Dividend policy of firms listed on Casablanca Stock Exchange: a panel data analysis

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Abstract: This study attempts to identify the main determinants of dividend policy and evaluate the theories that better explain the dividend behaviour of Moroccan listed firms. Data consists of all non-financial firms listed on Casablanca Stock Exchange (CSE) between 2004 and 2015. This study employed panel data analysis to demonstrate that current profits, financial leverage, growth, liquidity, free cash flow, institutional stock holdings and economic conjuncture represent the main determinants of dividend policy of Moroccan listed firms. The results reveal that the level of expected earnings and past dividend patterns does not influence dividend policy. The findings offer analysts, investors and academicians a valuable tool to understand how CFOs, CEOs, and board of directors design dividend policy. Moreover, given the severity of agency problems in CSE and the role of dividend policy in reducing agency problems, understanding the factors influencing dividend policy is fundamental for investors trading in this market.

Keywords: dividend policy; dividend puzzle; emerging markets.


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1 Introduction

Dividend policy was the focus of many empirical studies over the last 50 years. It remains one of the most controversial and challenging topics in corporate finance in both developed and developing countries, and the subject of ongoing debate (Baker and Weigand, 2015). An enormous number of studies on dividend policy were conducted, yet none of them was able to provide an acceptable explanation for firms’ dividend behaviour. Baker et al. (2002, p.255) contend that: “despite this voluminous amount of research, we still do not have all the answers to the dividend puzzle”. More recently, Ang and Ciccone (2009, p.10) confirm this conclusion and state that: “despite the volume of research devoted to their relevance and even existence, dividends continue to remain mysterious”. In fact, this is the main reason why dividend policy continues to be an appealing substance for investigation. Some of the most important unanswered issues of dividend policy centre on the factors that determine dividend policy and the theories that explain the dividend behaviour.

What limits the scope and effectiveness of research on dividend policy is the persisting focus on developed markets and negligence of emerging and developing ones. Asamoah (2010) and Ozo et al. (2015) argues that despite the significant differences between dividend policy of firms in emerging and developed markets, managers in developing markets thoroughly examine the scheme of dividend policy. In the same line, Bekaert and Harvey (2000) suggest that corporate finance models were developed with assumptions that are consistent with developed markets and disregard emerging markets particularities. As a consequence, these models fall apart when tested in emerging markets. An important implication of this issue is that managerial models developed in Western countries remain poor guides to business decisions when applied in a different institutional context like that of emerging markets. This concern raises a major challenge for both academics and practitioners (Lagoarde-Segot, 2013). Therefore, conducting research in emerging markets in order to evaluate the validity of established models and knowledge becomes the key to developing appropriate models for doing business in these markets (Lagoarde-Segot, 2013).

This study explores the main determinants of dividend policy of firms listed on Casablanca Stock Exchange (CSE) and examines the theories that better explain their dividend behaviour. Established in 1929, the CSE is the third largest stock exchange in Africa. To revitalise the market and restore investors’ confidence, CSE launched a set of new regulations intended to improve investor protection and transparency. However, the enforcement of these regulations and governance mechanisms continue to be the main challenge faced by CSE (Jabbouri, 2016). Furthermore, thanks to ongoing political and economic reforms implemented by the king and the government, Morocco remains the most stable country in the Middle East and North Africa (MENA) region. The reverence for monarchy lessened the risk of revolts and supported a substantiated political stability. The growing tourism and export-oriented industries reinforce the positioning and growth of the country and enhance its attractiveness and desirability to international investors.

We use panel data analysis to identify the main determinants of dividend policy and discover the theories that better explain the dividend behaviour of Moroccan listed firms. This study, which covers the period between 2004 and 2015, tests for the most important factors identified in the literature on dividend policy. Some of these variables were identified by managers of Moroccan listed firms in a study conducted by Baker and Jabbouri (2016) as factors having the greatest influence on dividend decisions. Hence, the
results of this study will allow us to contrast the results provided by statistical and qualitative approaches. This comparison is expected to improve the validity of the results and provide additional insights to researchers and practitioners. As Bruner (2002, p.50) notes, “the task must be to look for patterns of confirmation across approaches and studies much like one sees an image in a mosaic of stones”. This study attempts to answer three major questions:

1. What are the main factors that determine the dividend policy of firms listed on the CSE?
2. What are the prevailing theories that explain the dividend behaviour of firms listed on the CSE?
3. Do statistical analysis and survey research on dividends policy provide consistent, complementary or contradictory results?

This study contributes to the dividend literature in two ways. First, to gain a different perspective on the topic, this study investigates dividend policy in Morocco while taking into consideration the specificities of emerging markets. Second, this research performs a comprehensive analysis of dividend policy by comparing the results of the two main approaches of research on dividend policy. Employing different approaches would help overcome the limitations inherited in each method and provide an in-depth understanding of dividend policy. Moreover, this research has significant practical and theoretical implications. The study offers a valuable tool to analysts, investors and academicians to understand how CFOs, CEOs, and boards of directors shape dividend policy. Moreover, given the severity of agency problems in the CSE (Baker and Jabbouri, 2016) and the role of dividend policy in reducing agency problems (La Porta et al., 2000), understanding the factors influencing dividend policy is fundamental for investors trading in this market. Furthermore, an in-depth understanding of dividend policy and its determinants helps analysts and investors select the appropriate valuation models and enhance their dividend forecasts. Better valuation of firms boosts investors’ confidence, increases market activity, and supports economic growth (Baker and Jabbouri, 2016).

The remainder of the paper is organised as follows. The next section presents a review of the literature and outlines the research hypotheses. Section 3 describes data, methodology and data analysis, Section 4 discusses the results, and Section 5 presents the robustness tests. Section 6 follows to shed lights on the limitations of the study and propose ideas for future research. Section 7 offers a summary and conclusions.

2 Literature review and hypotheses development

Cash dividends, share repurchases, and special dividends represent the main vehicles through which firms distribute cash to shareholders. Dividend policy refers to the way a firm designs its cash distributions to shareholders in terms of size and pattern over time (Baker and Weigand, 2015). The large amount of money paid out by firms every year in the form of dividends put investors and analysts under the obligation to forecast a firm’s dividend policy. Despite the large number of studies on dividend policy over the last decades, the factors that determine dividend policy remain ambiguous and the reasons why firms pay dividend are still inconclusive.
Academic research demonstrates that factors influencing dividend policy can be categorised into firm characteristics and market characteristics. Based on an extensive review of the literature, some variables appear to have a noticeable impact on dividend policy. These variables are: current profitability, expected level of future earnings, financial leverage, growth, size, liquidity, pattern of past dividend, free cash flow, institutional stock holdings, and the economic conjuncture. Some of these variables (current profitability, expected level of future earnings, and pattern of past dividend) are reported by managers of Moroccan listed firms as the main factors they consider when formulating their dividend policy (Baker and Jabbouri, 2016).

2.1 Current profitability

Almost 60 years ago, Lintner (1956) concludes that corporate earnings are the primary determinants of dividend decisions. Lintner (1956, p.100) notes: “the managements we interviewed very generally believed that, unless there were other compelling reasons to the contrary, their fiduciary responsibilities and standards of fairness required them to distribute part of any substantial increase in earnings to the stockholders”. Evidence followed from both developed and emerging markets and shows the importance of profitability in dividend policy. Firms are inclined to increase dividend payments with an increase in current profitability. For instance, Pruitt and Gitman (1991) investigate major firms in the US and report that dividend policy is largely influenced by the current year’s earnings. Other studies confirm this relationship in emerging markets such as Turkey (Adaoglu, 2000), India (Baker and Kapoor, 2015), and MENA (Jabbouri, 2016).

H1 There is a positive relationship between dividend payout ratio and current profits.

2.2 Expected level of future earnings

Many studies report the negative reaction of investors as a response to a dividend cut or omission. It is argued that investors generally associate dividend cuts or omissions with an expected deterioration of the firm’s future profits. This is the main reason why firms tend to increase dividends only when they expect a permanent increase in earnings that would allow them to maintain that level of dividends. Bancel et al. (2009) conducted a study on 16 European countries to investigate cross-country determinants of payout policy. The study shows the influence of the level of future earnings on dividend decisions made by European managers. In the same line, Baker et al. (2007) showed the importance of expected level of future earnings in setting dividend policy of Canadian firms. Moreover, Kuzucu (2015) surveyed financial managers of firms listed on the Istanbul Stock Exchange to examine their perceptions of corporate dividend policy. The study reveals the importance of future earnings in shaping firms’ dividend policy. Many other empirical studies document similar results in the US (Baker and Powell, 2000), Indonesia (Baker and Powell, 2012), and India (Baker and Kapoor, 2015; Bhat and Pandey, 1994).

H2 Here is a positive relationship between dividend payout ratio and expected future profits.
2.3 Financial leverage

Prior literature provides ample evidence on the role of capital structure in setting dividend policy (Afza and Hammad, 2011; Faccio et al., 2001). While these studies report a negative association between the level of debt and dividend policy, they advocate various explanations for this relationship. For instance, Hufft and Dufrene (1996) maintain that a high level of debt increases the firm’s riskiness and cost of capital; hence, the firm becomes more dependent on retained earnings. Further, paying low or no dividends increases the equity amount on the balance sheet and enhances a firm’s financial leverage ratios such as debt to equity ratio. These improvements support the firm’s credit worthiness, facilitate the renewal of debt and minimise its financing costs (Jabbouri, 2016).

Moreover, debt-holders can use covenants to put restrictions on dividend payments that could be used to free the firm from its assets and increase its riskiness (Mather and Peirson, 2006). Even in the absence of restrictive covenants, management of firms are voluntarily inclined towards reducing dividend payments to mirror a low level of agency costs of debt and reinforce creditors’ trust (Nini et al., 2007).

Furthermore, several studies report the positive role of debt in reducing agency costs of equity via the monitoring exercised by creditors (Jensen, 1986). Because of the potential personal losses they may incur in case of their inability to honour the firm’s obligations, managers of leveraged firms avoid self-serving behaviours and improve firm’s efficiency by eliminating value destroying projects. A failure would result in loss of compensation and damaged reputation, which would reduce managers’ mobility in the industry (Fleming et al., 2005; Jensen, 1986). Given the role of debt in disciplining management and reducing agency problems, the need for dividend payments to reflect a decent quality of corporate governance diminishes in leveraged firms. Therefore, compared to less leveraged firms, highly leveraged ones are more reluctant to pay dividends.

All the arguments slide in the same direction and propose a negative relationship between dividend policy and the level of debt.

H3 There is a negative relationship between dividend payout ratio and leverage.

2.4 Growth

With the availability of promising opportunities, firms are expected to reinvest most of their earnings to capitalise on the investment and growth potential. However, when growth opportunities shrink, firms are inclined to distribute most of their earnings resulting into higher dividend payments (Faccio et al., 2001). Several empirical studies confirm this negative relationship between dividend payments and growth opportunities (Ahmed and Javid, 2009). These studies argue that growth opportunities deplete the cash available, which otherwise could have been used to pay dividends.

However, an opposing strand of literature argues that the relationship between dividend payments and growth could be positive or negative (Mitton, 2004). These studies suggest that the nature of this relationship is influenced by the level of investor protection. It is negative in countries with strong investor protection and positive in
countries with weak legal protection against the abuse of management. Mitton (2004), Denis and Osobov (2008) and Jabbouri (2016) document that in markets characterised by strong investor protection, shareholders favour growth investments to dividends because they are confident to share the firm’s future profits. However, in the absence of shareholders’ rights and protection, fear against managerial expropriation prevails. Consequently, shareholders pressure management to disburse cash irrespective of the firms’ growth potential.

The CSE has witnessed several changes over the last decade aiming at improving governance mechanisms, strengthening investor protection and enforcing the law; hence, it is interesting to test how the relationship between dividend payments and growth opportunities is shaped in this environment.

H4 Here is a positive/negative relationship between dividend payout ratio and growth opportunities.

2.5 Size

Despite the large number of studies that explored the impact of firm’s size on dividend policy, the results remain inconclusive (Ahmed and Javid, 2009). Some of these studies argue that larger firms are subject to severe agency problems due to a dispersed ownership and lack of monitoring. In order to reflect the low level of agency problems and information asymmetry, managers of these firms increase dividend payments (Mitton, 2004). Paying high dividends substitutes for the monitoring exercised by shareholders in two ways. First, it lowers the cash available at the discretion of managers and that could be expended on value destroying projects (Jensen, 1986). Second, a generous dividend policy forces managers to raise financing from capital markets, which puts them under the inspection of market professionals who closely monitor and examine the firm (Sawicki, 2008). This strand of literature contends that managers who repeatedly visit financial markets for financing demonstrate a decent treatment of shareholders.

Moreover, larger firms have an easier access to capital markets to raise funds at a competitive rate compared to smaller firms. This easy access is granted by a well-established cash flow and an ability to provide collateral, which increase the confidence of suppliers of capital (Barclay et al., 1995). Moreover, raising funds externally is associated with high transaction costs that represent an additional burden to smaller firms (Holder et al., 1998). Behr and Güttler (2007) note that smaller firms are riskier due to their low cash flows and their lack of diversification, which makes them subject to additional restrictions and high financing costs. The challenges faced by smaller firms to raise financing as well as its high cost make these firms more reliant on retained earnings to finance their growth, resulting in lower dividend payments.

Other studies report a negative relationship between dividend policy and the size of the firm (Jin, 2000). This literature suggests that the main reason for paying dividend is to convey information about the firm’s future. It is also maintained that larger firms enjoy greater analysts’ coverage, which reduces information asymmetry (Barth et al., 2001). These studies argue that analysts, as information intermediaries, forecast firms’ performance which produces firm-specific information, increases publicly available information, and endorses transparency. Since the signalling power of dividend payments is expected to decrease in a larger firm, the latter will have less incentive to pay dividends.
The conflicting evidence reported in the previous literature about the impact of size on dividend policy suggests that this issue requires further investigation. Hence, it can be hypothesised that:

H5 There is a positive/negative relationship between dividend payout ratio and size of the firm.

2.6 Liquidity

There is no doubt about the importance of liquidity in setting dividend policy. Without enough cash on hand, firms will not be able to make dividend payments. For instance, evidence from the Japanese market reveals that variations in dividend policy are mainly driven by changes in the firm’s liquidity (Kato et al., 2002). The positive relationship between liquidity and dividend policy is verified in other markets, which demonstrates the importance of liquidity in setting dividend policy across various countries and industries (Anil and Kapoor, 2008; Jabbouri, 2016). In contrast, firms that have liquidity problems are likely to cut or omit their dividends. Based on the presented arguments, the next hypothesis is formulated as follows:

H6 There is a positive relationship between dividend payout ratio and liquidity of the firm.

2.7 Pattern of past dividend

The tendency of firms to maintain a record of uninterrupted dividend payments makes the pattern of past dividend an influential factor in designing dividend policy (Allen, 1992; Pourheydari, 2009). Recent empirical research by Mubin et al. (2014) confirms a positive relationship between current dividends and those paid in the previous year. However, evidence from various emerging markets show that the pattern of past dividends has no influence on dividend policy, which leads to unstable dividend payments over the long term. For instance, Adaoglu (2000) and Wang et al. (2002) investigate the Turkish and Chinese markets, respectively. They document that firms in these markets do not follow a stable dividend policy. Moreover, Jabbouri (2016) confirms this conclusion and reports that firms in MENA region do not consider historical pattern of dividends when setting the current dividend policy.

Given these contradicting arguments, it is worthwhile to investigate this relationship in further details:

H7 There is a relationship between current and past dividend policy.

2.8 Free cash flow

Jensen (1986) and La Porta et al., (2000), among others, contend that agents prefer to keep cash within the firm to serve their own interests at the expense of shareholders. Hence, as the free cash flow increases agency problems between insiders and minority shareholders upsurge. This literature contends that the reason firms pay dividends is to overcome agency problems prevalent within firms. This finding is supported by several
studies showing that firms, in emerging countries, tend to pay high dividends in order to build a reputation of decent treatment of minority shareholders (De Angelo et al., 2004; Farooq and Jabbouri, 2015; Sawicki, 2008). Prior research provides empirical evidence that supports the agency explanation for paying dividends and advocates the role of dividends in mitigating agency problems (Lie, 2000; Allen, 1992). For instance, Amihud and Murgia (1997) examine dividend announcements on the Frankfurt Borse and contend that agency problems present a pertinent and valid explanation for low dividend payouts in Germany.

Based on the above discussion it can be hypothesised that managers are expected to increase their dividend policy with an increase in free cash flow to reflect a decent quality of corporate governance. The next hypothesis is formulated as follow:

H8 There is a positive relationship between dividend payout ratio and free cash flow.

2.9 Institutional stock holdings

The size of institutions’ participation in capital markets all over the world has made them one of the main actors in financial markets. Several studies document the role of institutional investors in improving corporate governance quality of their investees. Black (1992) contends that corporate managers need to be watched, and the institutions are the only watchers available. The role of institutional shareholders in putting in place proper governance mechanisms cannot be accomplished by smaller or less informed investors (Burkart et al., 2003). Selling the stocks of an investee when dissatisfied by an inferior performance or poor corporate governance may involve substantial costs. For instance, liquidating large holdings can put a significant downward pressure on stock prices (Gospel and Pendleton, 2003). Hence, institutional investors switch from an arm’s length approach to a more active role in the monitoring of management.

Institutional investors monitor their investees to reduce agency problems by pressuring management to disgorge high dividends. Dividend payments reduce the cash available for managers and put them under market scrutiny when they raise financing (Jensen, 1986). Short et al. (2002) demonstrate that institutional investors require dividend distribution in their efforts to mitigate agency conflicts. However, many studies fail to support the positive role of institutional ownership in improving corporate governance mechanisms (Faccio and Lasfer, 2000). This result is explained by the absence of monitoring by institutional shareholders and formulated in the passive monitoring hypothesis. The free-rider problem, which emerges when all shareholders enjoy the benefits of costly monitoring exercised by one or few shareholders, prevents them from colluding to monitor management (Admati et al., 1994). The absence of monitoring also arises from the lack of skills and experience needed to monitor investee firms as well as the high associated costs (Tan and Keeper, 2008).

The literature is inconclusive about the monitoring role of institutional investors and their ability to increase dividend payouts; thus, it is interesting to investigate the following hypothesis:

H9 There is a positive relationship between dividend policy ratio and institutional stock holdings.
2.10 The economic conjuncture

A comprehensive and thorough understanding of dividend policy and its determinants cannot be accomplished without considering the macro-economic environment of the firm and the overall performance of the stock market. The economic conjuncture has significant impacts that go beyond a firm’s fundamentals and its economic performance. The uncertainty surrounding the economic conditions and market performance has severe effects on the behaviour, concern and interests of both managers and investors. Prior literature documents how economic changes affect managerial decision-making that may extend from day to day operations to investing, financing or other strategic decisions such as mergers and acquisitions (Hatzinikolaou et al., 2002). During an economic slump or recession, management may decide to retain most or all earnings to preserve firm’s liquidity position and absorb future shocks, especially with the dearth of financing in emerging markets during periods of uncertain economic conditions (Pallage and Robe, 2003). Alternatively, management may decide to increase dividend payments during economic downturns to reassure investors about the firm’s future prospects as well as the low level of agency problems (Jabbouri, 2016).

Investors’ substantial losses combined with the high uncertainty and significant volatility of the market during the financial crisis of 2007–2009 likely motivated investors to profoundly transform their perception of the stock market and their own investment behaviour (Hudomiet et al., 2011). In some cases, investors completely avoided investing in equity securities reflecting a radical change in their risk aversion (Bucher-Koenen and Ziegelmeyer, 2011). Investors’ behaviour is also expected to drive dividend changes during periods of poor performance. It is reported that the insiders’ incentives and attempts to expropriate minority shareholders increase during the period when stock prices fall consistently (Johnson et al., 2000). This behaviour could be driven by the desire to maintain a decent rate of return and compensate for any losses incurred during this period of mediocre performance (Kee-Hong et al., 2007). Aware of these potential conflicts, shareholders are expected to demand and coerce management to increase dividend payments to raise their return reduced by the overall market performance, and ensure they do not fall victims of managerial expropriation (Jabbouri, 2016).

For these reasons, this study argues that dividend policy may change with the overall performance of the market due to changes in managerial decision making and/or investors’ behaviour and concerns. Hence, the subsequent hypothesis is formulated as follow:

H10 There is a relationship between dividend payout ratio and the economic conjuncture.

3 Methodology

This section addresses the methodological aspects of the research, including sampling, data and variable construction, descriptive statistics and data analysis.
3.1 Sampling

Our sample consists of all non-financial listed firms on the CSE. Firms included in our sample represent the following industry groups: construction, manufacturing, utility, oil, and mining (28.13%), agro-alimentary (12.5%), retail (10.94%), high-tech (10.94%) and real estate (6.25%). No other industry group amounts to as much as 5% of the total. The period covers between 2004 and 2015. The choice of the period is driven by the motivation to grasp the effects of recent changes on Moroccan listed firms. Data stream, world scope and Thomson Reuters were used to extract the data needed. All data is yearly and obtained in Moroccan dirham (mad). Financial institutions, including banks and insurance companies are excluded from the analysis because of their special financial structures and accounting methods (Baker et al., 2013; Berger et al., 1997). The sample is exclusive of delisted firms. However, excluding non-dividend paying firms from the analysis may cause a selection bias (Li and Zhao, 2008). Hence, we include both dividend and non-dividend paying firms. Our final sample consists of 634 firm-year observations from 64 firms.

3.2 Data and variable construction

3.2.1. Dependent variable

Dividend policy is our dependent variable. It is measured as dividend payout ratio (payout ratio), which is computed as the ratio of total dividends to operating profits. Compared to the dividend payout ratio, which is computed as total dividends divided by net income, this measure is more appropriate, especially, when loss making firms decide to pay dividends.

Table 1 Descriptive statistics for all firms for the period 2004–2015

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payout ratio</td>
<td>30.65</td>
<td>29.81</td>
<td>28.87</td>
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<tr>
<td>Profit</td>
<td>15.23</td>
<td>8.11</td>
<td>6.31</td>
</tr>
<tr>
<td>Expected profit</td>
<td>43.38</td>
<td>45.78</td>
<td>46.22</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>22.33</td>
<td>24.56</td>
<td>20.18</td>
</tr>
<tr>
<td>Growth</td>
<td>16.98</td>
<td>13.45</td>
<td>8.11</td>
</tr>
<tr>
<td>Size</td>
<td>12.84</td>
<td>13.35</td>
<td>7.26</td>
</tr>
<tr>
<td>Liquidity</td>
<td>1.19</td>
<td>1.08</td>
<td>0.53</td>
</tr>
<tr>
<td>Past dividend</td>
<td>29.78</td>
<td>30.03</td>
<td>29.66</td>
</tr>
<tr>
<td>FCF</td>
<td>22.13</td>
<td>19.56</td>
<td>10.39</td>
</tr>
<tr>
<td>Institutional holdings</td>
<td>38.37</td>
<td>36.55</td>
<td>24.38</td>
</tr>
<tr>
<td>Economic conjuncture</td>
<td>9.45</td>
<td>1.47</td>
<td>24.42</td>
</tr>
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</table>
Table 2

<table>
<thead>
<tr>
<th></th>
<th>Payout ratio</th>
<th>Divto sales</th>
<th>Profit</th>
<th>Expected Profit</th>
<th>Financial Leverage</th>
<th>Growth</th>
<th>Size</th>
<th>Liquidity</th>
<th>Past dividend</th>
<th>FCF</th>
<th>Institutional holdings</th>
<th>Economic conjuncture</th>
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</thead>
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<tr>
<td>Payout ratio</td>
<td>1.00</td>
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<tr>
<td>Divto sales</td>
<td>0.791</td>
<td>1.00</td>
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<tr>
<td>Profit</td>
<td>0.582</td>
<td>0.124</td>
<td>1.00</td>
<td></td>
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<td></td>
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<tr>
<td>Expected profit</td>
<td>-0.021</td>
<td>-0.013</td>
<td>0.231</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Financial leverage</td>
<td>-0.031</td>
<td>-0.028</td>
<td>-0.087</td>
<td>-0.009</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Growth</td>
<td>0.057</td>
<td>0.039</td>
<td>0.143</td>
<td>0.077</td>
<td>0.031</td>
<td>1.00</td>
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<tr>
<td>Size</td>
<td>0.062</td>
<td>0.008</td>
<td>-0.079</td>
<td>0.045</td>
<td>0.248</td>
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<td>1.00</td>
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<tr>
<td>Liquidity</td>
<td>0.183</td>
<td>0.103</td>
<td>0.103</td>
<td>0.025</td>
<td>0.052</td>
<td>0.039</td>
<td>0.135</td>
<td>1.00</td>
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<tr>
<td>Past dividend</td>
<td>0.006</td>
<td>-0.020</td>
<td>0.061</td>
<td>0.107</td>
<td>-0.083</td>
<td>0.072</td>
<td>0.026</td>
<td>-0.092</td>
<td>1.00</td>
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</tr>
<tr>
<td>FCF</td>
<td>0.181</td>
<td>0.038</td>
<td>0.003</td>
<td>0.098</td>
<td>0.055</td>
<td>0.082</td>
<td>0.035</td>
<td>0.207</td>
<td>0.122</td>
<td>1.00</td>
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<tr>
<td>Institutional holdings</td>
<td>0.219</td>
<td>0.171</td>
<td>0.068</td>
<td>0.164</td>
<td>0.074</td>
<td>0.137</td>
<td>0.199</td>
<td>0.053</td>
<td>0.157</td>
<td>0.126</td>
<td>1.00</td>
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<tr>
<td>Economic conjuncture</td>
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<td>0.112</td>
<td>0.145</td>
<td>0.029</td>
<td>0.273</td>
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<td>0.237</td>
<td>-0.041</td>
<td>1.00</td>
</tr>
</tbody>
</table>
3.2.2 Independent variables

To measure current profitability (profit) the study uses return on equity. The consensus forecasted earnings per share for the next period is used to proxy for expected level of future earnings (expected profit). Financial leverage (leverage) and growth opportunities (growth) are measured using total book value of debt divided by total assets and growth in total assets, respectively. The natural logarithm of total assets is used to measure firm size (size). The current ratio is used to proxy for liquidity (liquidity). Pattern of past dividends (past div) is measured using the average of the last three periods of dividend payout ratio. To proxy for free cash flow, we use the free cash flow to the book value of total asset ratio (FCF). The fraction of shares outstanding held by institutional investors is used as a measure for institutional stock holdings. Lastly, the economic conjuncture (economic conjuncture) is measured using the yearly return on the main index of the Moroccan market (MASI).

3.3 Descriptive statistics

Table 1 presents the descriptive statistics of the variables included in the study for all firms in the period between 2004 and 2015. The table shows that during the period of the study, Moroccan firms opted for a conservative capital structure. They have also generated a reasonable growth, which was reflected in a decent profitability. The average payout ratio is around 30%. Our descriptive statistics also show the large participation of institutional investors in the CSE and highlight their prominent role in this emerging market. The results also show the moderate performance of the Moroccan market over the study period, which was largely marked by a significant growth and outstanding performance between 2004 and 2007 largely driven by successful IPOs. This period was followed by a drastic performance, which lasted until 2015 where the market started to recover gradually.

Table 2 presents the correlation matrix for all the independent variables. The correlation matrix helps us identify the existence of multi-collinearity among the investigated variables. High estimated standard errors and low t-statistics are the effects caused by multi-collinearity among the independent variables, which affect the validity of the results. Table 2 shows that the largest correlation coefficients exist between the two proxies of dividend policy: payout ratio (payout ratio) and dividend to sales ratio (divot sales). Moreover, Table 2 indicates that the largest correlations among the explanatory variables are between size (size) and growth (growth) and between size and financial leverage (financial leverage) by –0.265 and 0.248, respectively.

To further inspect potential multi-collinearity, the variance inflation factors (VIF) for each of the explanatory variables were calculated. As illustrated in Table 3, the highest value does not exceed 1.43, which shows that all VIF values are relatively small. Hence, this analysis adds to the prior one and confirms the absence of multi-collinearity for our variables.
Table 3  Variance inflation factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>1.43</td>
</tr>
<tr>
<td>FCF</td>
<td>1.37</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>1.13</td>
</tr>
<tr>
<td>Economic conjuncture</td>
<td>1.11</td>
</tr>
<tr>
<td>Profit</td>
<td>1.08</td>
</tr>
<tr>
<td>Institutional holdings</td>
<td>1.08</td>
</tr>
<tr>
<td>Past dividend</td>
<td>1.07</td>
</tr>
<tr>
<td>Expected profit</td>
<td>1.05</td>
</tr>
<tr>
<td>Liquidity</td>
<td>1.05</td>
</tr>
<tr>
<td>Growth</td>
<td>1.04</td>
</tr>
</tbody>
</table>

3.4 Data analysis

To identify the main determinants of dividend policy, this study employs longitudinal, or panel, data analysis similar to Baker et al. (2013), Kuzucu (2015) and Yusniliyana and Suhaiza (2016). This method employs all the available yearly observations from 2004 to 2015 for all the sample-firms. Panel data offers several advantages over conventional cross-sectional or time series datasets (Hsiao, 2000). It provides a large number of data points that help increase the degrees of freedom and reduce the collinearity among explanatory variables; thus, improve the efficiency of econometric estimates.

This analysis is based on equation (1). Two regressions are produced by STATA: the fixed effects model, and the random effects model. The Hausman test is used to select the most appropriate model. The basic model takes the following form:

\[
P oR_i = \alpha_i + \beta_1 Size_{it} + \beta_2 Leverage_{it} + \beta_3 Growth_{it} + \beta_4 CurrentProfit_{it} \\
\quad + \beta_5 FutureProfit_{it} + \beta_6 PastDividend_{it} + \beta_7 Liquidity_{it} + \beta_8 FCF_{it} \\
\quad + \beta_9 InstitutionalHoldings_{it} + \beta_{10} EconomicConjucture_{it} + \mu_i
\]  

where \( k \) designates the number of explanatory variables, the subscript \( i \) represents the cross-sectional dimension and \( t \) denotes the time-series dimension.

3.4.1 Tests for heteroskedasticity and autocorrelation

Before discussing the results of the analysis, some tests were performed to identify potential econometric problems frequent in panel data such as heteroscedasticity and autocorrelation. Ignoring heteroscedasticity will result in OLS estimates and forecasts that are unbiased, consistent but inefficient. Further, biased and inconsistent variances result in t statistic and confidence intervals that are no longer valid, which would distort
the validity of hypotheses tests (Kmenta, 1986). White’s general test for heteroscedasticity is designed to detect any linear or non-linear form of heteroscedasticity. White’s general test was conducted and the results show the absence of heteroscedasticity.

Further, ignoring serial correlation will result in OLS estimates that are inefficient (Wooldridge, 2002). The Wooldridge test for serial correlation in panel data was used to test for autocorrelation. The results show the absence of serial correlation.

4 Discussion of the results

To decide between random effects model and fixed effects model, the Hausman test is used. The result of the test indicates that the fixed effects model should be selected over the random effects model. Results of the fixed effects model are presented in Table 4.

| Payout ratio      | Coef. | Std. err. | T    | P > |t| | Level of significance |
|-------------------|-------|-----------|------|-----|---|----------------------|
| Profit            | 0.341 | 0.131     | 2.59 | 0.010 | *** |                      |
| Expected profit   | 0.008 | 0.058     | 0.14 | 0.885 |     |                      |
| Financial leverage| −0.357| 0.166     | −2.14| 0.033 | **  |                      |
| Growth            | −0.122| 0.020     | −5.85| 0.000 | **  |                      |
| Size              | 15.21 | 8.377     | 1.82 | 0.070 |     |                      |
| Liquidity         | 4.504 | 2.231     | 2.02 | 0.044 | **  |                      |
| Past dividend     | 0.262 | 0.282     | 0.93 | 0.352 |     |                      |
| FCF               | 0.406 | 0.019     | 21.03| 0.000 | *** |                      |
| Institutional holdings | 0.362 | 0.188  | 1.92 | 0.056 | *   |                      |
| Economic conjuncture | −0.005 | 0.002 | −2.58| 0.010 | *** |                      |
| Constant          | 19.80 | 5.129     | 3.86 | 0.000 | *** |                      |

Number of obs 634
Prob > F 0.00
Adj R-squared 0.736

Notes: Dependent variable: dividend payout ratio. *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively.

The analysis reveals interesting results, with a relatively high adjusted R squared, 73.6%. Current profitability of the firm has a positive impact on dividend policy. This relationship is significant at the 1% level. This result follows the conventional wisdom and confirms the prior studies reported in developed, emerging and developing markets over the last seven decades (Adaoglu, 2000; Jabbouri, 2016; Pruitt and Gitman, 1991). This result is also in line with the findings reported by Baker and Jabbouri (2016) about Moroccan managers’ perception of dividend policy. In fact, a consistency should be noted here between the results provided by survey research and secondary-data based research.

The results show no relationship between dividend policy and the expected level of future earnings. Even if the regression coefficient shows a positive relationship, yet, it is insignificant. Moroccan managers seem to ignore dividend continuity when formulating
their dividend policy. This conclusion is in line with the prior findings of Adaoglu (2000) and Jabbouri (2016). However, this finding contradicts the prior results reported in several studies (Baker and Kapoor, 2015; Bhat and Pandey, 1994; Bancel et al., 2009; Kuzucu, 2015). It also refutes the findings of Baker and Jabbouri (2016) who document that managers of Moroccan listed firms rank the level of expected future earnings as the fifth most important factor in determining dividend policy out of 25 factors. This discrepancy in the results obtained by two different research approaches has two potential explanations. One of them is measurement error, which results from any discrepancy between the true variable of interest and the proxy. The other one is related to managers’ attitude to do very different things than what they say they do (Graham, 2004). Nonetheless, the absence of a significant relationship between expected level of future earnings and dividend policy in other emerging markets makes the second explanation more convincing.

Another important factor that was expected to have a significant influence on dividend policy is financial leverage. The analysis reveals a significant negative relationship between financial leverage and dividend policy at the 5% level. This result is coherent with previous studies that investigated the same relationship in various international markets (Afza and Hammad, 2011; Faccio et al., 2001; Fleming et al., 2005; Nini et al., 2007). These studies have provided several potential explanations for the negative relationship between dividend policy and the level of debt. First, the riskiness of firms tends to increase with a higher level of debt. Higher risk makes external financing expensive and hard to obtain; thus, leveraged firms become more reliant on retained earnings (Hufft and Dufrene, 1996). Second, firms with a high level of debt are inclined to cut dividends either voluntarily or under creditors’ pressure. Creditors prefer that firms use cash to service their debt commitments instead of distributing it as dividends (Faccio et al., 2001). Third, by reducing dividend payments a firm augments the equity amount on its balance sheet. Hence, it improves financial leverage ratios such as debt to equity ratio, which enhances the firm’s credit worthiness, facilitates the renewal of debt and minimises its financing costs (Jabbouri, 2016). Finally, many studies on corporate governance and agency problems highlight the positive role of debt in disciplining management and reducing agency problems (Fleming et al., 2005). Improving governance within the firm is accomplished either through the monitoring exercised by creditors or thanks to the potential personal losses management may suffer in case of their inability to honour the firm’s obligations. Such failure would result in loss of compensation and damaged reputation, which would restrain managers’ mobility in the industry. Hence, managers of leveraged firms avoid self-serving behaviours and improve firm’s efficiency by eliminating value destroying projects, which reduces the need for high dividend payments to reflect a decent quality of corporate governance within the firm.

Another important result of the study is the negative relationship between growth and dividend policy. This negative relationship is significant at the 5% level. This finding is consistent with prior results reported in previous studies (Josha and Bokpin, 2010). This literature contends that firms use the cash available to finance the promising growth opportunities rather than paying dividends. This outcome also reflects the connection between financing, investing and dividend decisions. Furthermore, this result contradicts the proposition of La porta et al. (2000), Mitton (2004), Denis and Osobov (2008) and Jabbouri (2016) who suggest that the negative relationship between dividend payments
and growth is conditional to strong legal protection for shareholders. These studies assert that because of the fear of expropriation, shareholders pressure management to pay dividends regardless of available growth opportunities. The reported negative relationship between growth and dividend policy demonstrates that Moroccan listed firms were able to persuade investors to delay current dividends for potential growth. Restoring investors’ confidence could be achieved through building a reputation for decent treatment of shareholders. This evidence rejects the bird-in-the-hand theory explanation for paying dividends, which proposes that shareholders prefer dividends to potential capital gains because of the uncertainty surrounding the latter.

The study also demonstrates a significant positive relationship between size and dividend policy at the 1% level. This result is consistent with previous studies that report the same relationship (Behr and Güttler, 2007; Mubin et al., 2014). Several arguments are provided to explain this relationship. For instance, it is argued that because of dispersed ownership and lack of monitoring, larger firms suffer from prevalent information asymmetries and agency problems. Hence, these firms tend to increase dividend payments to lower agency problems and reflect decent governance environment. Moreover, by paying high dividends, management’s need for external financing increases, which implies undertaking a scrutiny exercised by the suppliers of capital. This literature asserts that firms willing to visit capital markets frequently tend to display low agency problems and proper treatment of shareholders (Sawicki, 2008). These arguments provide strong support to the agency explanation for paying dividends.

Additionally, easier access to financing enjoyed by larger firms compared to smaller ones is another potential explanation for the positive relationship between size of the firm and dividend policy. Incapacity to provide appropriate collateral coupled with low cash flow and lack of diversification restrict smaller firms’ access to external financing and make them more dependent on retained earnings to finance their growth, resulting into lower dividend payments (Behr and Güttler, 2007). Finally, this finding rejects the notion that the signalling power of dividend payments decreases with the size of the firm.

As expected, the analysis demonstrates a positive relationship between liquidity and dividend policy. This relationship is significant at the 5% level. More liquid firms are in a better position to pay cash dividends. This result adds to the prior research that endorses the important role of liquidity in designing dividend policy (Anil and Kapoor, 2008; Kato et al., 2002).

Contrary to what is observed in developed markets, Moroccan firms appear to attach no importance to the pattern of past dividends. This conclusion is illustrated in the insignificant relationship between the pattern of past dividends and dividend policy. The instability of dividend payments over the years seems to be a distinguishing aspect of dividend policy in emerging markets. Empirical research conducted by Wang et al. (2002) in China, Adaoglu (2000) in Turkey, Jabbouri (2016) in MENA countries confirm this conclusion. This result raises another inconsistency between survey and quantitative research. The results reported by Baker and Jabbouri (2016) reveal that managers of Moroccan listed firms rank ‘pattern of past dividends’ as the fourth most important factor in determining dividend policy. As discussed earlier, this divergence in the results could be explained by a measurement error or managers’ tendency to do very different things than what they claim they do (Graham, 2004). Yet again, the second explanation appears to be more compelling as the non-existence of a significant relationship between past dividend pattern and dividend policy is established in many emerging markets.
The positive relationship between free cash flow and dividend policy is another important result of this study. This relationship, which is significant at the 1% level, reveals strong support to the agency explanation for paying dividends. Consistent with prior literature, dividend payments increase with an increase in free cash flow to reduce agency problems by limiting the cash at the discretion of management. This evidence reflects a low level of agency problems within Moroccan listed firms, which is coherent with the previous result related to the relationship between growth and dividend policy. Increasing dividend payments with an increase in cash flow could be a tool used by Moroccan listed firms to earn investors’ trust and persuade them to postpone current dividends for future potential growth. Furthermore, Baker and Jabbouri (2016) show that executives of CSE-listed firms recognise the existence of agency problems of equity in the Moroccan market, which may reflect the depth and severity of these problems. Aware of this issue, managers increase dividend payments to mirror a decent treatment of shareholders within their firms.

The model provides additional evidence that supports the relationship between institutional investor and dividend policy. The results display a positive relationship between these two variables that is significant at the 10% level. In fact, this finding corroborates prior studies that associate institutional ownership with high dividend payments (Admati et al., 1994; Gospel and Pendleton, 2003; Short et al., 2002). These studies report that institutional investors pressure firms to pay dividends as a way to monitor management and reduce agency problems. This finding is in line with research conducted by Baker and Jabbouri (2017) about dividend policy from the perspective of Moroccan institutional investors and confirms an additional consistency between the results provided by quantitative and survey based research. Baker and Jabbouri (2017) highlight the importance Moroccan institutional investors attach to the dividend policy of their investee firms as well as the level of influence they exercise in shaping such firms’ dividend policies.

Finally, this analysis shows that dividend policy is negatively related to the economic conjuncture at the 1% level. This result is contradictory, yet interesting, as one would expect dividend payments to increase in good economic times and to decrease during periods of economic uncertainty. The dividend behaviour of Moroccan listed firms during economic downturns could be explained by managers’ attempts to raise dividend payments to restore investors’ confidence about a firm’s future prospects and boost their returns already affected by the overall market’s performance. On the other hand, during good economic times, as shareholders enjoy decent performance management tend to lower dividend payments to afford paying high dividends during recessions (Jabbouri, 2016). Additionally, insiders’ incentives to expropriate increase during mediocre economic performance (Kee-Hong et al., 2007; Johnson et al., 2000). Mindful of these potential conflicts of interests, shareholders pressure management to disburse the cash available.

5 Robustness of results

This robustness check uses dividends to sales ratio as a proxy for dividend policy instead of dividend payout ratio to verify if the prior results are robust to changes in the proxy. Dividends to sales ratio (div to sales) is calculated as total cash dividends divided by total
sales revenues of the period. This measure is widely used in the corporate finance literature to proxy for dividend policy (Baker et al., 2011; La Porta et al., 2000; Jabbouri, 2016). A main reason for using dividends to sales ratio as a proxy for dividend policy is its resistance to economic shocks. Baker et al. (2011) argue that the payout ratio can sharply fluctuates during economic downturns because of the large drop in corporate earnings. However, dividend to sales ratio shows a strong resistance to poor economic conditions while preserving an adequate description of firms’ dividend policies. Similar to the initial analysis, two regressions were produced: the fixed effects model and the random effects model. The appropriateness of the fixed effects model versus the random effects model is confirmed by the Hausman test. Table 5 shows the results of the panel analysis.

Table 5  Panel regressions 2004–2015

<table>
<thead>
<tr>
<th>Panel A: Fixed effects model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payout ratio</td>
</tr>
<tr>
<td>Profit</td>
</tr>
<tr>
<td>Expected profit</td>
</tr>
<tr>
<td>Financial leverage</td>
</tr>
<tr>
<td>Growth</td>
</tr>
<tr>
<td>Size</td>
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<td>Liquidity</td>
</tr>
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<td>Past dividend</td>
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<tr>
<td>FCF</td>
</tr>
<tr>
<td>Institutional holdings</td>
</tr>
<tr>
<td>Economic conjuncture</td>
</tr>
<tr>
<td>Constant</td>
</tr>
<tr>
<td>Number of obs</td>
</tr>
<tr>
<td>Prob &gt; F</td>
</tr>
<tr>
<td>Adj R-squared</td>
</tr>
</tbody>
</table>

Notes: Dependent variable: dividend to sales ratio. *, **, ***indicate significance at the 10%, 5%, and 1% levels respectively.

Similar to the previous test, the adjusted R squared for the model is relatively high, 71.6%. The results of the robustness test are consistent with the previous findings in terms of significance and correlation with dividend policy, which implies that the prior results hold even if the proxy of dividend policy is changed.

6 Limitations and future research

This research suffers from a few limitations, which could be improved in future research. The current results can be enhanced by including market variables that may have a significant impact on firm’s dividend policy such as the quality of corporate governance. Other variables such as executive compensation plans also influence the design of dividend policy. For instance, Smith and Watts (1992) find evidence that dividend
Dividend policy of firms listed on Casablanca Stock Exchange

payments are positively related to stock option plans for top executives. The unavailability of this data in the Moroccan market is the main reason for the exclusion of these variables. Furthermore, combining survey and quantitative approaches in future research to investigate dividend policy can also bring additional insights to the corporate finance literature.

7 Summary and conclusions

The objective of this study is to examine dividend policy of firms listed on the CSE in the period between 2004 and 2015. The findings of this study reveal that current profits, financial leverage, growth, liquidity, free cash flow, institutional stock holdings and economic conjuncture represent the main determinants of dividend policy of Moroccan listed firms. The study also demonstrates that the level of expected earnings and past dividend patterns do not influence dividend policy. The negative relationship between growth and dividend payout ratio highlights the linkage between financing, investing and dividend decisions. Prior literature documents that this relationship is negative only when country governance mechanisms are resilient and shareholders’ protection is strong. Reporting this negative relationship may indicate that Moroccan listed firms, through building a reputation of decent treatment of shareholders, were able to relatively restore investors’ confidence and persuade them to postpone current dividends for potential growth. This evidence rejects the bird-in-the-hand theory explanation for paying dividends. Moreover, the positive relationship between free cash flow and dividend policy strongly support the agency explanation for paying dividends. Mindful of the severity of agency problems within Moroccan listed firms (Baker and Jabbouri, 2016), Moroccan managers increase dividend payments to mirror a low level of agency problems within their firms. The positive relationship between institutional stock holdings and dividend payments confirms the conclusion that Moroccan institutional investors attach great importance to dividend policy and require dividend payments as a tool to monitor management (Baker and Jabbouri, 2017). The negative relationship between the economic conjuncture and dividend policy could be explained by managers’ efforts to boost investors’ confidence about the firm’s future prospects via an increase in dividend payments. Investors’ fear of expropriation during poor economic times could, also, be an incentive to pressure management to raise dividend payments.

The absence of a significant relationship between either expected level of future earnings and dividend policy or patterns of past dividends and dividend policy highlights a major inconsistency between the results obtained by survey and quantitative research. While the results provided by Baker and Jabbouri (2016) illustrate that Moroccan executives rank ‘pattern of past dividends’ and ‘level of expected future earnings’ among the top five determinants of dividend policy out of 25 factors, the results of this study confirm that these two variables have no influence on dividend policy. These inconsistencies could be explained by a measurement error or managers’ aptitude to do very different things than what they claim they do (Graham, 2004). Nonetheless, the second explanation seems more compelling as the absence of a significant relationship between these two variables and dividend policy is established in other emerging markets. The robustness test uses dividends to sales ratio as a proxy for dividend policy and reports consistent findings with the prior results.
Given the severity of agency problems in CSE (Baker and Jabbouri, 2016) and the role of dividend policy in reducing agency problems (La Porta et al., 2000), understanding the factors influencing dividend policy is fundamental for investors trading in this market. Moreover, the study offers a valuable tool to analysts, investors and academicians to understand how CFOs, CEOs, and boards of directors formulate firms’ dividend policies. A comprehensive understanding of dividend policy and the factors shaping it enables analysts and investors to select the appropriate valuation models and enhance their dividend forecasts. Such improvements are expected to produce better firms’ valuations and investment decisions, which subsequently boost investors’ confidence, increase market activity, and support economic growth (Baker and Jabbouri, 2016).

References


