investment opportunities (see Barclay et al., 1995, Grullon et al., 2002, and Deshmukh, 2003). These companies are relatively older and do not have the incentives to build-up reserves as a result of low growth and few capital expenditures, which enable them to follow a liberal dividend policy. On the contrary, new or young companies need to build-up reserves to face their rapid growth and financing requirements. Hence, they retain most of their earnings and pay low or no dividends. Other things held constant, as a firm gets older its investment opportunities decline leading to lower growth rates, consequently reducing the firm's funds requirements for capital expenditures. Hence, dividend payout should be positively related to the firm's age. In the present study, therefore, the age of the firm (AGE) is used as a control variable and as a proxy for the firm's maturity or growth opportunities (see, for example, Huergo and Jaumandreu, 2004 and Al-Malkawi, 2008). Based on the foregoing discussion, the following hypothesis is proposed:

H9: Other things being equal, mature firms with fewer investment opportunities are expected to pay more dividends.

3. DATA AND METHODOLOGY

3.1. The data

The main objective of this study is to examine the impact of ownership structure and firm-specific factors on corporate payout policy in Saudi Arabia. Due to different financial reporting, our sample includes only non-financial companies. The data is collected mainly from the annual report's publications of non-financial companies listed on the Saudi stock exchange (SSE). In Saudi Arabia, most companies publish their information on both the capital market website and their own websites. Usually, the published reports consist of financial as well as nonfinancial data such as income statements, balance sheets, cash flow statements and ownership structure. The current study covers the eight-year period from 2005 to 2012 for 69 non-financial companies listed on SSE. These companies represent 60.5% of the total non-financial firms listed in 2012.

In order to gain the maximum possible observations, pooled cross-section and time-series data is used. The analysis is based on balanced panel data with 552 firm-year observations (8 years \times 69 companies). The present paper includes both dividend-paying as well as non-dividend-paying firms. The exclusion of non-dividend-paying firms results in a well-known selection bias problem (see, for example, Deshmukh, 2003 and Al-Malkawi, 2008).

3.2. Methodology

To test the research hypotheses formulated above, two primary empirical models are developed. The first model examines the effect of ownership structure on dividend payout policy, the following censored (Tobit) regression is estimated:

$$DPS_{it} = \delta_0 + \delta_1 STATE_{it} + \delta_2 INST_{it} + \delta_3 FMLY_{it} + \varepsilon_{it} \quad (1)$$

where, for firm i in period t , the variables are described in Table 1 below and ε_{it} is the error term. Next, to test the hypotheses that the firm-specific factors affect payout policy in Saudi Arabia, the following model is written as:

$$DPS_{it} = \delta_0 + \delta_1 PROF_{it} + \delta_2 BRISK_{it} + \delta_3 SIZE_{it} + \delta_4 LEV_{it} + \delta_5 MBR_{it} + \delta_6 AGE_{it} + \varepsilon_{it} \quad (2)$$

Finally, following the standard literature on dividend policy, Model 1 is extended to control for the firm-specific factors, producing Model 3. We refer to this model as the general model and can be written as:

$$DPS_{it} = \delta_0 + \delta_1 STATE_{it} + \delta_2 INST_{it} + \delta_3 FMLY_{it} + \delta_4 PROF_{it} + \delta_5 BRISK_{it} + \delta_6 SIZE_{it} + \delta_7 LEV_{it} + \delta_8 MBR_{it} + \delta_9 AGE_{it} + \varepsilon_{it} \quad (3)$$

Table 1 also shows the expected sign for the independent variables in the regressions. As can be seen, six variables (STATE, INST, FMLY, PROF, SIZE and AGE) are expected to have positive signs (> 0), while three variables (BRISK, LEV and MBR) are predicted to bear negative signs (< 0). A positive

(negative) sign suggests that, ceteris paribus, the level of dividend payment, measured by dividend per share, increases (decreases) with the variable.

Table 1. Definition of variables and expected signs

Variables	Description	Expected sign
DIV	Dividend per share	Dependent variable
STATE	Government ownership measured by percentage of shares held by the government;	> 0
INST	Institutional ownership measured by percentage of shares held by institutions;	> 0
FMLY	Family ownership measured by the percentage of shares held by family;	> 0
PROF	Profitability measured by return on equity;	> 0
BRISK	Standard deviation of the return on assets as a measure of earnings variability (business risk);	< 0
SIZE	Size of the firm measured by natural logarithm of total assets;	> 0
LEV	Leverage measured by the ratio of total debt to total assets;	< 0
MBR	Market to book ratio as a proxy for growth and investment opportunities;	< 0
AGE	Age of the firm.	> 0

As stated earlier, Models 1 through 3 are estimated using the Tobit maximum likelihood estimator. The selection of Tobit model is necessitated by the unique nature of the dependent variable, dividend per share (DPS). It is well known that, in making dividend payout decision, companies have only two options, either to pay (positive) or not to pay dividends (zero). Therefore, there is what one calls a "mass point" in 0 because the dividends paid by firms can only be positive or nil. The appropriate technique, in this case, is to apply Tobit method of estimations (see Kim and Maddala, 1992).

Recall that, "because the dependent variable (*dividend payout*) does not assume negative values", the distribution can be considered censored to the left, a situation in which OLS can produce inconsistent estimates (Abreu and Gulamhussen, 2013, p. 60). Therefore, an alternative approach to model the determinant of dividend payouts is recommended using Tobit model such as the one described by Verbeek (2000, p. 340). If we consider $i=1,2,\dots, 69$ firms as panels and time period $t=1, 2, \dots, 8$ years (2005-2012), then the most appropriate

regression model for the amount of dividend paid by the firms can be expressed as follows:

$$y_{it}^* = x_{it}'\beta + \alpha_i + \varepsilon_{it} \quad (4)$$

In equation (4), generally, $i=1, 2, \dots, N$ and $t=1, 2, \dots, T$, whereas the observed dependent variable is based on dividend payments which is expressed as,

$$y_{it} = \begin{cases} 0 & \text{if } y_{it}^* \leq 0 \\ y_{it}^* & \text{if } y_{it}^* > 0 \end{cases}$$

In (4) above, we assume that the right hand side components of the model have the general assumptions; i.e., $(\varepsilon_{it}, \alpha_i) \sim BVN(0, 0, \sigma_\varepsilon^2, \sigma_\alpha^2)$ and the absence of a correlation between these two disturbances indicates zero covariances and correlations between the panels. Also, it assumes that all effects are uncorrelated across individuals (the random effects α_i and the error term ε_{it} are assumed to be $iid N(0, \sigma_\alpha^2)$ and $iid N(0, \sigma_\varepsilon^2)$, respectively, and independent of x_{i1}, \dots, x_{iT} , with zero means and variances σ_α^2 and σ_ε^2 . The Tobit model is estimated using the maximum likelihood estimation (MLE). Several studies have examined corporate payout policy using Tobit specification including Kim and Maddala (1992), Barclay, Smith and Watts, (1995), Al-Malkawi (2007), Al-Najjar and Hussainey (2009), Al-Kuwari (2009), Harada and Nguyen (2011), Al-Ajmi and Abo Husain (2011), Abreu and Gulamhussen (2013), Al-Malkawi, Bhatti and Magableh (2014), Amina (2015), among others. Having established that Tobit specification is the appropriate estimation method, our analysis will be based on the Tobit regressions' results. However, for comparison purpose only, we will also estimate the regression coefficients using pooled OLS.

4. EMPIRICAL RESULTS

4.1. Summary statistics and correlation among variables

Table 2 presents the summary statistics of all the variables used in the analysis. The table reports the number of observations (N), minimum (Min), maximum (Max), standard deviation (SD), mean, median, skewness, and kurtosis for each variable. As can be seen from the table, the variables included in the analysis seem to be not normally distributed as their values of the skewness and kurtosis statistics do not fall between -0.5 and +0.5 and -2 and +2, the rule of thumb, respectively (e.g., Al-Malkawi et al, 2014).

Table 2. Summary statistics for the dependent and explanatory variables

Variable	N	Mean	Median	SD	Min	Max	Skewness	Kurtosis
DPS	552	1.577	0.500	3.340	0.000	34.468	5.205	38.604
STATE	552	0.0985	0.000	0.199	0.000	0.835	2.316	7.566
INST	552	0.1005	0.000	0.154	0.000	0.660	1.763	5.755
FMLY	552	0.031	0.000	0.095	0.000	0.490	3.726	16.369
PROF	552	0.106	0.100	0.240	-2.937	3.178	-0.428	99.296
BRISK	552	0.109	0.056	0.179	0.012	1.052	4.313	22.104
SIZE	552	21.145	21.123	1.660	17.795	26.548	0.797	4.152
LEV	552	0.343	0.296	0.211	0.002	1.158	0.701	3.105
MBR	552	3.634	2.272	6.350	0.094	133.575	15.826	16.3187
AGE	552	24.628	22.000	11.528	5.000	58.000	0.864	3.331

Notes: DPS is dividend per share. STATE is % of government ownership. INST is % of institutional ownership. FMLY is % of family ownership. PROF is profitability measured by return on equity. BRISK is the business risk, measured by the earnings variability. SIZE is firm's size, measured by log of total assets. LEV is leverage, measured by total debt to total assets ratio. MBR is market to book ratio. AGE is firm's age.

Table 2 also shows that, for our sample, on average 10.5% of the shares of the Saudi non-financial firms held by institutions with a maximum of 66% in certain firms. This suggests that INST is a

major player in the SSE. Similarly, on average, 9.85% of Saudi shares held by the government with a maximum of 83.5% in certain firms. The average family ownership is 3.1% with a maximum of 49% in

certain firms. Overall, this indicates that ownership structure can play a significant role in determining corporate dividend policy in Saudi Arabia.

Table 2 also reveals that the mean (median) debt ratio (LEV) of Saudi non-financial firms is 0.343 (0.296). The mean dividend per share (DPS) is SR 1.577 with a maximum (minimum) of SR 34.468 (0.000) in certain firms. The average age of the

sample firms examined in the current research is about 25 years which implies that Saudi firms are mature and well-established.

Table 3 presents the correlation matrix for all explanatory variables used in the analysis. The low intercorrelations among the explanatory variables used in the regressions indicate no reason to suspect serious multicollinearity.

Table 3. Correlation matrix of the explanatory variables

	STATE	INST	FMLY	PROF	BRISK	SIZE	LEV	MBR	AGE
STATE	1.000								
INST	-0.264	1.000							
FMLY	-0.062	-0.034	1.000						
PROF	0.104	0.088	0.104	1.000					
BRISK	-0.106	-0.159	0.020	-0.051	1.000				
SIZE	0.545	0.059	0.050	0.142	-0.055	1.000			
LEV	-0.009	0.141	0.225	0.011	0.031	0.332	1.000		
MBR	-0.013	-0.041	0.058	0.484	0.272	-0.132	0.030	1.000	
AGE	0.100	0.046	-0.129	0.137	0.141	0.041	-0.056	0.027	1.000

Notes: STATE is % of government ownership. INST is % of institutional ownership. FMLY is % of family ownership. PROF is profitability measured by return on equity. BRISK is the business risk, measured by the earnings variability. SIZE is firm's size, measured by log of total assets. LEV is leverage, measured by total debt to total assets ratio. MBR is market to book ratio. AGE is firm's age.

4.2. Ownership structure model

Table 4 presents the results of the maximum likelihood estimation (MLE) of the random effects Tobit models for the link between ownership structure and firm-specific factors and the level of dividend paid by Saudi firms, as measured by dividend per share (DPS). The Wald test statistics reject the null hypothesis that the parameters in the regression equations are jointly equal to zero (Models 1, 2 and 3). The likelihood-ratio (LR) test provides a test for pooled Tobit estimator against

the random effects panel estimator. The test statistics are highly significant which indicates that the panel-level variance component is important and, therefore, the pooled estimation is different from the panel estimation. As can be seen from Table 4, the results support the hypotheses *H1*, *H2*, *H3*, *H4*, *H5*, *H6*, *H7* and *H9*. However, only hypothesis *H8* is rejected. Note that, hypothesis *H2* is also rejected in Model 3. Furthermore, almost similar results were obtained when pooled OLS regressions were used (see Appendix).

Table 4. Random effects Tobit regressions for dividend payments

Regressors	Dependent variable = DPS					
	Model 1 (Ownership model)		Model 2 (Firm-specific model)		Model 3 (General model)	
	Coefficient Estimates	z-stat	Coefficient Estimates	z-stat	Coefficient Estimates	z-stat
Constant	-2.672***	-3.83	-23.529***	-6.60	-17.602***	-4.52
STATE	11.021***	4.78			3.977***	2.78
INST	6.380**	2.16			1.697	1.10
FMLY	9.629**	2.11			7.354***	3.14
PROF			10.306***	3.77	10.659***	4.21
BRISK			-4.499***	-2.71	-3.867**	-2.55
SIZE			1.046***	6.16	0.724***	3.80
LEV			-4.547***	-4.03	-4.640***	-4.21
MBR			0.072	1.14	0.058	0.95
AGE			0.070***	3.33	0.075***	3.97
Observations	552		552		552	
Left-censored obs.	238		238		238	
Log Likelihood	-1008.83		-947.086		-939.339	
Wald test (p-value) ^a	0.000		0.000		0.000	
LR test (p-value) ^b	0.000		0.001		0.013	

Notes: *** and ** respectively indicate significance at 1% and 5% levels. ^a Wald test denotes the test for joint significance. ^b LR denotes the likelihood-ratio test comparing the random effects Tobit model with the pooled. DPS is dividend per share. STATE is % of government ownership. INST is % of institutional ownership. FMLY is % of family ownership. PROF is profitability measured by return on equity. BRISK is the business risk, measured by the earnings variability. SIZE is firm's size, measured by log of total assets. LEV is leverage, measured by total debt to total assets ratio. MBR is market to book ratio. AGE is firm's age.

Model 1 includes only ownership structure variables, with 552 firm-year observations. All the variables included in Model 1 are statistically different from zero and possess the hypothesized signs. As can be seen from Table 4, government ownership (STATE) positively influences dividend payments. The result is consistent even when firm-

specific variables are included in the regression (Model 3). The coefficients on STATE are statistically significant at the 1% level in both Model 1 (coefficient estimate= 11.021, z-stat= 4.78) and Model 3 (coefficient estimate= 3.977, z-stat= 2.78). This result is in line with those obtained by Gugler (2003) for Austria, Al-Malkawi (2007) for Jordan and

Al-Kuwari (2009) for GCC countries (including Saudi Arabia) but inconsistent with Al-Ajmi and Abo Husain (2011) for Saudi Arabia. Thus, the evidence provides support to the double principal-agent hypothesis proposed by Gugler (2003) and indicates that government shareholding is a major determinant of corporate dividend policy in Saudi Arabia.

Similarly, institutional ownership (INST) is found to be positively associated with dividend payments. From Model 1, the coefficient on INST is statistically significant at 5 percent level (coefficient estimate= 6.380, z-stat = 2.16). When the firm-specific factors added to the regression (Model 3), the coefficient on INST remains positive but not statistically different from zero (coefficient estimate= 1.697, z-stat = 1.10). The positive relation between institutional shareholding and dividend payouts has been reported by Han et al., (1999) and Short et al. (2002), among others. In countries with a relatively weak corporate governance and investor protection, institutions use dividend policy as a monitoring device, especially at firms with high agency costs. Allen et al. (2000, p. 2519) affirm that "Firms with more agency or inside information problems ex-ante are more likely to pay dividends to control them".

Regarding the third variable of ownership structure, the relationship between dividend payments and family ownership (FMLY) is positive. The coefficients on FMLY are significantly different from zero at 5% (coefficient estimate= 9.629, z-stat = 2.16) and 1% (coefficient estimate= 7.354, z-stat = 3.14) levels. Our findings are in line with other studies (e.g. Maury and Pajuste, 2002). This result is consistent with the reputation hypothesis that Saudi family-owned firms pay dividends to maintain their reputation and to reduce agency problem between family owners and other minority shareholders (see, Amoako-Adu et al., 2014 and Al-Kuwari, 2009). In sum, the findings presented in this paper provide support to the view that corporate governance, proxied by ownership structure (see, Gugler, 2003 and Maury and Pajuste, 2002), can play a significant role in mitigating agency problem in the Saudi context.

4.3. Firm-specific factors model

Next, Table 4 also presents the regression results of the impact of firm-specific factors on dividend policy. Model 2 includes six variables expected to influence corporate dividend policy in Saudi Arabia. These factors are profitability (PROF), business risk (BRISK), firm's size (SIZE), leverage (LEV), growth and investment opportunities (MBR) and firm's maturity (AGE). From Model 2, all the variables possess the hypothesized signs with exception to MBR. The coefficient on MBR is positive but statistically not different from zero indicating that growth opportunities as measured by market-to-book ratio which is not a determining factor of dividend policy in Saudi Arabia (Coefficient estimate = 0.072, z-stat=1.14). Similarly, this variable remains insignificant when ownership structure variables are included in the general model (Model 3). This result is consistent with the findings reported by Al-Kuwari (2009), Alzomaia and Al-Khadhiri (2013) and Amina (2015) that growth opportunities are not a determinant of corporate dividend policy in the GCC region including Saudi Arabia.

As can be seen from Table 4, firm's profitability (PROF), measured by the return on equity, consistently shows a significant and positive impact on dividend payments in Model 2 (Coefficient estimate = 10.306, z-stat= 3.77) and Model 3 (Coefficient estimate = 10.659, z-stat= 4.21). This suggests that profitability is an important factor that affects corporate dividend policy in Saudi Arabia. This result is in line with Amina (2015) and Al-Ajmi and Abo Husain (2011) who arrive at a similar conclusion for listed firms in Saudi stock market (see also Alzomaia and Al-Khadhiri, 2013). Our findings are also consistent with the earlier findings of Fama and French (2001) for US, Al-Malkawi (2008) for Jordan, Al-Najjar and Hussainey (2009) for UK and Al-Kuwari (2009) for GCC countries. The significant positive relationship between profitability and dividends is generally consistent with the pecking order theory and signaling hypothesis.

Table 4 also shows that business risk (BRISK) is negatively related to dividend policy. The coefficients on BRISK, measured by earnings variability, are negative and significant at 1% (Model 2) and 5% (Model 3) levels. This indicates that an increase in the business risk reduces the dividend payments. This is consistent with signaling and agency costs hypotheses and prior research (see Crutchley and Hansen, 1989, Holder et al., 1998, and Al-Najjar, 2009, among others). It is worth noting that, both studies of Alzomaia and Al-Khadhiri (2013) for Saudi Arabia and Al-Kuwari (2009) for GCC countries report negative coefficients on business risk measured by beta, but statistically not different from zero.

Turning to the firm size, from Models 2 and 3 of Table 4, the coefficients on SIZE are positive and statistically significant at 1% level or better (Coefficient estimates= 1.046 and 0.7424, z-stats = 6.16 and 3.80, respectively). Earlier studies conducted by Al-Kuwari (2009), Alzomaia and Al-Khadhiri (2013) and Amina (2015) report similar results for companies listed in the GCC stock markets including Saudi Arabia. Other studies on emerging and developed markets also find a positive relationship between size and dividend payouts (see, for example, Crutchley and Hansen, 1989, Chang and Rhee, 1990, Redding, 1997, Holder et al., 1998, Al-Malkawi, 2007, and Berezinets, Ilina and Alekseeva, 2017). However, Al-Ajmi and Abo Husain (2011) show that firm size is not significantly associated with dividend payouts in Saudi Arabia.

Another variable found to be a determinant of corporate dividend policy in Saudi Arabia is financial leverage (LEV), measured by the total debt to total assets ratio. The coefficients on LEV are consistently negative and significant at the 1% level in Models 2 and 3. This suggests a higher level of financial leverage reduces dividend payouts, consistent with transaction costs hypothesis. Aivazian et al. (2003) find that debt and dividend payments are negatively related for firms operating in emerging markets. Similarly, Amina (2015) and Al-Kuwari (2009) obtain the negative and statistically significant relationship between leverage and dividend payments in the GCC region including Saudi Arabia. However, Al-Ajmi and Abo Husain (2011) report mixed results with regard to leverage in the Saudi context.

Finally, as can be seen, from Table 4, firm age is found to be robustly significant. As expected, the coefficients on AGE are positive and highly significant at 1% level or better. This suggests that

mature firms pay more dividends in Saudi Arabia. This result provides support for the maturity hypothesis proposed by Grullon et al. (2002). The similar result reported by Al-Malkawi (2007) for Jordanian firms. Overall, our findings are generally consistent with the agency costs, reputation and the transaction costs hypotheses. The evidence also lends some support for the signaling and the pecking order arguments.

5. CONCLUSION

The purpose of this research was to examine the impact of ownership structure and firm-specific factors on corporate payout policy in Saudi Arabia. Using Tobit specification the analysis is based on panel data with 552 firm-year observations covering the period from 2005 to 2012. Three empirical models were developed, ownership structure model, firm-specific factors model, and the general model. The results revealed that ownership structure including government (STATE), institutional (INST) and family (FMLY) shareholdings are important determinants of corporate dividend policy in Saudi Arabia. More specifically, ownership concentration positively affects dividend payments, as measured by dividend per share. The findings provide support to both the agency costs theory and the reputation hypothesis.

The results also showed that five firm-specific factors namely profitability (PROF), business risk (BRISK), firm's size (SIZE), leverage (LEV) and firm maturity (AGE) seem to influence corporate dividend policy in Saudi Arabia. Three factors including PROF, SIZE and AGE have a positive relationship with

dividends, while BRISK and LEV are negatively correlated with dividend policy. More specifically, dividend payments increase with firm size, profitability and maturity. That is, larger, mature and more profitable firms pay higher dividends in Saudi Arabia. However, firms with more earnings variability (business risk) and more debt (leverage) pay lower dividends. These results are generally consistent with the agency costs and the transaction costs hypotheses. The evidence also lends some support for the signaling and the pecking order arguments.

These findings have some practical implications. First, for Saudi companies, the evidence shows that dividends can be used as a mechanism to mitigate agency costs and maintain good reputation in the market because, by and large, the results presented in this paper are consistent with those two hypotheses. Second, policymakers of Saudi Capital Market Authority (CMA) should give more attention to dividend policy as an important internal corporate governance mechanism to reduce agency problem. Finally, Saudi investors may use the findings of this study as a guide to make better investment decisions. For instance, investors seeking high dividend payouts might invest in companies that possess government and family shareholdings in their ownership structure. Likewise, firm-specific factors such as size, profitability, age, leverage, and business risk might be considered in the investment decision making. However, due to potential limitations pertaining to the reliability of the data collected or the proxy variables used in the study, our conclusion may need to be treated with caution.

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APPENDIX

Pooled OLS regressions for dividend payments

Regressors	Dependent variable = DPS					
	Model 1 (Ownership model)		Model 2 (Firm-specific model)		Model 3 (General model)	
	Coefficient Estimates	t-stat	Coefficient Estimates	t-stat	Coefficient Estimates	t-stat
Constant	0.853***	4.40	-11.409***	-7.30	-7.390***	-3.97
STATE	5.330***	7.56			2.914***	3.90
INST	0.610	0.67			-0.247	-0.31
FMLY	4.368***	3.08			4.232***	3.49
PROF			2.521***	4.36	2.460***	4.30
BRISK			-1.472**	-2.16	-1.228*	-1.79
SIZE			0.574***	7.60	0.363***	3.92
LEV			-2.958***	-5.15	-2.779***	-4.69
MBR			0.228	10.15	0.217***	9.79
AGE			0.037***	3.66	0.038***	3.77
Observations	552		552		552	
R-squared	0.107		0.375		0.408	
Adj. R-squared	0.102		0.368		0.398	
F-test (p-value)	0.000		0.000		0.000	

Notes: ***, ** and * respectively indicate significance at 1%, 5% and 10% levels. F-test is used to test the joint significance of all the regression coefficients. DPS is dividend per share. STATE is % of government ownership. INST is % of institutional ownership. FMLY is % of family ownership. PROF is profitability measured by return on equity. BRISK is the business risk, measured by the earnings variability. SIZE is firm's size, measured by log of total assets. LEV is leverage, measured by total debt to total assets ratio. MBR is market to book ratio. AGE is firm's age.