

# **THE BOARD OF DIRECTORS AND DIVIDEND POLICY: THE EFFECT OF GENDER DIVERSITY**

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# **THE BOARD OF DIRECTORS AND DIVIDEND POLICY: THE EFFECT OF GENDER DIVERSITY**

## **ABSTRACT**

In this paper we aim to study the impact of gender diversity on Board of Directors (hereinafter BD) on dividend policy. We hypothesize that the percentage of women directors, the percentage of independent, institutional and executive female directors, and the percentage of shares held by women directors on BDs have an impact on the dividend policy of Spanish firms. Our results show that the percentage of female directors and shares held by female directors are positively associated with dividend payout, while the percentage of institutional women directors has a negative impact. The percentage of independent and executive female directors has no effect on dividend payout. The results confirm that gender diversity has influence on dividend payout, so the existing legislation should encourage more participation by women in governing bodies. Our evidence supports the Act for Effective Equality between Women and Men, which establishes that listing companies have to achieve a quota of 40% of women in decision-making bodies by 2015. However, the progress made is still too slow to meet the government's target, and for this reason we recommend that stronger government sanctions, combined with more effective equality plans within companies, are required for the quota to be met.

**Key words:** Corporate governance, Gender diversity, Dividend policy, Board of Directors, Gender quota

## INTRODUCTION

Agency theory posits that the separation between the ownership and control of the organization causes information asymmetries between shareholders and managers, which generate agency costs. The payment of dividends is considered one of the most important mechanisms to reduce or mitigate agency cost (Byoun et al., 2013; Jensen, 1986; Van Pelt, 2013). This is consistent with Bhattacharya (1979) and Ross (1977), who showed that firms with high information asymmetry paid higher dividends in order to signal their prospects to shareholders.

Prior evidence analyses the influence on dividend payout of ownership concentration (Chen *et al.*, 2005; Erol and Tirtiroglu, 2011), outside directors (Al-Najjar and Hussainey, 2009; Setia-Atmaja, 2010), taxes on dividends (Amihud and Murgia, 1997), future earnings (Flint *et al.*, 2010; Lee, 2010; Vermeulen, 2011) and investor protection (La Porta *et al.*, 2000), among others. However, academic literature on dividend policy has paid little attention to other features, including gender diversity.

Corporate governance literature shows that gender diversity on corporate boards may influence the supervision and control of the board's activities (see, e.g., Adams and Ferreira, 2009; Erhardt et al., 2003; Huse et al., 2009; Huse and Solberg, 2006; Nielsen and Huse, 2010; Rose, 2007). The effect of gender diversity on corporate boards (within the corporate governance system) has become relevant today for shareholders and managers of modern firms, mass media, politicians and legislators, among others, because many countries have already legislated laws or advanced policies that are aimed at increasing the percentage of women directors on boards of directors (hereinafter BD) (e.g. Norway, Spain and France). Focusing on Spain, Act 3/2007, "The Equality Law", was issued in 2007 in order to establish a target gender quota of 40% on boards of listed companies to be reached by 2015.

Most previous research provides evidence that women on boards have an important influence on firm performance (Adler, 2001; Adam and Ferreira, 2003; Campbell and Mínguez-Vera, 2008; Carter et al., 2003; Catalyst, 2004; Farrel and Hersch, 2005; Shrader et al., 2007; Krishnan and Park, 2005), fostering good corporate practice (Burgess and Tharenou, 2002; Rogelberg and Rumery, 1996) and financial reporting quality (Gulzar and Wang, 2011; Qi and Tian, 2012), among others. Thus, given the importance of women on boards in allocating capital to corporations, their role in firm governance (Campbell and Mínguez-Vera, 2008; Terjesen et al., 2009), and the scant research performed combining gender diversity on BDs and dividend payment (Van Pelt, 2013; Wellalage *et al.*, 2012), an understanding of how gender diversity on BDs affects dividend policy is undoubtedly needed. Thus, the aim of this study is to contribute to the growing literature on the role of women in corporate governance and, more concretely, to analyse whether gender diversity on BDs has an effect on the dividend policy of the companies.

This study contributes to the literature by showing that gender diversity on BDs influences the dividend policy of firms, concretely the percentage of women directors, the percentage of institutional women directors and the percentage of shares held by women directors. Our evidence supports the Spanish Law (Act 3/2007 of 22 March, for Effective Equality between Women and Men), which is based on the premise that corporate boards' female quote should be 40%. The Spanish legislator allows listing companies to achieve this gender quota by 2015, so the current legislation should encourage more participation by women in governing bodies. However, the progress made is still too slow to meet the government's 2015 target, and for this reason we recommend that stronger government sanctions, combined with more effective equality plans within companies, are required for the quota to be met. Secondly, our study provides evidence that gender diversity on BDs can alleviate the agency problem of free cash flow by monitoring and resolving the manager–shareholder conflict in an effective way;

this is particularly true in the Spanish context, where two important agency problems are currently weak, namely shareholder rights and low management ownership. Thirdly, our findings suggest that a diverse board yields benefits to shareholders through its effect on dividend policy, and further contributes to the literature on the factors that influence dividend payout policy. This may be useful for current and potential shareholders of listing firms to know more deeply the dividends policies of the companies in which they invest. Finally, Spain is a good context in which to examine the effect of gender diversity on BDs on dividend policies, since most of the studies about dividend policy refer to non-European countries (Bathala and Rao, 1985; Zhou and Ruland, 2006; Rakotomavo, 2010; Gupta and Parua, 2012; Said, 2013).

The structure of this paper is as follows. After this introduction, the second section focuses on the theoretical background. The third section describes the institutional background, while in the fourth section we review the previous literature and develop the hypotheses. The fifth section describes the sample, methodology and variables used in the study; the sixth section shows the obtained results. In the final section, we discuss our conclusions; explain the limitations inherent to this study and the future lines of research.

## **THEORETICAL BACKGROUND**

Gender diversity on corporate boards has received growing attention within corporate governance (Carrasco and Laffarga, 2007). Research suggests that women play a significant role in enhancing board effectiveness and shows the positive impact of board gender diversity on improving the quality of financial information, fostering good corporate practice or dividend policy (Burgess and Tharenou, 2002; Rogelberg and Rumery, 1996; Wellalage et al., 2012). Most previous research (Easterbrook, 1984; Jensen, 1986; Rozeff, 1982) draws on agency theory to analyse the influence of dividend policy when there are conflicts of interest

within organizations and also to examine the link between gender diversity on BDs and dividend policy (Van Pelt, 2013; Wellalage et al., 2012). Thus, this study focuses on agency theory.

According to agency theory, the separation between the ownership and control of the firm generates information asymmetries between the parties, because the owners of a firm have delegated to managers to act on their behalf. This informational disadvantage between both parties includes information about the firm's prospects, earnings and risk aversion, among others. Jensen and Meckling (1976) explained that information asymmetry between managers and shareholders might lead to agency costs. This gives rise to a conflict of interest between ownership (principal) and the control of the firm (agent), and therefore becomes an agency problem, which makes investors pessimistic about future cash flows being absorbed (Krafft et al., 2013). Managers take daily decisions about the firm's earnings, although they do not always adopt dividend policies which benefit the shareholders' interests. From time to time, they may choose a dividend policy that maximizes their own private benefits. Grossman and Hart (1980) documented how dividend payout mitigated agency conflicts by reducing the amount of free cash flow available to managers. In the same vein, Jensen (1986) showed that the distribution of dividends reduces free cash flow at managers' disposal, prevents unprofitable projects and alleviates agency costs. Hwang *et al.* (2013) demonstrated that dividend payments reduced the amount of free cash flow, thus reducing minority shareholder rights.

Given that it has an effect on both of their interests, dividend policy is the most important economic and financial policy for managers and investors. Furthermore, it affects the value and financial and economic capacity of the firm. Dividend payouts reduce the total amount of retained profit and reduce financing with private capital. For this reason, dividend policy depends on companies' profit distribution priorities and investment financing decisions.

The payment of dividends, managerial equity ownership and debt financing are considered effective mechanisms in mitigating agency conflicts of interest within the firm (Bathala and Rao, 1995; Díez *et al.*, 2001). Rozeff (1982) analysed 1000 firms on the Value Line Investment Survey, and evidenced that dividend payments could be part of a corporate monitoring tool. In a similar manner, Easterbrook (1984) argued that dividends help alleviate agency conflicts by exposing firms to more frequent monitoring by primary capital markets, as paying dividends increased the probability that new common stock had to be issued. De Angelo *et al.* (2004) showed that firms with high cash and low debt capital structures paid dividends to mitigate agency costs. Sedzro (2010) examined repurchases and regular and special dividends, and concluded that firms with agency problems increased their regular dividends. However, Chay and Suh (2009) analysed 5000 firms from Australia, Canada, France, Germany, Japan, the UK and the US, and found weak association between payout policy and agency conflicts.

Agency theory also suggests that women on corporate boards might make stronger existing control mechanisms over managers and executives since female directors on BDs increase board independence and are inclined to ask many questions (Carter *et al.*, 2010). Gender heterogeneity among board members improves mutual monitoring and it serves as a “watchdog for shareholder” (Kandel and Lazear, 1992). Thus, women directors on BDs have the potential to help align the incentives of shareholders and managers though their impact on the pay-out policy, since they may have high cash flows, and to reduce free cash flow problems they may pay high dividends to their shareholders. Moreover, boards with a high proportion of female directors may reduce impediments for dividend pay-out. These views are supported by authors such as Knyazeva *et al.* (2009), who demonstrated that heterogeneous boards were associated with lower cash holdings and higher dividends, and Wellalage *et al.* (2012), who documented that the presence of female directors on BDs and CEO duality could

pay higher dividends to shareholders. In the same line, Byoun *et al.* (2013) documented that gender diversity on BDs increased the payment of dividends when firms have greater agency problems regarding free cash flow, suggesting that females on BDs helped mitigate the free cash flow problem and Van Pelt (2013) reported that the percentage of women on BDs increased payout dividends.

## **INSTITUTIONAL SETTING**

The context in which this study is framed is crucial, and for this reason a brief overview of some important issues concerning Spanish dividend policy is provided. In this sense, we deal with the financial situation, corporate governance system and gender diversity.

The recent worldwide financial crisis has led to the international financial system losing its credibility. In addition, firms have problems in getting funding because banks do not provide financing to them. Many Spanish firms have difficulty in getting financing. Firstly, Spanish banks have cut their financing to clients and firms. On the other hand, firms cannot use internal financing because they cannot attend to their debts. Companies are going bankrupt because they cannot pay their debt, consequently leading to increasing unemployment.

The Spanish corporate governance system is characterized by the presence of few large shareholders or independence on their boards, under-developed capital markets, no active market control, high ownership concentration and a one-tier board system (all directors, executives and non-executives form one board). In this sense, De Miguel *et al.* (2004) showed that ownership concentration is higher in Spain than in countries such as the US, the UK, Japan and Germany. In these countries, important institutions, such as the government and large banks, have become controlling shareholders. As in other continental European corporate governance systems (Faccio and Lang, 2002), most of these institutions attain an important position on boards as they represent the interests of large shareholders and

institutional investors (Kirchmaier and Grant, 2005). Most of these institutional investors are banks, investment funds and insurance companies. Institutional investors directly influence the management's activities through their ownership, and indirectly by trading their shares (see Montalban and Sakinç, 2013). In this vein, Delgado-García *et al.* (2010) documented that ownership concentration in the hands of the largest shareholder erodes the corporate reputation of Spanish firms. Continental European countries' financial systems contrast with Anglo-American ones because the latter do not consider institutional investors as significant members of the board.

Spain has undergone significant legal and institutional changes in order to increase the transparency of the stock markets and to protect minority shareholders. One of the consequences has been the issue of several codes of Corporate Governance: Olivencia in 1998, Aldama in 2003, and finally, the Conthe Code in 2006 which are characterized by a "comply or explain" principle in the enforcement of corporate governance regulations.

On the other hand, it is worth noting that the continuous political and socio-economic changes in Spain in recent years have increased gender diversity on boards of directors. This increase was enhanced by the CUBG (2006), whose recommendations are intended to support female presence on decision-making bodies, including ACs, and by the implementation of Act 3/2007 of 22 March, in 2007, for Effective Equality between Women and Men (LOIMH, 2007), which frames the regulation of the appointment of men and women on boards of directors in an equitable way. In fact, the LOIMH (2007) forces Spanish boards of listed companies to reach a gender quota of 40% by 2015 (a detailed analysis of gender quotas for BDs in several countries can be found in Terjesen *et al.*, 2014). According to González-Menéndez and Martínez-González (2012), after the recommendations of the CUBG (2006) and the debate of the Draft Equality Law (later Act 3/2007 of 22 March, LOIMH), most of the improvements in women's representation on boards occurred between 2005 and 2006.

However, the study of Gómez (2005) documented that the presence of women on Spanish boards of directors was lower than in other European Union countries.

Gender issues in Spain came to the political and business arena later than in other countries mainly for historical reasons. Spain, from 1936 to 1975, was governed by the dictator General Franco, who ruled in a conservative way. In this context, he prohibited women to work, own property or open a bank account, among others. The end of the dictatorship contributed to the fact that women entered the workforce in significant numbers. Consequently across the world, including Spain, between the 1980s and the 1990s women's participation in labour markets grew considerably; however, female participation is lower than that of men in most European countries, especially in Spain, where the percentage of women in the Spanish workforce is lower than in other OECD countries (Campbell and Mínguez-Vera, 2008). The relevant drive to promote the presence of women in the Spanish workforce, and particularly in boardrooms, came from the socialist Prime Minister José Luís Rodríguez Zapatero, who made gender equality one of his government's top priorities and approved the Conthe Code or CUBG (2006) and the LOIMH (2007). In light of this, González-Menéndez and Martínez-González (2012) analysed the Spanish Labour Force Survey and reported that the presence of women directors on the listed firms' corporate boards rose from 5.6% in 2004 to 10.40% in 2010 (an in-depth discussion about the historical background to the role of women in Spain and its recent legislative development can be seen in Campbell and Mínguez-Vera, 2008).

## **LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT**

## **Hypothesis**

### ***Percentage of female directors on Boards of Directors***

Gender diversity on BDs can help to mitigate agency problems by monitoring and resolving conflicts of interests between managers and shareholders (Jurkus *et al.*, 2011). Authors such as Page (2008), Anderson *et al.* (2011) and Byoun *et al.* (2013), among others, argue that gender diversity on BDs could decrease the conflicts between the principal and the agent.

Previous evidence focuses on the analysis between women on BDs and dividend payout. In this sense, Knyazeva *et al.* (2009) examined the Compustat database, CDA Spectrum and Corporate Library's Board Analyst data for the period 2001–2006, and found that board heterogeneity is associated with higher dividends. Wellalage *et al.* (2012) observed the Shenzhen Stock Exchange (SZSE) from 2001 to 2005, and documented how the presence of female directors could mean higher dividends paid to shareholders. Byoun *et al.* (2013) consider 2,234 firms of Investor Responsibility Research Center (IRRC) database, and showed that firms with more gender diverse BDs are more likely to pay larger dividends than firms without diversity on their BD when firms perform large free cash flows and cause agency problems. In particular, firms with gender diversity on their BD are associated with a roughly 15% higher probability of paying dividends than firms without gender diversity. Van Pelt (2013) analysed a total number of 1,350 firm-year observations, and considered that gender diversity on BDs increased payout dividends. Nevertheless, Lückerrath-Rovers (2013) examined 116 Dutch companies listed on the Amsterdam Euronext Stock Exchange, and found that firms with female directors paid lower dividends than companies without female directors. Similar evidence was provided by Jurkus *et al.* (2011).

In sum, the previous literature seems to support the hypothesis that women's presence on BDs has positive impacts on dividend payout. Therefore, we predict that the percentage of female on BDs may have a positive effect on dividend payout. Ye *et al.* (2010) provide evidence that

companies with a higher proportion of women directors perform better than those without gender diversity, and this could increase the dividend payout. Hence, we posit the following hypothesis:

*Hypothesis 1: The percentage of female directors on the Board of Directors is positively associated with the dividend policy*

### ***Percentage of female independent directors on Boards of Directors***

The presence of independent members on BDs is essential to perform the functions of monitoring and supervision. Independent directors can constrain the management's opportunistic dividend policies, which often benefit them and other stakeholders at the expense of shareholders. In recent years, the proportion of independent directors on BDs has increased because of the need to protect shareholders from managerial abuse and to maximize firm value (Linck *et al.*, 2009). Independent directors have strong incentives to issue independent and free judgment relating to management influence (Fama and Jensen, 1983; Weisbach, 1988; Linck *et al.*, 2009).

Previous studies have examined the relationship between the presence of independent directors on BDs and dividend payout. In this sense, Belden *et al.* (2005) examined 524 companies listed in the Forbes 500 list of the largest American companies, and showed that firms with more outside directors paid higher dividends. Setia-Atmaja (2010) concluded that the presence of independent members on the BDs listed on the Australian Stock Exchange increased the dividend payout ratio. Sharma (2011) examined 944 firms of S&P 1500, and evidenced that greater independent director representation on the BD has a positive and significant influence on the propensity to pay dividends. In the same vein, Al Shabibi and Ramesh (2011) studied the Forecasting Analysis and Modelling Environment (FAME) database in 2007, and reported that the increment of independent directors on the BD

positively influenced the dividends paid to shareholders. Furthermore, Wellalage *et al.* (2012) documented a positive relationship between the proportion of independent directors and the payment of high dividends; while Byoun *et al.* (2013) reported that the existence of more independent board members tends to pay higher dividends. O'Connor (2013) analysed 220 companies from 21 countries, and demonstrated that dividend payout increased in firms where board independence was higher. Contrary to this evidence, other studies (e.g. Bathala and Rao, 1995; Borokhovich, *et al.*, 2005; Ruiz *et al.*, 2008; Al-Najjar and Hussainey, 2009; Tseng *et al.*, 2012) showed that there was a negative relationship between independent directors and dividend payout.

Previous evidence does not directly address the relationship between independent women on BDs and dividend policy. Notwithstanding, we predict a positive association between the proportion of independent female directors and dividend payout, as this will allow them to possess more comprehensive control over members of the board (Erhardt *et al.*, 2003), which could also reduce conflicts of interests between directors and shareholders (Jurkus *et al.*, 2011).

Hence, we posit our second hypothesis in the following manner:

*Hypothesis 2: The percentage of female independent directors on the Board of Directors is positively associated with the dividend policy*

### ***Percentage of female institutional directors on Boards of Directors***

Institutional directors are those who hold a percentage of shares greater than or equal to what is considered legally significant, or who have been appointed in their capacity as shareholders despite their shareholding not reaching that amount and who thus represent the aforementioned shareholders (CUBG, 2006). For this reason, institutional investors have been the most important controlling shareholders in cases where the principal agency conflict has

been based on the expropriation of minority shareholders' wealth by controlling shareholders. Therefore, institutional owners can monitor the company and influence the amount of dividends paid. In this sense, Chen *et al.* (2005) suggested that dividend payout has been used by controlling shareholders in smaller Hong Kong companies as a way of extracting resources from the firms they control.

Previous works have examined the relationship between institutional investors and dividend payout. Faccio and Lasfer (2000) analysed the monitoring role of pension funds in 289 firms in 1996, and found that firms with high levels of pension fund ownership were less likely to be efficient or to pay higher dividends than their industry counterparts. Gugler (2003) investigated Austrian firms over the 1991–1999 period, and documented that state-controlled firms exhibit a higher dividend payout than family-controlled firms. Khan (2006) examined the UK Stock Exchange, and showed a positive relationship between the level of insurance company shareholding and dividends payout, while a negative relationship was found for shareholding by individual investors. Al-Kuwari (2012) observed 37 non-financial firms listed on the Kuwait Stock Exchange in an emerging market between 1999 and 2003, and found that the government ownership increased the probability of paying dividends, consequently resulting in reduced agency problems. Similar evidence was reported by He *et al.* (2012).

A large number of previous studies provide evidence that institutional ownership contributes to increased dividend payout (e.g. Han *et al.*, 1999; Short *et al.*, 2002; Farinha, 2003; Abdelsalam *et al.*, 2008; Hovakimian and Li, 2010; Van Pelt, 2013). Nevertheless, Kania and Bacon (2005), Amidu and Abor (2006), Azzam (2010) and Ferreira *et al.* (2010), among others, found that institutional ownership was negatively associated with dividend payout. These studies do not directly examine the relationship between female institutional directors and dividend payout. In addition, previous evidence regarding the relationship between

institutional directors and dividend payout is inconclusive. For this reason, we predict that the percentage of female institutional directors can either positively or negatively affect the dividend payout.

Hence, we pose the following hypothesis:

*Hypothesis 3: The percentage of female institutional directors on the Board of Directors is positively and negatively associated with the dividend policy*

### ***Percentage of female Executive Directors on Boards of Directors***

The presence of executive directors on BDs reduces firm performance due to agency costs arising between internal directors and minority shareholders (Cho and Kim, 2007). Dividend payout has been used by companies to reduce agency problems between owners and managers (Easterbrook, 1984; Jensen, 1986; La Porta *et al.*, 2000).

According to Jensen (1986), CEO duality on BDs increased the concentration of power in one person, leading to opportunistic behaviour that was contrary to the interests of shareholders. Maury and Pajuste (2002) examined the Helsinki Stock Exchange from 1999 to 2000, and showed firms paid lower dividends when the CEO was a large shareholder. Zhang (2008) compared the cash dividend policy of Chinese firms listed in Hong Kong and those on the Mainland, and showed that Mainland-listed firms with combined CEO and chairman titles on their BD tended to pay lower cash dividends; however, there was no such evidence about Hong Kong-listed firms. Francis *et al.* (2009) studied the ExecuComp database, and documented that female CFOs reduced dividend payouts. Deshmukh *et al.* (2010) used panel data from large US companies over the period 1980–1994, and documented that firms managed by overconfident CEOs had lower levels of dividend payout. In this sense, Banerjee *et al.* (2013) studied 3,492 observations from the Compustat database, and evidenced that overconfident CEOs tended to prefer not to pay dividends, preferring instead to substitute

dividends for stock. Wellalage *et al.* (2012) analysed the Shenzhen Stock Exchange, and showed that CEO duality on boards resulted in higher dividends. Meanwhile, Van Pelt (2013) found a negative association between the percentage of inside directors on BDs and dividend payout. However, Mansourinia *et al.* (2013) examined a sample of companies listed on the Tehran Stock Exchange during the period 2006–2010, and found that there was not a significant relationship between CEO duality and dividend policy.

Other studies concluded that CEO duality was positively associated with dividend payout (Cheung *et al.*, 2005; John and Knyazeva, 2006; Feng *et al.*, 2007; Obradovich and Gill, 2012; Wellalage *et al.*, 2012). Abor and Fiador (2013) observed a sample of listed firms on the Johannesburg Stock Exchange, the Nigerian Stock Exchange, the Nairobi Stock Exchange and the Ghana Stock Exchange during the period 1997–2006, and showed that Nigerian firms which separated the roles of CEO and chairman on the corporate board had higher dividend payouts.

Previous literature focuses on the impact that executive directors on BDs have on dividend payout; however, the effect that female executives on BDs have on dividend policy has not been previously analysed. Despite this, we predict that the presence of female executive directors on BDs is negatively associated with dividend payout, since a lower payout of dividends will allow firms to reduce agency costs.

Thus, we posit the following hypothesis:

*Hypothesis 4: The percentage of female executive directors on the Board of Directors is negatively associated with the dividend policy*

***Percentage of shares held by female directors on Boards of Directors***

Agency theory argues that when shareholders have greater rights (voting power), they can use this power to influence dividend policy. A strong legal system helps to protect minority shareholders from majority shareholders' opportunistic behaviour, such as wealth expropriation and excessive compensation. La Porta *et al.* (2000) and Wellalage *et al.* (2012) evidenced that countries with weak legal protection for minority shareholders paid lower dividends.

Most of previous studies analyse the relationship between shareholders' rights – by means of voting – and dividend payout. Nielsen (2005) studied the Compustat Industrial Annual Database from 1987–2003, and demonstrated that companies with weaker shareholders were more likely to pay dividends. Jiraporn and Ning (2006) examined 3,732 firm-year observations, and evidenced that firms where shareholder rights were weak paid out higher dividends. However, Kowalewski *et al.* (2007) observed 110 non-financial listed companies on the Warsaw Stock Exchange, and showed that companies with strong shareholder rights paid more dividends than firms with low corporate governance standards. Adjaoud and Ben-Amar (2010) observed 714 firm-year observations, and evidenced that when shareholder rights were strong, the dividend payout increased, as shareholders could use their powers to pressure managers to pay higher dividends. Hwang *et al.* (2013) studied a sample of Korean companies during the period 2003–2010, and evidenced that firms with weaker shareholder rights paid lower dividends.

Other studies (Pérez-González, 2003; Troung and Heaney, 2007; Ramli, 2011) evidenced that the largest shareholder often increased dividend payout. Nevertheless, authors such as Maury and Pajuste (2002), Gugler and Yurtoglu (2003) and Mancinelli and Ozkan (2006), among others, found that the largest shareholders reduced dividend payout levels. Moreover, Zeckhauser and Pound (1990) studied 287 firms in the Value Line Investment Survey, and

concluded that there was no significant difference among dividend payouts with or without large shareholders.

Previous evidence about the impact of shares held by directors (shareholders vote rights) on dividend policy does not deal with the relationship between shares held by female directors and dividend policy. Regardless, we predict that the shares held by female directors on BDs may have a positive effect on dividend payout, since shareholders could use their power by means of their voting rights to pressure managers to pay higher dividends (Adjaoud and Ben-Amar, 2010), and therefore female directors could increase their personal benefits.

Hence, we posit the following hypothesis:

*Hypothesis 5: The percentage of shares held by female directors on the Board of Directors is positively associated with the dividend policy*

## **EMPIRICAL DESIGN**

### **Sample**

The sample is drawn from the population of Spanish non-financial firms listed on the Spanish Stock Exchange during 2004–2012. We exclude financial companies both because they are under special scrutiny by financial authorities that constrain the role of their board of directors, and due to their special accounting practices. Spanish data is obtained from the “Sistema de Análisis de Balances Ibéricos” (SABI) database, from the annual corporate governance reports that all listed companies have been required to publish since 2003 and from the companies’ Web pages.

We build an unbalanced panel of 910 firm-year observations from 174 firms. Our sample roughly accounts for more than 95% of the capitalization of Spanish non-financial firms. The panel is unbalanced because some firms became public during this time period, while other firms delisted as a consequence of mergers and acquisitions. Nevertheless, the estimations

based on unbalanced panels are as reliable as those based on balanced panels (Arellano, 2003).

## **Variables**

The dependent variable (DPY) is calculated in three ways: (1) as a dummy variable that takes the value of 1 if the company pays dividends, and 0 otherwise (Al-Malkawi, 2008; Al-Najjar and Hussainey, 2009; Byoun *et al.*, 2013); (2) as cash dividends on common stock divided by the market value of common stock of firms listed on the Madrid Stock Exchange (Fenn and Liang, 2001); (3) as the logarithm of the total amount of dividend paid per share in the accounting year (Kumar, 2006).

As independent variables, we define the percentage of female directors on the BD as PERWDBD; it is calculated as the ratio between the total number of women on the BD and the total members of the BD. The PERIWDBD variable represents the percentage of independent women directors on the BD; this is calculated as the ratio between the total number of independent female directors on the BD and the total number of directors on the BD. The PERINSWDBD defines the percentage of institutional female directors; it is calculated as the ratio between the total number of institutional women directors on the BD and the total number of directors on the BD. The percentage of executive female directors on the BD is defined as PEREWDBD; it is calculated as the ratio between the total executive women directors on the BD and the total number of directors on the BD. Finally, the variable OWNWOMBD represents the percentage of shares held by female directors on the BD; it is calculated as the proportion of shares held by women directors.

We control for a number of factors supported by previous evidence (see Rozeff, 1982) that can potentially affect dividend payout. OWNCON measures ownership concentration and is

calculated as the percentage of shares held by shareholders holding at least 10% of the firm's stock (Sedzro, 2010). Rozeff (1982), Jensen *et al.* (1992), Gugler and Yurtoglu (2003) and Kumar (2006), among others, showed a negative relationship between the ownership concentration and dividend payout. Another control variable used is investment opportunities; in line with Ruiz *et al.* (2008), and we define it as IO, which is calculated as the rate of assets growth. Authors such as Rozeff (1982), Díez *et al.* (2001), Fama and French (2001), Mitton (2004), Denis and Osobov (2008), Ruiz *et al.* (2008), Al-Najjar and Hussainey (2009), Setia-Atmaja (2010), Sharma (2011) and O'Connor (2013) demonstrated a negative relationship between growth opportunities and dividend payout. The ownership of managers is also considered as control variable; it is defined as OWNMANG and calculated as the percentage of stocks owned by directors. Previous studies (Rozeff, 1982; Fama and French, 2001; Short *et al.*, 2002; Hu and Kumar, 2004; Azzam, 2010) reported a negative relationship between the percentage of shares held by managers and dividend policy.

LEV is calculated as the ratio of book value of debt over total assets, and represents the leverage level of the firm. Previous literature (e.g. Díez *et al.*, 2001; Fama and French, 2001; Fenn and Liang, 2001; DeAngelo *et al.*, 2004; Ruiz *et al.*, 2008; Setia-Atmaja, 2010; Jirapon *et al.*, 2011; Sharma, 2011, Byoun *et al.*, 2013) has shown that high financial leverage was negatively related to dividend payout. We also control for profitability, which is defined as ROA, and calculated as the ratio of earnings before interest and taxation (EBIT) over book assets (O'Connor, 2013). Díez *et al.* (2001), Fama and French (2001), Kania and Bacon (2005), Amidu and Abor (2006), Denis and Osobov (2008), Abdelsalam *et al.* (2008), Al-Najjar and Hussainey (2009), Jirapon *et al.* (2011), Al Shabibi and Ramesh (2011) and O'Connor (2013) demonstrated that firms with a high return on assets ratio had a greater potential to pay dividends. ROE represents the profitability of stockholders' investments and, in line with Díez *et al.* (2001), is calculated as the net income divided by stockholders' equity.

Previous evidence documented that there was a negative relationship between returns on equity and the dividend payout (e.g. Diez *et al.*, 2001; Azofra and López-de-Fornoda, 2007; Ali Shah *et al.*, 2011; Metha, 2012).

Previous literature shows a positive association between firm size and the dividend payout (e.g. Fama and French, 2001; DeAngelo *et al.*, 2004; Denis and Osobov, 2008; Ruiz *et al.*, 2008; Al-Najjar and Hussainey, 2009; Adjaoud and Ben-Amar, 2010; Setia-Atmaja, 2010; Al Shabibi and Ramesh, 2011; Jirapon *et al.*, 2011; Byoun *et al.*, 2013; O'Connor, 2013). Thus, we define firm size as FIRMSIZE; it is calculated as the natural logarithm of total assets of the firm. Finally, various studies (e.g. Obradovich and Gill, 2012; Mansourinia *et al.*, 2013) reported that board size had a positive impact on pay dividends. We therefore define board size as BDSIZE and calculate it as the total number of directors serving on the board (Obradovich and Gill, 2012).

The variables used in the model and the expected signs of each are shown in table 1.

Insert Table 1 about here

## **RESULTS**

### **Descriptive Statistics**

Table 2 presents the mean value, the standard error and the 25th, 50th and 75th percentiles of all the variables. As can be seen, 56% of the Spanish firms decide to pay dividends. In addition, the average ratio between cash dividends on common stock and the market value of common stock of firms is 38'579, with firms paying 5'777€ on average (logarithm of total amount of dividends paid per share in the accounting year). Furthermore, the statistics reveal that 7'8% of BD's members are women, being 2'9% female independent directors, 3'8% female institutional directors and 0'8% are female executive directors.

The ownership of the firms held by women on BDs is 2'40%, the ownership concentration of the companies is 54'20%, the investment opportunities are 20'90% and the management ownership is 26'81%. Also, it can be seen that the level of leverage is 60'20%; the return on assets is, on average, -2'20%, while the return on equity is -9'20%. Finally, the firm size is 13'30 (log of the total assets), while the board size, on average, is 10'78 members.

Insert Table 2 about here

Table 3 presents the mean differences of the independent variables of Model 1, where the dependent variable DPY1 is a dummy variable which takes the value 1 if the company pays dividends, and 0 otherwise. Two groups have been made up in order to analyse mean differences among independent variables in relation to whether the company pays dividends or not. The results in Table 3 show that the mean difference of the variable percentage of independent female directors on BDs is positive and statistically significant at a level of 1%. Therefore, we can accept the second hypothesis. Thus, these findings show that there is a positive association between the percentage of independent women directors and the dividend payout. Concerning the remainder of independent variables, each present the expected sign, but none are statistically significant. Thus, the first, third, fourth and fifth hypotheses cannot be accepted.

Insert Table 3 about here

In Table 4 we provide the mean differences for the independent variables of Model 2, where the dependent variable DPY2 represents the dividend payment in relation to the capitalization. Two groups have been created according to the median of the dependent variables (which is

7'14). This analysis reveals that, as in Model 1, the percentage of independent women directors on BDs is positive and statistically significant at a 1% level. Hence, we can accept the second hypothesis. Therefore, the percentage of independent female directors is positively associated with the ratio between cash dividends paid per share and firm capitalization. The remainder of independent variables offers the predicted sign, but they are not statistically significant.

Insert Table 4 about here

Table 5 shows the mean difference for the independent variables of Model 3, where the dependent variable DPY3 represents the dividend payment per share in the accounting year. The median of the dependent variable to create the two groups is 7'65. The analysis of the results reveals that the percentage of independent women directors and the percentage of institutional female directors on BDs present the expected sign and are statistically significant at a level of 1% and 5%, respectively. Hence, we can accept the second and third hypotheses. Thus, according to these results, we can conclude that a higher percentage of independent female directors on BDs makes them more likely to pay dividends, while the percentage of institutional female directors on BDs means they are less likely to pay dividends. The rest of independent variables are not statistically significant.

Insert Table 5 about here

## **Regression Results**

In Table 6 we present the results for the Spearman correlation matrix in order to test for multicollinearity. The correlation between most of the pairs is not significant and is low (generally below 0.5). Further, none of the correlation coefficients are high enough ( $>0.80$ ) to cause multicollinearity problems (see Archambeault and DeZoort, 2001). According to these results, we can conclude that these models do not have significant multicollinearity problems. In any case, we also calculate the vector inflation factor (VIF) to corroborate that our results are not biased because of the multicollinearity.

Insert Table 6 about here

In Table 7 we show the results of the regression for women directors on BDs. As can be observed, we have built three models. In Model 1 we examined whether firms pay or do not pay dividends; in Model 2 we examine the dividend payment in relation to capitalization; while in Model 3 we analyse the of the total amount of dividend payout per share in the accounting year. The statistic tests show that the three models are statistically significant at 1%.

Insert Table 7 about here

According to our predictions – and as can be appreciated in Model 1, where the dependent variable takes the value 1 if the company pays dividends, and 0 otherwise – the percentage of female directors on BDs (PERWDBD) presents the expected sign and is statistically significant at 1%. Thus, we can accept the first hypothesis: the percentage of women directors on BDs increases the probability of dividend payout. Authors such as Knyazeva *et al.* (2009), Byoun *et al.* (2013) and Van Pelt (2013) also provide evidence of the positive relationship between the percentage of women on BDs and dividend payout. As predicted, the variable

percentage of institutional female directors on BDs (PERINSWDBD) offers a negative sign and is statistically significant at 5%. Thus, the third hypothesis can also be accepted. Therefore, we can conclude that the percentage of institutional women directors on BDs negatively influence decisions regarding paying dividends. Similar evidence was reported by Kania and Bacon (2005), Amidu and Abor (2006), Azzam (2010) and Ferreira *et al.* (2010), among others. The remainder of independent variables, the percentage of independent female directors (PERIWDBD), the percentage of executive women directors (PEREWDBD) and the percentage of shares held by female directors on BDs (OWNWOMBD) offers the expected sign, but they are not statistically significant. Hence, we cannot accept the second, fourth and fifth hypotheses, and therefore we cannot provide evidence that the percentage of independent and executive women directors and the percentage of shares held by female directors on BDs have an impact on dividend payout. In this sense, Cotter and Sylvester (2003), Chen *et al.* (2005), Abdelsalam *et al.* (2008) and Mansourinia *et al.* (2013), among others, documented that no significant association was found between independent directors and dividend payout. Concerning the non-relationship between executive directors and the decision of paying dividends, Abor and Fiador (2013) and Mansourinia *et al.* (2013) provide similar findings, while Zeckhauser and Pound (1990) and Al-Kuwari (2012) also evidenced that large shareholders did not affect dividend payout decisions, which is in line with our findings.

Regarding the control variables, it can be observed that the variables investment opportunities (IO), leverage (LEV), firm size (FIRMSIZE) and board size (BDSIZE) present the expected sign and are statistically significant. In addition, the return on equity (ROE) offers a positive sign – contrary to that expected – and is statistically significant. In the same vein, Aivazan *et al.* (2003), Abdelsalam *et al.* (2008) and Malik *et al.* (2013) documented that there was a positive relationship between returns on equity and dividend payout. Thus, these findings report that high investment opportunities and levels of leverage are negatively associated with

decisions relating to paying dividends, whereas a company is more likely to pay dividends when returns on equity (ROE), firm size and board size increase. The rest of control variables provide the expected sign, but they are not statistically significant.

In Model 2, where the dependent variable is the ratio between cash dividends on common stock and the market value of firms' common stock, the independent variables for the percentage of female directors (PERWDBD) and the percentage of shares held by female directors on BDs (OWNWOMBD) present a positive sign and are statistically significant at 1% and 5%, respectively. Thus, the first and fifth hypotheses can be accepted, and we can conclude that the percentage of women directors and the percentage of shares held by women on BDs increase the ratio between cash dividends and capitalization. On the other hand, the variable percentage of institutional directors on BDs (PERINSWDBD) presents a negative sign and is statistically significant as expected. As a result, we can accept the third hypothesis. Therefore, this result implies that as the percentage of institutional female directors increases, it is more likely that the ratio between cash dividends and capitalization will decrease.

In addition, the percentage of independent female directors on BDs (PERIWDBD) and the percentage of female executive directors (PEREWDBD) provide the predicted sign; however, they are not statistically significant. Hence, we cannot accept the second and fourth hypotheses. As a result, we conclude that, as reported in Model 1, the percentage of female independent and executive directors on BDs has no impact on the ratio of dividend policy.

Contrary to our predictions with respect to the control variables, the ownership concentration (OWNCON) shows a positive sign and is statistically significant at a level of 1%. In the same vein, Ahmed *et al.* (2009) and Chen *et al.* (2009) documented that listed companies in Pakistan and China paid more dividends, respectively, as ownership became more concentrated. In addition, the board size (BDSIZE) presents the expected sign and is significant at 1%. According to these findings, we can conclude that companies whose

ownership is concentrated and whose BDs are large are more likely to pay dividends. The rest of the control variables are not statistically significant.

In Model 3, where the dependent variable is the logarithm of the total amount of dividends paid per share in the accounting year, the results reveal that the percentage of female directors (PERWDBD) and the percentage of shares held by female directors on BDs (OWNWOMBD) present the expected sign and are statistically significant at 5% and 10%, respectively. Thus, we can accept the first and fifth hypothesis, and can therefore reach the conclusion that the dividend payment will increase when the percentage of women directors and the percentage of shares held by women directors on BDs also increases. As predicted, the variable percentage of institutional female directors on BDs (PERINSWDBD) offers a negative sign and is statistically significant at the 5% level, which allows us to accept the third hypothesis. Thus, these findings show that the percentage of female institutional directors on BDs will reduce the probability of paying dividends. In same vein, Kania and Bacon (2005) and Amidu and Abor (2006) found that institutional ownership was negatively associated with dividend payout. Moreover, as can be seen in Models 1 and 2, the other independent variables (PERIWDBD and PEREWDBD) present the expected sign, but they are not statistically significant.

With regards to the control variables, we can observe that investment opportunities (IO), manager ownership (OWNMANG), return on assets (ROA), firm size (FIRMSIZE) and board size (BDSIZE) present the expected signs and are statistically significant. Therefore, these results provide evidence that investment opportunities and management ownership are negatively associated with dividend payout, while those relating to a high return on assets, firm size and board size will increase the likelihood of paying dividends. Contrary to our expectations, the variables leverage (LEV) and return on equity (ROE) present a positive sign and are statistically significant at 1% and 10%, respectively. In line with these findings,

Chang and Rhee (1990), Maury and Pajuste (2002), Kania and Bacon (2005) and Kahn (2006) reported that there was a positive relationship between leverage and dividend payout. In relation to the positive relationship between return on equity (ROE) and the payment of dividends, Al -Kuwari (2012) and Ehsan *et al.* (2013) showed similar conclusions. Thus, we can conclude that there is a greater likelihood to pay dividends when the leverage and ROE increases. Finally, the variable ownership concentration is not statistically significant.

## **CONCLUSIONS**

Previous studies have examined the effect of gender diversity on BDs on dividend policy. Thus, this study provides insight into the relationship between gender diversity on BDs and dividend policies of firms listed on the Madrid Stock Exchange. Dividend policy is measured in three ways. In Model 1, the dependent variable is a dummy variable which takes the value 1 if the company pays dividends, and 0 otherwise; in Model 2, the dependent variable is the ratio between cash dividends on common stock and the market value of common stock of firms; and in Model 3, the dependent variable is the logarithm of the total amount of dividend payout per share in the accounting year. We hypothesized that the percentage of female directors on BDs, the percentage of independent, institutional and executive directors on BDs, and the shares held by female directors on BDs would affect dividend policy.

Our results demonstrate that the percentage of female directors on BDs positively influences dividend policy, as the percentage of women directors increases the probability of affecting the decision of paying dividends, the ratio between cash dividends and capitalization, and the payment of dividends per share in the accounting year. This finding is supported by Ye *et al.* (2010), who showed that the percentage of women directors on BDs increases dividend payout. The percentage of independent female directors on BDs has no impact on the

dividend policy analysed in the three models. The percentage of institutional female directors on BDs negatively impacts on dividend policy, since there is a negative association between institutional female directors and the decision of paying dividends, as well as the ratio between cash dividends and capitalization and the payment of dividends per share in the accounting year. This result suggests that institutional female directors on BDs prefer to pay lower dividends, thereby retaining and investing more of their earnings, resulting in agency costs being lower. These results support the relevant role of institutional directors on boards and the lack of influence of independent directors in European countries, as suggested in the literature (e.g. Vafeas, 2000; García-Osma and Gill de Albornoz, 2007; Lorca *et al.*, 2011; García-Meca and Sánchez-Ballesta, 2009). The lack of significance of independent female directors on BDs may be related to the measure of independence, particularly in communitarian studies, where there are many concerns that board members are not independent of those who nominate them. Other explanations could be the substitution effect between independent female and institutional female directors, or as Abdelasam *et al.* (2008) and Mansourinia *et al.* (2013) reported, because the presence of independent female directors on BDs cannot influence the dividend policy decisions of executive directors and managers.

The percentage of executive female directors on boards has no effect on the dividend payout. This result suggests that executive women directors have more firm-specific information, and that rather than paying dividends, prefer instead to have higher control of cash to invest in their firm's projects, leading to higher returns. This argument is supported by Jensen (1986) and Crifo and Forget (2013), who argue that managers in firms with excess cash flows have an incentive to waste organizational resources on personal ends, rather than pay out the excess cash to shareholders through dividends. The percentage of shares held by female directors on BDs has no effect on the decision of paying dividends or not, but it raises the ratio between cash dividends and capitalization and the amount of dividends paid by share in the accounting

year. The results suggest that shareholders whose rights are stronger can use their power to pressure managers to pay higher dividends (La Porta, *et al.*, 2000; Brockman and Unlu, 2009; Adjaoud and Ben-Amar, 2010).

The limitations of this study are as follows. Firstly, it is possible that there are unknown factors that could impact our dependent variables. While we have controlled for as many factors as possible based on theory and prior research, empirical and theoretical limitations prevent us from knowing whether all of the important influences have been controlled for and addressed. Finally, the study is based on the Madrid Stock Exchange for the period 2004–2012, so the results obtained should not to be extrapolated to other countries or periods.

This study could give rise to future lines of research. Firstly, it would add value to analyse the impact of gender diversity on BDs on the shares repurchased. Secondly, it would be interesting to examine the relationship between gender diversity on BDs and dividends tax advantages.

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**TABLE 1**  
**Variable Definition**

Variables	Description	Expected Sign
PERWDBD	Total number of women in BD/Total members of BD	+
PERIWDBD	Total number of independent women in BD/Total number of members of BD	+
PERINSWDBD	Total number of institutional women in BD/Total number of members of BD	+/-
PEREWDBD	Total number of insider women in BD/Total number of members of BD	-
OWNWOMBD	Percentage of shares held by women directors on BD	+
OWNCON	Percentage of shares held by shareholders holding at least 10% of the firm's stock	-
IO	Rate of assets growth	-
OWNMANG	Percentage of stocks owned by directors	-
LEV	Ratio of book value of debt over total assets	-
ROA	Ratio of earnings before interest and taxation (EBIT)/Total book assets	+
ROE	Ratio of net income/stockholder's equity	-
FIRMSIZE	Total assets (log)	+
BDSIZE	Total number of directors serving on board	+

**TABLE 2****Main Descriptive Statistics**

<b>a) Continuous Variables</b>						
<b>Variables</b>	<b>N</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Perc. 25</b>	<b>Perc. 50</b>	<b>Perc. 75</b>
DPY2	910	38,579	221,611	0,000	7,139	26,328
DPY3	910	5,777	5,408	0,000	7,653	10,831
PERWDBD	910	7,800	0,093	0,000	0,059	0,125
PERIWDBD	910	2,900	0,057	0,000	0,000	0,000
PERINSWDBD	910	3,800	0,071	0,000	0,000	0,071
PEREWDBD	910	0,800	0,033	0,000	0,000	0,000
OWNWOMBD	910	2,400	9,339	0,000	0,000	0,007
OWNCON	910	54,20	40,751	20,689	51,104	79,063
IO	910	20,90	1,293	-0,040	0,034	0,155
OWNMANG	910	26,80	26,664	1,384	18,535	49,932
LEV	910	60,20	1,209	0,349	0,562	0,713
ROA	910	-2,200	2,112	-0,009	0,032	0,084
ROE	910	-9,200	2,454	-0,001	0,084	0,185
FIRMSIZE	910	13,295	1,839	11,953	13,162	14,497
BDSIZE	910	10,778	3,755	8,000	10,000	13,000
<b>b) Dummies Variables</b>						
		<b>0</b>	<b>% (0)</b>	<b>1</b>	<b>% (1)</b>	
DPY1		397	44%	513	56%	

Mean, standard deviation and percentiles of the main variables. DPY2 is cash dividends on common stock divided by the market value of common stock of firms; DPY3 is the logarithm of the total amount of dividends paid per share in the accounting year; PERWDBD is the percentage of female directors on the BD; PERIWDBD is the percentage of independent female directors on the BD; PERINSWDBD is the percentage of institutional directors; PEREWDBD is the percentage of executive directors on the BD; OWNWOMBD is the percentage of shares held by female directors on the BD; OWNCON is the percentage of shares held by shareholders holding at least 10% of the firm's stock; IO is the rate of assets growth; OWNMANG is the percentage of stocks owned by directors; LEV is the ratio of book value of debt over total book assets; ROA is the ratio of earnings before interest and taxation (EBIT) over total book assets; ROE is the net income divided by stockholder's equity; FIRMSIZE is the natural logarithm of total assets; BDSIZE is calculated as the total number of directors on the board; DPY1 is equal to 1 if the company pays dividends, and 0 otherwise.

**TABLE 3**  
**Means Comparison Test. Model 1**

Variables	DPY1 (=1) (N=513) Mean	DPY1 (=0) (N=397) Mean	Mean Difference	Univariate Test (p. value)
PERWDBD	0,078	0,077	0,001	0,246 (0,806)
PERIWDBD	0,034	0,022	0,012	3,119*** (0,002)
PERINSWDBD	0,037	0,040	-0,003	-0,682 (0,495)
PEREWDBD	0,006	0,009	-0,003	-1,435 (0,152)
OWNWOMBD	2,760	2,047	0,713	1,143 (0,253)

DPY1 is equal to 1 if the company pays dividends, and 0 otherwise; PERWDBD is the percentage of female directors on the BD; PERIWDBD is the percentage of independent female directors on the BD; PERINSWDBD is the percentage of institutional directors; PEREWDBD is the percentage of executive directors on the BD; OOWNWOMBD is the percentage of shares held by female directors on the BD. Significant at \*\*\* for 99 percent confidence level, \*\* for 95 percent and \* for 90 percent.

**TABLE 4**  
**Means Comparison Test. Model 2**

Variables	DPY2 (>=7,14) (N=455) Mean	DPY2(<7,14) (N=455) Mean	Mean Difference	Univariate Test (p. value)
PERWDBD	0,080	0,075	0,005	0,915 (0,360)
PERIWDBD	0,035	0,022	0,013	0,3562*** (0,000)
PERINSWDBD	0,037	0,039	-0,002	-0,503 (0,615)
PEREWDBD	0,007	0,009	-0,002	-9,975 (0,330)
OWNWOMBD	2,956	1,942	1,014	1,639 (0,102)

DPY2 is cash dividends on common stock divided by the market value of common stock of firms; PERWDBD is the percentage of female directors on the BD; PERIWDBD is the percentage of independent female directors on the BD; PERINSWDBD is the percentage of institutional directors; PEREWDBD is the percentage of executive directors on the BD; OOWNWOMBD is the percentage of shares held by female directors on the BD. Significant at \*\*\* for 99 percent confidence level, \*\* for 95 percent and \* for 90 percent.

**TABLE 5**  
**Means Comparison Test. Model 3**

Variables	DPY3 ( $\geq 7,65$ ) (N=455) Mean	DPY3 ( $< 7,65$ ) (N=455) Mean	Mean Difference	Univariate Test (p. value)
PERWDBD	0,077	0,079	-0,002	-0,290 (0,772)
PERIWDBD	0,036	0,021	0,015	4,014*** (0,000)
PERINSWDBD	0,033	0,044	-0,011	-2,379** (0,018)
PEREWDBD	0,006	0,009	-0,003	-1,385 (0,166)
OWNWOMBD	2,668	2,230	0,438	0,709 (0,479)

DPY3 is the logarithm of the total amount of dividends paid per share in the accounting year; PERWDBD is the percentage of female directors on the BD; PERIWDBD is the percentage of independent female directors on the BD; PERINSWDBD is the percentage of institutional directors; PEREWDBD is the percentage of executive directors on the BD; OOWNWOMBD is the percentage of shares held by female directors on the BD. Significant at \*\*\* for 99 percent confidence level, \*\* for 95 percent and \* for 90 percent.

**TABLE 6**  
**Correlation Matrix**

	DPY1	DPY2	DPY3	PERWDBD	PERIWDBD	PERINSWDBD	PEREWDBD	OWNWOMBD	OWNCON	IO	OWNMANG	LEV	ROA	ROE	FIRMSIZE
DPY2	0,794***														
DPY3	0,782***	0,709***													
PERWDBD	-0,001	0,034	0,021												
PERIWDBD	0,091***	0,140***	0,173***	0,442***											
PERINSWDBD	-0,002	-0,01	-0,031	0,563***	-0,060*										
PEREWDBD	-0,033	-0,036	-0,093***	0,286***	-0,117***	0,058*									
OWNWOMBD	0,062*	0,061*	0,032	0,644***	0,113***	0,525***	0,289***								
OWNCON	-0,064*	-0,036	-0,023	0,069**	-0,095***	0,104***	0,170***	-0,019							
IO	0,218***	0,155***	0,176***	-0,061*	0,005	0,003	-0,049	0,002	0,003						
OWNMANG	-0,168***	0,192***	-0,269***	0,170***	-0,209***	0,248***	0,211***	0,307***	0,270***	-0,005					
LEV	-0,103***	-0,041	-0,002	-0,008	-0,087***	0,075**	0,003	0,052	0,165***	-0,015	0,157***				
ROA	0,568***	0,566***	0,523***	-0,052	0,109***	-0,066**	-0,041	-0,002	-0,067**	0,261***	-0,167***	-0,236***			
ROE	0,551***	0,566***	0,531***	-0,025	0,089***	-0,027	0,003	0,042	0,005	0,235***	-0,084**	0,059*	0,759***		
FIRMSIZE	0,329***	0,403***	0,528***	0,033	0,186***	0,013	-0,081**	-0,037	0,109***	0,151***	-0,258***	0,296***	0,092***	0,229***	
BDSIZE	0,298***	0,341***	0,402***	-0,037	0,119***	0,046	-0,16***	-0,011	-0,078**	0,126***	-0,178***	0,082**	0,108***	0,169***	0,614***

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**TABLE 7**  
**Results of the Regression for Women Directors on Board of Directors**

Variables	Expected Sign	Model 1	Model 2	Model 3
		DPY1	DPY2	DPY3
		Estimated coefficient (p-value)	Estimated coefficient (p-value)	Estimated coefficient (p-value)
PERWDBD	+	4,809*** (0,004)	6,788*** (0,008)	0,017** (0,023)
PERIWDBD	+	0,642 (0,748)	190,990 (0,282)	0,040 (0,303)
PERINSWDBD	+/-	-1,224** (0,048)	-7,589* (0,09)	-0,102** (0,022)
PEREWDBD	-	-1,324 (0,644)	-25,609 (0,923)	-0,034 (0,310)
OWNWOMBD	+	0,009 (0,392)	0,051** (0,020)	0,061* (0,083)
OWNCON	-	-0,003 (0,198)	0,360* (0,073)	0,001 (0,982)
IO	-	-0,289** (0,017)	-2,247 (0,696)	-0,109*** (0,000)
OWNMANG	-	-0,003 (0,400)	-0,330 (0,298)	-0,118*** (0,000)
LEV	-	-1,901*** (0,000)	1,907 (0,811)	0,072* (0,053)
ROA	+	0,894 (0,198)	2,126 (0,640)	0,066* (0,074)
ROE	-	1,219*** (0,000)	1,175 (0,240)	0,092*** (0,001)
FIRMSIZE	+	0,495*** (0,000)	-8,680 (0,100)	0,379*** (0,000)
BDSIZE	+	0,073** (0,017)	13,911*** (0,000)	0,099*** (0,007)
Firm Fix Effects		Included	Included	Included
Test Statistic		313'625***	2,296***	19,354***
Pseudo R2		39'10%	2,91%	29,80%

Estimated coefficients. In Model 1, the dependent variable is DPY1, which is a dummy variable equal to 1 if the company pays dividends and 0, otherwise; in Model 2, the dependent variable is DPY2, which is calculated as the ratio between cash dividends on common stock and the market value of common stock of firms; in Model 3, the dependent variable is DPY3, which is the logarithm of the total amount of dividend paid per share in the accounting year; PERWDBD is the percentage of female directors on the BD; PERIWDBD is the percentage of independent female directors on the BD; PERINSWDBD is the percentage of institutional directors; PEREWDBD is the percentage of executive directors on the BD; OOWNWOMBD is the percentage of shares held by female directors on the BD; OWNCON is the percentage of shares held by shareholders holding at least 10% of the firm's stock; IO is the rate of assets growth; OOWNMANG is the percentage of stocks owned by directors; LEV is the ratio of book value of debt over total book assets; ROA is the ratio of earnings before interest and taxation (EBIT) over total book assets; ROE is the net income divided by stockholder's equity; FIRMSIZE is the natural logarithm of total assets; BDSIZE is calculated as the total number of directors on the board. Significant at \*\*\* for 99 percent confidence level, \*\* for 95 percent and \* for 90 percent.