

Board of directors and ownership structure impact on dividend policy: the case of the Moroccan stock market

L'impact de la structure du conseil d'administration et de l'actionnariat sur la politique de dividendes : cas du marché boursier marocain

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Abstract

This article tests the impact of corporate governance variables on dividend policy in the Moroccan stock market during the period 2003 to 2018. The tested variables include board of directors' characteristics (board size, independent members on the board, and female members on the board) and ownership structure (ownership concentration, institutional investors and foreign ownership). Indeed, to our knowledge, this research introduces new variables such as board of directors' characteristics, which have not been tested before in the Casablanca stock exchange. The literature review presents the two agency hypothesis of dividend payments: the outcome model and the substitute model. The outcome model predicts that dividend payment is the result of good governance, and that well governed firms would pay higher dividends to prove to shareholders that they are acting for the firm's interest. On the other hand, the substitute model suggests that firms suffering from weak governance problems would pay dividends in order to reduce the available cash flow, and substitute this weakness by limiting the funds internally to avoid agency conflicts. The literature review presents also different previous studies conducted on this subject and the empirical results obtained. To test our panel data, the fixed model effect has been chosen based on the Hausman test and three control variables were used: firm age, growth opportunities and firm size. Moreover, two proxies of dividend distribution have been selected to test the statistical robustness of our results. After conducting eight regressions, three corporate governance variables showed significant results, in addition to one control variable, which is firm size. A positive correlation between board size and dividend policy has been showed and a negative correlation between dividend payments and the two variables of female directors and foreign ownership has been revealed. All these results are in accordance with the substitute model. Therefore, we note that testing new corporate governance variables provides further information about dividend policy in the Moroccan stock market.

Keywords: Dividend policy, corporate governance, Dividend yield, Payout ratio, board characteristics, ownership structure.

Introduction

This article aims to deepen our understanding of dividend policy in the Moroccan stock market by introducing new variables of corporate governance and ownership structure in order to test their relationship with dividend payment. The introduction of new variables, in particular board of directors' characteristics, could deepen our understanding of dividend policy. Indeed, the main objective of this study is to test the impact of corporate governance variables on dividend policy.

In this respect, it should be noted that the net income allocation for each financial year is prepared by the board of directors and presented to the general assembly to rule on it. Nevertheless, despite the major role played by the board of directors in the process of dividend distribution, studies which examine the relationship between board of directors' characteristics and dividend policy in Morocco have not been conducted yet. Moreover, to our knowledge, only two empirical studies (Aguentaou et al., 2013; Mossadak et al., 2016) have tested the relationship between dividend policy and ownership structure in the Casablanca stock exchange.

Nevertheless, in other financial markets, several researchers have tried to test the impact of corporate governance on dividends, in particular the effect of board characteristics on dividend policy (Hu and Kumar, 2004; Mancinelli and Ozkan, 2006; Al-Najjar and Hussainey, 2009; Elmagrhi et al., 2017). Thus, it would also be judicious to analyze the empirical results of the Moroccan stock market compared to other studies conducted in different countries. In addition to this, shareholders play a crucial role in controlling and monitoring the management. Shareholders must, therefore, ensure efficient control without overly increasing agency costs. This control can be exercised through dividend distribution in order to limit the available cash flow for the management, and avoid decisions that could lead to a decrease in the value of the firm, due to the conflict of interest, which exist between managers and shareholders. In fact, different studies have examined the impact of ownership structure on dividend policy including La Porta et al. (2000), Al-Najjar and Hussainey (2009), Sawicki (2009), Jiraporn et al. (2011), Al-Najjar and Kilincarslan (2016), Mili et al. (2017).

Moreover, despite numerous academic research and empirical studies on dividend policy, companies do not converge towards the adoption of homogeneous dividend policies. Indeed, firms follow heterogeneous and differentiated strategies in terms of dividend payment. Therefore, introducing new variables, not tested before in the Moroccan stock market such as board of directors' characteristics, could provide a better explanation for investors, analysts, researchers and managers about the determinants of dividend policy.

The purpose of this article is to conduct an empirical study of the determinants of dividend policy based on a literature review that defines the theoretical hypotheses. Thus, given the nature of our study, which aims to define the relationship between dividend policy and variables from well-established financial theories, we chose the positivist paradigm to carry out our research. Furthermore, we selected the hypothetico-deductive approach, which seems more appropriate when using a positivist paradigm. As such, Velmuradova (2004) specifies that the positivist paradigm seeks to provide an explanation, to predict behavior and to discover laws of reality on the basis of a deductive approach. Indeed, this approach makes it possible to empirically confirm or refute the results obtained, while relying on the independence and objectivity of the researcher. This approach will thus allow us to test different determinants of dividend policy of firms listed in the Casablanca stock exchange.

This article will, thus, try to test the impact of the following variables on dividend policy: board of directors' size, independent directors, female directors, ownership concentration, institutional ownership and foreign ownership.

This article includes three main sections. The first one focuses on the relationship between corporate governance and dividend policy. The second section details the regression model, the variables and the predicted correlations between dividend distribution and the independent variables. In fact, we tested panel data using fixed effect model based on the Hausman test. The last section presents the empirical results of all the regressions and tests their statistical robustness by conducting regressions on a second proxy of dividend distribution.

1. The relationship between corporate governance and dividend policy

In Morocco, corporate governance has increasingly attracted academic researchers and professionals in the last two decades. In March 2008, the Moroccan Code of Good Corporate Governance Practices was published in order to strengthen good governance of Moroccan firms. In addition to this, in December 2008, specific annexes for small and medium-sized enterprises (SMEs) were prepared in order to take into account the characteristics of SMEs in Morocco. Then, specific appendices to credit institutions were published in April 2010, given the specificity of this sector in terms of financial management, regulation and risk management. In March 2012, the Moroccan Code of Good Governance Practices for Public Establishments was published and annexed to the Moroccan Code of Good Corporate Governance Practices. In order to improve the governance of credit institutions, the law n° 103.12 of credit institutions and similar bodies has been amended and supplemented, stipulating that these firms must appoint independent directors on their boards according to the conditions and methods set by the Circular of the Wali of Bank Al-Maghrib, after consulting the credit institutions committee. The law n°20-19, having amended and supplemented the law n°17-95 of public limited companies, dictated the appointment of one or more independent directors on the board of publicly traded companies (starting from April 2020).

Some previous studies, such as those of La Porta et al. (2000), Al-Najjar and Hussainey (2009), Sawicki (2009) and Jiraporn et al. (2011), tried to analyze the relationship between corporate governance and dividend policy. These various studies were based on two theoretical hypotheses derived from agency theory, which are: the outcome model and the substitute model. The agency cost theory suggests that managers and shareholders could present divergent interest, and, therefore, dividends might play a crucial role in controlling agency costs by reducing the available cash flow for managers and constraining them to insure stable payments of dividends. This decision could be considered as a management mechanism, which is equivalent to debt payment (Jensen and Meckling, 1976; Jensen, 1986). In point of fact, the outcome model assumes that dividend payment is only a result of the governance model, where well governed firms tend not to maintain excessive cash flow internally, if the potential investments are unprofitable. Therefore, well governed companies would pay more dividends in order to confirm to their shareholders that they act in their best interests, by paying them dividends in the absence of investments likely to increase the value of the firm, as suggested by La Porta et al. (2000) and Sawicki (2009).

On the contrary to the outcome model, the substitute one assumes that dividend payments are a substitute for the low quality of corporate governance. Companies, which suffer from poor

governance, would tend to pay more dividends in order to improve the relationship between managers and shareholders, as presented by La Porta et al. (2000) and John and Knyazeva (2006).

1.1. Ownership structure and dividend policy

1.1.1 Institutional investors and their effect on dividend payments

Institutional shareholders are considered to be one of the most influential categories of investors. Indeed, such investors may prefer corporations that pay more dividends, as they typically enjoy tax advantages over individuals, and dividends help reduce information asymmetries between managers and investors (Allen et al. 2000). Moreover, the presence of institutional investors generally leads to improve the control over managers and reduces agency costs, due to their resources and expertise. Grinstein and Michaely (2005) indicate that institutional investors prefer companies which pay dividends to companies that do not pay them. Nevertheless, it should be noted that these researchers revealed that institutional investors prefer companies that pay low dividends to those that pay high dividends. Consequently, they concluded that the presence of institutional investors is not positively correlated to the payout ratio, but rather to the payment or not of dividends.

The empirical results of the relationship between dividends and the presence of institutional ownership are mixed. Indeed, some studies, such as those of Al-Najjar and Kilincarslan (2016), indicate that the payment of dividends is negatively correlated to institutional shareholding, because of their capacity to exercise close control over managers without the need to pay high dividends. On the other hand, other studies, such as Farinha (2003), specify that these investors can demand high dividend payments, if they judge that the control and monitoring costs are too high, or that the exercised control is not efficient.

The study conducted by Allen et al. (2000) specified that institutional investors prefer high dividend payments. They also indicated that minority investors tend to prefer high dividends, because of their short-term financial goals compared to majority investors. Moreover, different studies conducted in several financial markets confirmed this positive relationship including Abdelsalam et al. (2008), Ullah et al. (2012), Thanatawee (2012), Al-Nawaiseh (2013), Al-Gharaibeh et al. (2013), Sindhu et al. (2016), Mili et al. (2017), and Bataineh (2020).

Nevertheless, several other studies have revealed a negative correlation between dividend payment and institutional investors. In this respect, the banks, which are considered as institutional investors, are known for their expertise in controlling and evaluating strategic decisions of the firms. Based on this assumption, Goergen et al. (2005) were able to demonstrate that companies, which are majority-owned by banks, are more willing to omit dividend

payments compared to the ones controlled by other investors. This result can be explained by the banks' expertise and confidence in evaluating the different projects of the firm, which lead to omit dividend payments and to reinvest the cash flow in the firm. In addition to this, Mehrani et al. (2011) studied the Iranian financial market during an eight-year period and were able to show a negative relationship between dividends and institutional ownership. Similarly, the study of Al-Shubiri et al. (2012) in the Jordanian financial market conducted during a period of five years and the research of Kulathunga and Azeez (2017) in the financial market of Sri Lanka confirmed these results.

Lastly, Mossadak et al. (2016) did not find a correlation between dividends and institutional shareholding in the Moroccan financial market over the period 2011-2013 (the number of observations was 146 and the financial firms were excluded from their sample).

1.1.2 Foreign ownership impact on dividends

Foreign ownership may also partly explain dividend policy, since these investors could prefer the repatriation of profits in order to reinvest them in other financial markets or other industries.. The outcome model (La Porta et al., 2000; Sawicki, 2009) suggests that companies, held mainly by foreign shareholders, are better governed due in particular to their expertise. Thus, high payments of dividends will confirm to other shareholders that the decisions are taken in accordance with the shareholders' interests.

On the other hand, based on the substitute model (La Porta et al., 2000; John and Knyazeva, 2006), companies with low levels of foreign ownership could show some limits in their management.. Therefore, the payment of dividends can be used as a substitute for this governance weakness.

Some studies have showed a positive relationship between dividends and foreign ownership. In this regard, the study of Manos (2003) conducted on 661 non-financial companies in India found a positive correlation. The same study showed a positive correlation between dividends and three other variables, which are institutional ownership, low ownership concentration, and insider ownership. Another study conducted by Odak (2006) in the Kenyan financial market revealed the same relationship. Responses to its questionnaire indicate that companies majority-owned (more than 50%) by foreign investors tend to pay more dividends. This result is explained by their desire to repatriate profits to their countries. Furthermore, the results of Baba's study (2009), conducted in the Japanese financial market, show that the presence of higher foreign ownership increases the probability of dividend payments. Moreover, Chai (2010) explained the positive correlation by the preference given by foreign shareholders to large and profitable companies, which pay high amounts of dividends. The researcher specified

that his results support the substitute model. Additionally, Lace et al. (2013) pointed out that foreign shareholders have a greater preference for emerging financial markets, which display high dividend payment opportunities. In addition to this, different studies found this positive correlation such as Jeon et al. (2011), Ullah et al. (2012), Riaz et al. (2016), and Mossadak et al. (2016).

However, other studies showed a negative relationship between dividends and foreign ownership. In fact, Glen et al. (1995) explained that companies in industrialized countries invest in emerging financial markets because of their growth potential over the long term, and not due to the potential payment of dividends in the short term. In addition to this, Sulong and Nor (2008) indicated that foreign shareholders have greater expertise, which allows them to control agency costs and top management' decisions, which could decrease the value of the company. Al-Najjar and Kilincarslan (2016) confirmed this postulate by suggesting that foreign investors have extensive experience in controlling owned companies and monitoring managers' strategic decisions. Manos (2003) specified that the increase of foreign ownership arouses greater interest from analysts, which increases the monitoring exercised by these specialists and, consequently, reduces the opacity of certain decisions. Therefore, this situation reduces the interest of using dividends as a mechanism to control managers. Lam et al. (2012), Sakinc and Gungor (2015) and Bataineh (2020) studies showed also a negative link between the payment of dividends and foreign ownership.

Nevertheless, other empirical researches, including Kumar (2003) who investigated the Indian market over sixteen-year period and Abdullah et al. (2012) who worked on the Karachi financial market in Pakistan, did not find a correlation between foreign ownership and dividends.

1.1.3 Ownership concentration as a determinant of dividend policy

Shleifer and Vishny (1986) suggested that high ownership concentration ensures better control of the company, while a dilution of ownership reduces the quality of the control exercised over managers. In order to serve their own personal interests, managers tend to keep the available cash flow in the company and limit dividend payments. La Porta et al. (2000) showed that low quality of governance and the lack of shareholder protection are correlated with low dividend payments. Nevertheless, ownership concentration makes it possible to face these weaknesses and increase dividend distribution. Indeed, Shleifer and Vishny (1986) explained that larger shareholders have more stakes in controlling the company and that the cost of control is less restrictive for them compared to small investors. Thus, the presence of large investors reduces the problem of "free rider", where no investor has enough stakes or incentives to closely control managers' decisions. The active control of large investors ensures that the decisions are made

in accordance with shareholders' interests. The control exercised by large investors reduces unprofitable investments and increases the amount of the available cash flow that could be distributed in dividends.

Based on the outcome model, companies owned by large shareholders would pay more dividends, in order to show to their shareholders that the decisions are made in their interests. Contrariwise, the substitute model expects that companies with diluted ownership would prefer to pay more dividends in order to substitute the absence of large shareholders by paying high dividend.

Different studies tried to investigate the relationship between ownership concentration and dividends. In this regard, Holder et al. (1998) tested the relationship between the dividend policy and the following two variables: the number of shareholders (proxy of shareholder concentration) and the insider ownership. These researchers, first, specified that if a shareholder holds a large percentage of ownership (such as institutional investors), the cost of control and monitoring would generally be considered low compared to the wealth of the investor. Nonetheless, when ownership is diluted among several investors, control and monitoring become more costly. Consequently, a less concentrated ownership increases agency costs, and, therefore, the interest of using dividend as a mechanism to control them becomes important. Dividends, given their inflexible nature, can thus be used as an equivalent of debt in order to oblige managers to ensure an annual payment of dividends and avoid unprofitable investments. Their results showed a positive correlation between the number of shareholders and dividends. Furthermore, different studies confirmed the negative correlation between ownership concentration and dividend distribution such as Maury and Pajuste (2002), Gugler and Yurtoglu (2003), Trojanowski and Renneboog (2005), Mancinelli and Ozkan (2006), Shahid et al. (2016), Le and Le (2017), and Mili et al. (2017).

However, other studies found a positive relationship between dividend payments and ownership concentration. Truong and Heaney (2007) indicated that large shareholders can influence dividend policy decisions through their voting rights. Therefore, dividend distribution decisions are made according to the preferences of large shareholders and may conflict with the preferences of minority shareholders.

The results of Ramli (2010) indicate that companies pay more dividends when the share of the majority shareholder increases, and that dividend payments are even higher, when the share of the second majority shareholder increases. This empirical study was conducted over five years from 2002 to 2006, and covered 245 companies in Malaysia. Other researches confirmed this positive correlation, such as Abdullah et al. (2012), Al-Shubiri et al. (2012), Thanatawee

(2012), Sakinc and Gungor (2015), Yusof and Ismail (2016), Mossadak et al. (2016), and Kulathunga and Azeez (2017).

On the other hand, the research of Naceur et al. (2006) conducted on the Tunisian financial market, which was characterized by a strong presence of banks and high concentration of ownership, found a significant relationship between ownership concentration and dividend payments. Other studies confirmed this results including: Mutiso (2011). Moreover, and contrary to the results of Mossadak et al. (2016), the research of Aguenau et al. (2013) did not find any significant correlation between the two variables in the Casablanca stock exchange.

1.2. Board of directors and dividend policy

1.2.1. Impact of the size of the Board of directors on dividend policy

It should be noted that the article 39 of the law n°17-95 of public limited companies (amended and supplemented by the laws n° 20-05, n° 78-12 and n° 20-19) stipulates the nomination of 3 directors at least and 12 members at most. This number is increased to 15, if the company is listed in the stock exchange. On top of that, in the event of a merger, these numbers may be increased to 24, 27 or 30 based on whether or not the merged companies are listed in the stock exchange.

The number of directors should be chosen to ensure effective control and monitoring of the achievements and decisions taken by managers. Indeed, by referring to the outcome model (La Porta et al., 2000; Sawicki, 2009), when the number of directors increases, control efficiency over managers decreases, and, thus, the managers could prioritize their personal interests over firm's interests by investing the free cash flow in unprofitable projects. This situation could be due to communication and coordination problems. Therefore, smaller boards would exercise better control and pay more dividends to evince to shareholders that they are acting in their interests. Conversely, based on the substitute model (La Porta et al., 2000; John and Knyazeva, 2006), a high number of directors reduces the quality of monitoring managerial opportunism and lead to higher payments of dividends in order to substitute this governance drawback.

Moreover, to our humble knowledge, no empirical study has tried to test the potential relationship between dividend payments and board of directors' size in the Moroccan financial market. Nevertheless, in other financial markets, empirical studies already attempted to test this relationship and the results are mixed. The study of Litai et al (2011) conducted on more than a thousand companies in the Shanghai financial market showed a positive relationship between board size and dividends. This positive correlation has been confirmed by several studies including Bokpin (2011), Gill and Obradovich (2013), Mansourinia et al. (2013), Shahid et al. (2016), and Elmagrhi et al (2017). Moreover, the recent study of Nazar (2021) showed also a

positive relationship between the payout ratio and board size in the Colombo Stock Exchange of Sri Lanka. In addition to this, Ullah et al. (2021) showed also the same correlation using a sample of pharmaceuticals companies in Pakistan.

However, other studies led to the opposite results, such as Ghasemi et al. (2013) who found a negative correlation between the number of board members and dividend payments, by studying 81 listed companies in the Iranian financial market over a seven-year period. Furthermore, the study of Waris et al. (2021) confirmed that investors who buy shares with the objective to receive higher dividend, select firms with minimum board size in the Karachi Stock Exchange.

Yarram and Dollery (2015) investigated the impact of board size on more than 400 non-financial companies in the Australian financial market over a six-year period. Their results indicate the absence of a significant relationship between dividends and board size.

1.2.2. Independent directors and their effect on dividends

The outcome model would suggest that the presence of independent members on the board of directors preserve the interests of shareholders, thanks in particular to the high dividends paid in order to reduce agency costs. Hu and Kumar (2004) as well as Ntim and Osei (2011) specify the important role played by independent directors in improving corporate governance. Indeed, independent directors can be considered as an effective mechanism to control agency costs, as indicated by Bathala and Rao (1995). Furthermore, Borokhovich et al. (2005) noted the importance of appointing independent directors to strengthen the control exercised over the managers.

On the other hand, the substitute model would predict that companies, which suffer from governance problems, would tend to pay more dividends. The low presence of independent directors would result in higher payments of dividends in order to reduce agency costs and to substitute this governance weakness.

As mentioned above, it should be recalled that credit institutions are required to appoint independent members in Morocco. Moreover, the law n°20-19, having supplemented and modified the law n°17-95 of public limited companies, requires the appointment of independent directors of companies making public offerings. However, this measure only came into effect in April 2020.

To our humble knowledge, no empirical study has been conducted in the Moroccan financial market to test the relationship between dividend distribution and independent directors.

In the British financial market, Al-Najjar and Hussainey (2009) demonstrated a negative correlation between dividends and the number of independent members for a sample of more

than 400 non-financial companies, over a period of 12 years. These results suggest that companies suffering from governance problems, such as the absence or the existence of few independent members, pay more dividends to substitute this governance weakness (La Porta et al., 2000). In addition to this, Iqbal's study (2013) in the Pakistani financial market confirmed this negative relationship. McGuinness et al. (2015) conducted also a study on the Chinese financial market, which revealed a negative correlation. Indeed, an increase in the number of independent directors leads to a drop in dividend payments of companies held by the Government. Furthermore, the studies of Benjamin and Zain (2015), Riaz, et al. (2016), and Nazar (2021) confirmed these results.

Contrariwise, other studies found a positive relationship between dividend policy and independent members on the board of directors. Thus, the study of Belden et al. (2005), conducted on 524 American companies over a period of three years, concluded that the presence of independent directors increases the payment of dividends. This positive correlation has also been affirmed by Yarram and Dollery (2015) and Shahid et al. (2016). Moreover, the recent study of Hermawan et al. (2022) found a positive correlation in the Indonesian and Malaysian stock markets.

Otherwise, Cotter and Silvester (2003) examined 109 companies in the Australian financial market and did not find a significant correlation between independent directors and dividends. Studies by Ghasemi et al. (2013) and Mansourinia et al. (2013) conducted on the Tehran financial market also confirmed this finding.

1.2.3. Female directors and their role to define dividend policy

In recent years, the gender approach has attracted growing interest in the field of corporate finance. Some research has introduced the impact of gender approach on the board of directors and attempted to examine its relationship with various financial policies such as investment policy, leverage policy, and dividend policy. Therein, studies that have focused on the relationship between dividends and female directors remain scarce compared to other studies that examined the relationship between gender approach and investment policy, for example. The study conducted by Faccio et al. (2016) pointed out that women generally opt for less leverage in the firm and take less risk when choosing investments. Moreover, Carter et al. (2003), Adams and Ferreira (2009), and Adams et al. (2015) suggested that women tend to challenge the practices of the board of directors, that they are less conformist and express their points of view more than male members. In addition to this, Miller and Triana (2009) stated that the presence of women reinforces debates quality in boards' meetings and offer new perspectives and points of view. This was confirmed by Gul et al. (2011) who specify that this

quality improvement of debates enhance the quality of the available information for the board during decision-making. The presence of women reduces the risk of convergence problems of ideas, which are not challenged by board members, as specified by Chen et al. (2017). Moreover, Adams and Ferreira (2009) suggested that women are more involved in monitoring and controlling management, thanks to their higher presence at board meetings and to their lower presence in audit and nomination committees.

The outcome model would predict that women presence on the board of directors improves its effectiveness and independence and would lead to higher dividend payments, in order to confirm to shareholders that the managers are acting in their best interests. However, referring to the substitute model, the absence of women members on the board of directors would reduce governance quality. Thus, the payment of dividends would be used as a mean to replace this governance frailty.

Furthermore, it is essential to remember that several countries have tried to increase the presence of women on the boards of directors, either by introducing quotas to be respected, or by adopting other more flexible approaches such as "conform or explain" or "why not", as specified by Davies et al. (2011). As indicated by Al-Rahahleh (2017), the corporate governance code, published in 2016 in the United Kingdom, specifies that problems of similar thinking can be due to the absence of gender diversity. Moreover, the corporate governance code published in 2015 in Japan encourages companies to ensure diversity on boards of directors, in particular through gender diversity to improve firm's performance by providing different and new perspectives. Moreover, in Morocco, Circular n°5/W/16 of Bank Al-Maghrib related to the appointment of independent directors on the boards of credit institutions stipulates, in its article 9, that these institutions must respect the principle of parity through the appointment of female independent directors.

Nevertheless, empirical studies which examined the relationship between board diversity and dividend distribution remain rare. Furthermore, to our humble knowledge, no research has investigated this relationship in the Moroccan stock exchange.

Al-Rahahleh (2017) studied the Jordanian financial market over a period of seven years from 2009. The researcher focused on non-financial companies and the results showed a positive correlation between female directors and dividend payments. These results were supported by Chen et al. (2017), Jiraporn et al. (2019), and Ain et al. (2021). In addition to this, the recent research conducted by Ullah et al. (2021) showed a positive correlation between gender diversity and dividend payment of pharmaceuticals companies in Pakistan.

However, Elmagrhi et al (2017) examined the British financial market over a period of four years and showed a negative correlation between dividend payments and the presence of female directors. These results were corroborated by the study of Saeed and Sameer (2017).

The study conducted by Djan et al. (2017) did not reveal a significant correlation between the gender variable and dividend distribution in the Ghanaian financial market.

2. Variables proxies, selected sample and regression model presentation

This section will present the regression model, the sample as well as the dependent and independent variables. Regressions will test corporate governance variables in addition to three control variables.

Eight regressions will be conducted on two proxies of dividend distribution, while using different proxies for certain independent variables to corroborate our results. All our regressions will use fixed effect model based on the Hausman test conducted on our panel data.

2.1. Dependent and independent variables

2.1.1. Dividends

Two proxies were used to calculate dividend distribution. The first proxy is the “dividend yield”, which is the paid dividend per share to the share price ratio. Different previous empirical studies have opted for this ratio including Litzenberger and Ramaswamy (1979), Singhanian and Gupta (2012), Setia Atmaja (2016), and Bataineh (2020). The second proxy is the “payout ratio” that measures the amount of paid dividends per share to the profit per share. Several researchers have chosen this proxy such as Farinha (2003), Ramli (2010), Lam et al. (2012), Attig et al. (2015), and Le and Le (2017). The use of two proxies will allow us to confirm our results and corroborate their statistical robustness.

2.1.2. Institutional ownership

In his research, Kumar (2003) indicates that institutional ownership includes insurance companies, mutual funds, financial institutions, banks, government owned companies and institutions. To this end, in our research, the institutional investors will include the following ownership: Moroccan government-owned institutions and firms (EEP), Moroccan financial institutions (banks, insurance companies, credit institutions, etc.), as well as mutual funds. This variable does not take into account foreign institutional shareholders, since we used a foreign ownership variable, which capture decisions made by these investors.

In our research, we will use will a dummy variable for institutional ownership, as used in the researches of Li (2007), Lightner et al. (2008), Francoeur et al. (2012) and Aguenau et al. (2013). The variable takes a value of 1 if the main investor is an institutional shareholder, and a value of 0, otherwise.

The percentage of institutional shareholding has also been used as a proxy in previous research including Ramli (2010), Thanatawee (2012), and Mossadak et al. (2016). However, this proxy shows a limit compared to the previous one. In cases of low institutional ownership percentages, these investors would not be able to influence dividend payments because of their minority shareholding. Therefore, the dummy variable is more representative of cases where institutional investors are the main shareholder and could, therefore, have a significant influence on dividend policy.

2.1.3. Foreign ownership

We chose a dummy variable for foreign ownership as used in previous studies such as Aguenau et al. (2013), Ben-Nasr (2015), Forti and Schiozer (2015), and Le and Le (2017). It takes a value of 1 if the main investor is a foreign shareholder, and a value of 0, otherwise.

Other researches opted for the percentage of foreign ownership (Kumar, 2003; Chai, 2010; Chiang and Lai, 2015). However, as for the institutional ownership variable, this proxy shows a limit due to cases of low foreign shareholding percentages. Indeed, if the ownership percentage is low, these shareholders could not influence dividend policy. Therefore, choosing a dummy variable is more judicious, since it only takes into account cases where foreign ownership represents the main shareholding.

2.1.4. Ownership concentration

Different proxies were used by previous studies to calculate ownership concentration. Herfindahl index is generally used to calculate an industry concentration level and it takes values between 0 and 1. The level of concentration becomes greater when the value of the index approaches 1. This index corresponds to the sum of square roots of each shareholder's ownership in the firm. We chose this ratio as a first proxy for ownership concentration, as used by different researchers including Gonzalez et al. (2010), Aguenau et al. (2013), Mossadak et al. (2016), and Anh and Tuan (2019).

The main shareholder ownership is also considered to be a good indicator of ownership concentration. Indeed, the main shareholder provides an insight about the concentration level, the degree of influence on the decision-making process and the stake of control to be exercised over managers. In this respect, several studies chose this proxy such as Gugler and Yurtoglu (2003), Mancinelli and Ozkan (2006), Yusof and Ismail (2016), and Le and Le (2017).

2.1.5. Size of the board of directors

The most used proxy in previous studies is the number of directors. Among the studies which opted for this proxy, we can cite Carter et al. (2003), Adams and Ferreira (2009), Chen et al. (2014), Milli et al. (2017), Jiraporn et al. (2019), and Ain et al. (2021). Therefore, we will

choose this proxy to test the board size's impact on dividend policy. Moreover, to our knowledge, this is the first study that tests the relationship between this variable and dividend policy in the Moroccan stock market.

2.1.6. Independent directors

Previous studies generally used one the two following proxies: first, the percentage of independent directors on the board. This ratio has been used by Chen et al. (2017), Aloudat et al. (2019), and Jiraporn et al. (2019). Second, other studies chose the number of independent members on the board. For example, the following studies used this proxy: Al-Najjar & Hussainey (2009), Mili et al. (2017), and Dissanayake and Bandara (2018).

In our research, we will use the two proxies to corroborate our results, which will represent the first empirical study, to our knowledge, that examines the relationship between this variable and dividend policy in the Moroccan stock market.

2.1.7. Female directors

As we did for independent directors, we will select the two most used proxies for female directors in previous empirical studies. Using two proxies for this first empirical study on the relationship between dividends and female directors in the Moroccan financial market will allow us to confirm our results. The first proxy is the percentage of the number of female directors to the total number of members on the board of directors. The following research opted for this proxy: Chen et al. (2014), Al-Rahahleh (2017), Elmagrhi et al. (2017), Jiraporn et al. (2019), and Gyapong et al. (2021). The second one is the number of female directors as used by Dao et al. (2015), Kajola et al. (2019), Ain et al. (2021), and Mulchandani et al. (2021).

2.1.8. Control variables

In addition to the six corporate governance variables detailed above, the model will include the following three control variables, which are commonly used in previous empirical studies: firm age, growth opportunities and firm size. Indeed, most empirical researches introduce control variables (firm's characteristics) to test corporate governance impact on dividend policy.

2.2. Sample selection and fixed effect model presentation

The number of the studied firms is 64 during the period 2003-2018, which represents 511 observations for the Dividend yield proxy and 509 for the Payout ratio proxy. Due to the low number of listed firms and the availability of data in the Moroccan stock market, we chose this large period in order to increase the number of observations and provide reliable and robust statistical results. Furthermore, Hsiao (2003) noted that an increase in the number of observations of panel data increases the degree of freedom and reduces heteroscedasticity and

multicollinearity issues. The sources of our data, the number of firms and observations as well as the period studied are detailed below:

Table 1: Data sources and sample

| | | Sources |
|---|--|--|
| Number of firms and number of observations | 64 firms ; Dividend yield regressions: 511 observations Payout ratio regressions: 509 observations | Bloomberg, annual reports, financial statements, prospectuses, official website of the Moroccan Capital Market Authority, official websites of listed firms, official press releases of listed firms, official website of the Casablanca Stock Exchange: casablanca-bourse.com |
| Period | 2003 to 2018 | |

Source: Authors.

In order to perform statistical tests on our panel data, we will use the following model:

$Y = a + B * (\text{Board of directors size, Female directors, Independent directors, Institutional ownership, Foreign ownership, Ownership concentration, Firm age, Growth opportunities, Firm size}) + \varepsilon$

a: for the constant;

B: the coefficient of the independent variable.

The fixed effect model was chosen based on the Hausman tests conducted on all regressions. Indeed, the Hausman tests allowed us to choose the most suitable model for our panel data between random effect and fixed effect models.

2.3. Hypotheses of the expected relationships between dividend payments and corporate governance variables

The following table summarizes the hypotheses of the relationship between corporate governance variables and dividend policy based the theoretical framework:

Table 2: Predicted correlations between dividend payments and corporate governance variables

| Independent variables | Correlations between independent variables and the dependent variable | |
|--------------------------------|---|---|
| | Outcome model | Substitute model |
| Size of the board of directors | Negative (fewer members => better governance => higher dividends). | Positive (dividend payments replace low governance quality due to the high number of directors). |
| Independent directors | Positive (more independent members => better governance and closer monitoring => higher dividends). | Negative (dividend payments replace low governance quality due to low numbers of independent members). |
| Female directors | Positive (more female directors => better governance and closer monitoring => more dividends). | Negative (dividend payments substitutes low governance quality due to low numbers of women on the board). |
| Ownership concentration | Positive (higher ownership concentration => better governance => higher dividends). | Negative (diluted shareholding => weak governance => higher dividends to substitute it). |
| Institutional ownership | Positive (higher institutional ownership => better governance => higher dividends). | Negative (low institutional ownership => lower governance quality => higher dividends). |
| Foreign ownership | Positive (higher foreign ownership => better governance => higher dividends). | Negative (fewer shares of foreign shareholders => weak governance => higher dividends). |

Source: Authors.

3. Empirical results of corporate governance variables and their impact on dividend policy

3.1. Dividend yield determinants

The empirical results of all the four regressions conducted on the Dividend yield proxy are presented in the following table:

Table 3: Regressions' results using Dividend yield and different proxies for ownership concentration and the presence of female and independent directors on the board

Fixed effect model was used and significant results are followed by one * when $\alpha = 10\%$; 2 ** when $\alpha = 5\%$; and 3 *** when $\alpha = 1\%$. The results present the correlations between each independent variable and the 2 proxies of the dependent variable.

The table presents P values for each independent variable in the four regressions.

| Dependent variable: | Coefficients of each independent variable in the four regressions | | | |
|--|---|---|--|--|
| | 1 st regression (% of female directors; % of independent directors; Herfindahl index) | 2 nd regression (Number of female directors; Number of independent directors; Herfindahl index) | 3 th regression (% of female directors; % of independent directors; ownership % of the main shareholder) | 4 th regression (Number of female directors; Number of independent directors; ownership % of the main shareholder) |
| Dividend yield | | | | |
| Firm age | - 0.0001867 | - 0.0000698 | - 0.0002191 | - 0.0000952 |
| Growth Opportunities (P/B) | - 0.0015941* | - 0.0016976* | - 0.0015843* | - 0.0016895* |
| Firm size | - 0.0968361*** | - 0.0966572*** | - 0.0963342*** | - 0.0961752*** |
| Board size | 0.0193842*** | 0.0216171*** | 0.0194229*** | 0.0216769*** |
| Female directors on the board (The used proxy is indicated in each column of this table) | - 0.1546449*** | - 0.0205657*** | - 0.1564017*** | - 0.0208083*** |
| Independent directors on the board (The used proxy is indicated in each column of this table) | 0.0565519 | 0.0062351 | 0.0571095 | 0.006285 |
| Ownership concentration (The used proxy is indicated in each column of this table) | 0.0259513 | 0.0296254 | 0.0287141 | 0.0311839 |
| Institutional ownership | 0.034634 | 0.0355289 | 0.0371523 | 0.0381645 |
| Foreign ownership | -0.09786*** | - 0.0949594*** | - 0.0975898*** | - 0.0945706*** |
| Constant | 2.091379*** | 2.061573*** | 2.076265*** | 2.046536*** |

| | | | | |
|--|-----------------------|--------|--------|--------|
| Coefficient of determination (R ² within) | 24.32% | 24.37% | 24.34% | 24.40% |
| Number of total observations | 511 | 511 | 511 | 511 |
| Number of firms | 64 | 64 | 64 | 64 |
| Fisher test | Significant*** | | | |

Source: Stata software.

First, we note that Fisher test is significant. Therefore, there is at least one independent variable that has a significant correlation with the dependent variable. Moreover, the individual statistical tests of our independent variables can be considered valid statistically.

The percentage of directors displays a positive significant correlation, as predicted by the substitute model (La Porta et al., 2000; John and Knyazeva, 2006), which specifies that dividend payments substitute the low quality of governance. This could be due to the high number of directors that leads to communication and coordination problems. Several empirical studies found this positive correlation such as Litai et al (2011), Gill and Obradovich (2013), Mansourinia et al. (2013), Shahid et al. (2016), and Elmagrhi et al (2017).

The percentage of women directors on the board shows a significant negative correlation. In fact, the presence of women on the board enhances the effectiveness and independence of the board by proposing new ideas, experiences and different perspectives (Carter et al., 2003; Adams and Ferreira, 2009). The substitute model predicts that the absence of women members on the board of directors would reduce the quality of governance, and, therefore, dividend distribution would be used to substitute this weakness. Indeed, the study of Elmagrhi et al. (2017), conducted on the British financial market, found a negative correlation between dividends and female directors. These results were confirmed by Saeed and Sameer (2017) in the Indian, Russian and Chinese financial markets.

Foreign ownership variable presents a significant negative correlation with dividends. In this regard, companies held mainly by foreign shareholders are better governed, thanks in particular to their expertise, which allows them to exercise better control over managers' decisions (La Porta et al., 2000; John and Knyazeva, 2006). The substitute model predicted that companies with low levels of foreign ownership would show more governance problems compared to other firms, and would, therefore, pay higher dividends to substitute this weakness. Some empirical studies revealed this negative relationship between the two variables including Lam et al. (2012), Sakinc and Gungor (2015), and Bataineh (2020).

Moreover, it should be recalled that the study of Aguenau et al. (2013), conducted in the Moroccan stock market, did not find a significant correlation between dividends and foreign

shareholding. Nevertheless, this study was limited to a period of seven years from 2004 to 2010, and used a reduced number of observations which was around 200. Furthermore, the coefficient of determination of their model was limited to 7.63% (R^2 within) compared to the 24% found in our model (R^2 within). Furthermore, their study did not conduct robustness tests by using a second dividend payments' proxy (the only proxy used in their study was the payout ratio).

On the other hand, Mossadak et al. (2016) found a positive correlation between foreign ownership and dividends in the Moroccan stock market. However, this study was limited to a very short period of three years from 2011 to 2013, and the number of observations was 146. In addition to this, they ran their regression using the Ordinary Least Squares (OLS) model, which is less appropriate for panel data analysis, unlike the fixed effect model (used by Aguenau et al., 2013) or the random effect model. Indeed, these two models combine the advantages of cross-sectional data and time series data. In this regard, Agha et al. (2018) indicated that the OLS model does not allow to model individual heterogeneity and is considered to be a simple stacking of cross sectional data. Furthermore, their study did not use different dependent variable proxies (only the Payout ratio proxy was used) to test the robustness of their results. Thus, their empirical results could be impacted by macroeconomic cycles during this short period of time.

The study of Glen et al. (1995) specified companies' investments from industrialized countries in emerging financial markets are not intended to achieve short-term dividends, but rather to increase the value of the companies acquired over the long term. In this regard, and given that our study covers a broader period and use a more suitable model for panel data analysis, we can apply this explanation provided by Glen et al. (1995) to the Moroccan financial market.

The other three corporate governance variables (percentage of independent directors on the board, ownership concentration, and institutional ownership) did not show a significant correlation with dividends.

Moreover, only two variables (P/B and firm size) of the three control variables present a significant correlation with dividends.

The coefficient of determination R^2 reached 24%, which means that 0.24 of the dependent variable variations could be explained by the independent variables used in our model

3.2. Testing the robustness of our empirical results using a second proxy for dividend distribution: "Payout ratio"

In order to validate the results of the regressions conducted on the first proxy of dividend distribution, we will run other regressions on the second proxy of dividend policy which is the payout ratio. The following table summarizes all our empirical results:

Table 4: Empirical results using two proxies of dividend distribution and different proxies for the independent variables

Fixed effect model was used and significant results are followed by one * when $\alpha = 10\%$; 2 ** when $\alpha = 5\%$; and 3 *** when $\alpha = 1\%$.

The results present the correlations between each independent variable and the 2 proxies of the dependent variable.

| | Regressions using: % of female directors; % of independent directors; Herfindahl index | | Regressions using: Number of female directors; Number of independent directors ; Herfindahl index | | Regressions using: % of female directors; % of independent directors; ownership % of the principal shareholder | | Regressions using: Number of female directors; Number of independent directors; ownership % of the principal shareholder | |
|---|---|--------------------|--|--------------------|--|--------------------|--|--------------------|
| Dependent variable | Dividend yield | Payout ratio | Dividend yield | Payout ratio | Dividend yield | Payout ratio | Dividend yield | Payout ratio |
| Firm age (Number of years since the date of creation) | Négative | Positive | Négative | Positive | Négative | Positive | Négative | Positive |
| Growth Opportunities (P/B) | Négative* | Négative | Négative* | Négative | Négative* | Négative | Négative* | Négative |
| Firm size (Ln of total assets) | Négative*** | Négative*** | Négative*** | Négative*** | Négative*** | Négative*** | Négative*** | Négative*** |
| Board size (Number of directors) | Positive*** | Positive*** | Positive*** | Positive*** | Positive*** | Positive*** | Positive*** | Positive*** |
| Female directors on the board (The used proxy is indicated in each column of this table) | Négative*** | Négative* | Négative*** | Négative* | Négative*** | Négative* | Négative*** | Négative* |

| | | | | | | | | |
|--|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|
| Independent directors on the board (The used proxy is indicated in each column of this table) | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive |
| Ownership concentration (The used proxy is indicated in each column of this table) | Positive | Négative | Positive | Négative | Positive | Négative | Positive | Négative |
| Institutional ownership (dummy variable) | Positive | Positive | Positive | Positive | Positive | Positive | Positive | Positive |
| Foreign ownership (dummy variable) | Négative*** | Négative** | Négative*** | Négative** | Négative*** | Négative** | Négative*** | Négative** |
| | | | | | | | | |
| Coefficient of determination (R ² within) | 24.32% | 18.79% | 24.37% | 18.81% | 24.34% | 18.78% | 24.40% | 18.80% |
| Number of total observations | 511 | 509 | 511 | 509 | 511 | 509 | 511 | 509 |
| Number of firms | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |
| Fisher test | Significant*** | | | | | | | |

Source : Stata software.

The above summary table shows that the following three corporate governance variables remain significant in all the regressions: board size, female directors and foreign ownership. The other three corporate governance variables do not present enough statistical evidence to be considered as dividend policy determinants.

Regarding the control variables, only firm size presents significant results in all our regressions. Coefficients of determination of the dividend yield regressions show higher rates compared to the payout ratio regressions. This situation reveals that our model explains better the Dividend yield proxy variations than those of the Payout ratio.

Conclusion

We first presented a literature review of the relationship between corporate governance and dividend policy. Indeed, two main hypotheses were developed by previous researchers in order to explain the different potential correlations between dividend payments and corporate governance. The outcome model, which predicts that well governed firms would pay higher dividends in order to prove to the shareholders that they are acting in their best interests; and the substitute model, which suggests that firms suffering from governance problems would pay higher dividends in order to reduce the available cash flow, and limit the risk of making non-optimal decisions. Then, we presented the dependent and independent variables, the model and the different hypotheses of the predicted correlations.

We conducted eight different regressions using two proxies for the dependent variable (the dividend yield and the payout ratio) and six corporate governance independent variables (board of directors' size; female directors; independent directors; institutional ownership; foreign ownership; ownership concentration; firm size; firm age; and growth opportunities). All the regressions were performed using the fixed effect model based on the Hausman test. In addition to this, we used three control variables, which are firm age, growth opportunities, and firm size. The results show that three corporate governance variables present significant results in all our regressions. Thus, we can conclude that board size, female directors and foreign ownership could be considered as determinants of dividend policy in the Moroccan stock exchange. Moreover, all the significant correlations are explained by the substitute model. This model suggests that firms would increase dividend payments in order to substitute their corporate governance weakness by limiting the available cash flow for the managers, which would reduce agency costs problems. Therefore, examining the impact of corporate governance variables on dividend payments allows us to improve our understanding of dividend policy of firms listed in Casablanca stock exchange.

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