



Board gender diversity and dividend payout: The critical mass and the family ties effect[☆]

Emma García-Meca^a, Félix J. López-Iturriaga^{c,d,*}, Domingo Javier Santana-Martín^b

^a Technical University of Cartagena, School of Business, 30201 Cartagena, Murcia, Spain

^b University of Las Palmas de Gran Canaria, School of Business & Economics, 35017 Las Palmas de Gran Canaria, Spain

^c University of Valladolid, School of Business & Economics, 47011 Valladolid, Spain

^d Intangible-driven Economy Laboratory, National Research University Higher School of Economics, Perm, Russia

ARTICLE INFO

JEL codes:

G35

G34

Keywords:

Boards of directors

Dividend payout

Family firms

Female directors

Family ties

ABSTRACT

We analyse the relationship between female directors and payout policy for a sample of non-financial Spanish listed firms. Based on the critical mass theory, we find an inverted-U shaped relationship. For low levels of female representation in the board, women directors increase dividends in order to reduce agency conflicts, and improve reputation or legitimacy. However, after an inflection point, characteristics traditionally associated to women, such as risk aversion, a conservative and prudent financial attitude, and lower overconfidence emerge and reduce dividend payments. Moreover, our results suggest that female directors play a very different role with the controlling shareholder, depending on what family ties exist. Women directors who have family connections with the dominant shareholder exhibit the same inverted-U shaped relationship with dividends. In contrast, for female directors with no family ties, the relationship with dividends is U-shaped. Our results show the faultlines within the group of female directors depending on the relationship with the family owners, and that the influence of non-family female directors only arises when this group of women gain enough power, visibility, authority, and legitimacy.

1. Introduction

Recent research has expanded our knowledge on what role women play in corporate finance (Bui, Nguyen, Pham, & Phung, 2019; Nguyen, Ntim, & Malagila, 2020). Some literature suggests that board gender diversity increases innovation, stakeholder empathy, ethical behaviour and creativity (Chen, Leung, & Evans, 2018; Liu, Lei, & Buttner, 2020; Zalata, Tauringana, & Tingbani, 2018). However, the research is conflicting, with some papers arguing that gender stereotypes related to women's risk aversion and less overconfidence can lead to poorer female financial decisions, while other researchers note the lack of any difference between female and male behaviour when women reach high managerial positions (García Lara, García Osma, Mora, & Scapin, 2017; Sila, Gonzalez, & Hagedorff, 2016; Wellalage, Fernandez, & Thrikawala, 2020).

Despite the relevance of dividends, the research on what

consequences gender diversity has on payout policy is quite scant, embryonic, and to some extent, conflicting. Many studies support a positive relationship between the proportion of female directors and dividend payout, both at the national level and in worldwide analyses. There is evidence of this positive relationship for the US market (Benjamin & Biswas, 2019; Byoun, Chang, & Kim, 2016; Chen, Leung, & Goergen, 2017) as well as for countries such as Malaysia (Tahir, Rahman, & Masri, 2020), Nigeria (Idris, Ishak, & Hassan, 2019), Syria (Al-Rahahleh, 2017), China (Wellalage, Fauzi, Wang, & Basyith, 2014), and Spain (Pucheta-Martínez & Bel-Oms, 2015). Recently, Ye, Deng, Liu, Szewczyk, and Chen (2019) also found a positive influence of gender diversity on dividend payments in an international sample of 22 countries. In contrast, Sanan (2019), Saeed and Sameer (2017), and Mustafa, Saeed, Awais, and Aziz (2020) report a negative relationship in India, China, Russia, and some other Asian countries. Other papers observe little or no differences in the dividend distributions of female- and male-led

[☆] We thank two anonymous referees, Brian Lucey (editor) and Philip Jaggs for their comments on a previous version of the paper, and Pablo Cobreros for his help in data collection. We also thank the Spanish Ministry of Economics, Industry and Competitiveness (ECO2017-82259-R and ECO2017-84132-R) and the Spanish Ministry of Science and Innovation (PID2020-114797GB-I00) for financial support. All the remaining errors are solely the authors' responsibility.

* Corresponding author at: University of Valladolid, School of Business & Economics, 47011 Valladolid, Spain.

E-mail addresses: emma.garcia@upct.es (E. García-Meca), felix.lopez@uva.es (F.J. López-Iturriaga), javier.santana@ulpgc.es (D.J. Santana-Martín).

<https://doi.org/10.1016/j.irfa.2021.101973>

Received 17 February 2021; Received in revised form 14 August 2021; Accepted 5 November 2021

Available online 11 November 2021

1057-5219/© 2021 The Authors.

Published by Elsevier Inc.

This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

boardrooms (Eluyela et al., 2019; McGuinness, Lam, & Vieito, 2015). Furthermore, Gyapong, Ahmed, Ntim, and Nadeem (2019) and Benjamin and Biswas (2019) show that this association depends on ownership concentration and CEO duality.

This inconclusive evidence suggests that the relationship between female directors and dividend policy is more complex than initially thought and that it may differ significantly across firms. Related to this point, the critical mass theory suggests that adding one woman to the boardroom makes very little difference, and that only when reaching a high enough number (or proportion) of women on the board can female directors create a critical mass that is able to exert a substantial influence on board discussions (Joecks, Pull, & Vetter, 2013; Liu, Wei, & Xie, 2014; Shahab, Ntim, Ullah, Yugang, & Ye, 2020). Adding one woman to the board might, as suggested by Adams and Ferreira (2009), simply be considered a firm policy aimed at enhancing reputation, with female directors acting as mere tokens. Therefore, the relationship between dividends and female representation could deviate from a linear one, and more complex relationships might explain the heterogeneity in results and help to identify the point at which women prove influential.

The lack of conclusive evidence regarding board gender diversity and dividend policy also affects family firms. In these companies, the analysis is even more complex since women should not be analysed as a single homogeneous subgroup. There may be faultlines among family and non-family women directors because female directors with family ties share a common culture, common values and pattern of education (Herdhayinta, Lau, & Shen, 2021; Minichilli, Corbetta, & MacMillan, 2010; Veltrop, Hermes, Postma, & de Haan, 2015). Family female directors also have a strong emotional attachment to the firm that improves their level of commitment and involvement in the firm, which can affect their attitude to dividend payout because of their own particular incentives and interests.

In this context, we address two main research questions: (1) Does the influence of women directors differ at different levels of female presence? (2) Is there a different influence of women directors conditional on the existence of family ties with the dominant owner? Using a dataset of 131 non-financial Spanish listed firms between 2003 and 2017 we aim to fill these research gaps. Spain provides a unique setting to study these questions as there has been a dramatic increase in the presence of women on boards in recent years, since the latest Spanish corporate governance code recommended a female board gender quota of at least 30% (Cabeza-García, Fernández-Gago, & Nieto, 2018; CNMV, 2015). In addition, most listed firms have a family dominant owner. In turn, Spanish listed firms provide a unique field of study by combining public interest in increasing female representation on boards with concentrated corporate ownership and a high number of family firms.

Our results confirm the complexity of the link between dividend policy and board gender diversity: when the number of female directors is scarce there is a positive relationship. Nevertheless, this influence turns negative when the number of women reaches a critical mass. This finding challenges other studies that support a non-different behaviour of men and women in high leadership positions (Adams & Funk, 2012; Sila et al., 2016) and suggests that gender stereotypes or supposedly specific female characteristics (e.g., more risk aversion, conservative financial attitude, and natural inclination to retain excess cash) only arise when the significance of the group is high enough. The findings also confirm that the effectiveness of board gender diversity is conditional on levels of female representation. Thus, dividend payout and female diversity can be substitutive reputation providers and monitoring tools for reducing agency costs in the firm, confirming the results of La Porta, López de Silanes, Shleifer, and Vishny (2000) and Smith, Penathur, and Marciniak (2017) regarding the twofold relationship between corporate governance and dividend policy.

Our results also lend support to a different influence between family and non-family female directors on dividend payouts, with an inverted-U shaped and a U-shaped association, respectively. We show the existence of family faultlines among women directors and observe that these

faultlines do impact family firm dividend policy. Thus, when the presence of female family directors is low, these directors are less effective, and dividends become more necessary in order to reduce agency conflicts between the dominant family and external investors. However, we note that family women directors reduce dividend payouts when their number on the board exceeds a critical mass threshold. A risk averse and conservative attitude, together with the interaction of financial and socioemotional aims, thus seems to be prevalent for family women directors. Moreover, we also suggest that after a critical mass of females with family ties, there is a “halo effect” that can be compatible with some degree of family entrenchment. At this point, family female directors can typically pursue family objectives such as long-term survival and family reputation through risk avoidance and can reduce dividends as a way to retain more cash under family control and ensure liquidity in the event of possible future threats or opportunities.

However, non-family female directors have the opposite relationship with dividends, with an initially negative association that turns positive after a given point. This result indicates that when non-family women directors do not reach a critical mass, they are used by dominant family owners as tokens that allow them to obtain reputation and reduce dividends. However, when non-family female directors reach a critical mass, they gain power, authority and legitimacy, which may lead them to make decisions that reduce agency conflicts and disgorge firm resources from family control. The results can be understood as a confirmation of the critical mass theory, such that the independent role of these female directors can only be developed once a high enough proportion of non-family tied women is achieved. Therefore, for low levels of female representation the results suggest that appointing non-family women can be used as a token to signal socially responsible behaviour while reducing dividends.

Our research offers two contributions to the existing literature. First, given that most previous studies are based on the agency theory, dividend policy is supposed to be both a mechanism for alleviating conflicts inside firms as well as a signal of reputation. We extend the theoretical foundations of the relationship between female representation and dividends with the critical-mass arguments by testing for a non-linear relationship. This deviates from existing studies that support a linear positive or a negative association. We thus contribute to this literature by showing that the influence of female directors can vary depending on the level of board diversity and on their strength in the boardroom. Second, most previous literature on gender diversity is based on widely held corporations, excluding the companies characterized by high ownership concentration and a strong family presence. Our results confirm a different pattern of the link between dividends and female directors depending on the existence of family ties, showing not only the different incentives of each of these two groups, but also the different impact on dividend policies depending on the group's visibility and power.

2. Background and hypotheses development

According to the agency theory, in disperse ownership contexts, dividends act as a mechanism to mitigate agency conflicts between managers and shareholders. By paying dividends, managers return corporate earnings to shareholders and reduce free cash flows which might be used to extract private benefits. Dividends enable capital market discipline and force managers to come to the financial markets in order to raise funds from external investors. Similarly, in countries where there is concentrated ownership, poor investor protection, and weak governance, dividends can also be a tool to mitigate agency problems between large and minority shareholders. Dividends could help the dominant owner to establish a good reputation to raise external funds in the future, such that dividends are a substitute for legal protection.

Previous research has provided theoretical rationale and empirical support both for a positive and a negative relationship between female

directors and dividend payout. From an agency theory approach, the board of directors can affect the firm's payout policy throughout the monitoring role (Farinha, 2003; Hu & Kumar, 2004). In this framework, female directors can impact board performance by reducing agency costs and by offering greater protection to minority shareholders through tougher oversight (the so-called watchdog role). Adams and Ferreira (2009) support this monitoring role by noting that female directors have higher attendance records and are more likely to belong to monitoring committees than their male counterparts. In addition, increasing gender diversity in boards of directors can improve boards' ability to exercise their control and strategic roles since it reduces the likelihood of rubber-stamping management decisions, expands the pool of knowledge used to make group decisions, and accelerates innovation and creativity (Basco & Voordeckers, 2015; Tuggle, Schnatterly, & Johnson, 2010). In line with the above arguments, Pucheta-Martínez and Bel-Oms (2015), McGuinness et al. (2015), and Byoun et al. (2016) show that the impact of board diversity on dividend policy is stronger for firms with potentially greater agency problems of free cash flow, suggesting that a diverse board mitigates the conflicts between corporate insiders and external investors.

The gender socialization theory, based on sociological, cognitive, and psychological perspectives, also highlights the innate differences between men and women that can explain the different behaviour of female directors. Although these characteristics are not universal in individuals, women are often considered to be more sympathetic, more receptive, more caring and more cooperative (Kim, Roden, & Cox, 2013). The female style of leadership is more interactive and participative than the male one, which can improve a board's ability to deal with ambiguity and uncertainty (Bettinelli, Del Bosco, & Giachino, 2019). Female characteristics associated with their benevolence, universalism, inclination to comply with rules and laws, ethical behaviour or empathy make their leadership more social and more stakeholder oriented (Malik, Nowland, & Buckby, 2021; Sun, Dutta, Zhu, & Ren, 2021). Since these characteristics might make women directors pay more attention to stakeholder demands, one would expect gender diverse boards to be more sensitive to the dividend payment requests of minority shareholders. In sum, as women directors are considered by the above perspectives and theories to be tougher monitors, providers of legitimacy, signalling tools, as well as more sensitive to all stakeholders' needs, there are rationales to expect a non-negligible female influence on dividends, suggesting a positive effect of board gender diversity on the payout ratio.

Nevertheless, these same approaches can also explain a negative relationship between female representation and dividend policy. If, according to the agency theory, female directors are tougher monitors and drivers of corporate governance effectiveness, then women who sit on boards might act as a substitutive mechanism, an alternative to dividend payout. Thus, dividends could be used less as a monitoring tool given the better protection of all shareholders' interests offered by female directors (La Porta et al., 2000). Accordingly, managers and dominant owners can incentivize socially responsible actions, in other words, appointing women directors, and can create a "halo effect" that promotes their own reputation, increases their entrenchment and deviates attention away from agency conflicts with other external or internal agents, such as minority shareholders (Barnea & Rubini, 2010; Borghesi, Houston, & Naranjo, 2014). In turn, gender diversity can be also a substitutive tool for reputation and dividend payout.

The gender socialization theory also suggests a negative influence of female directors on dividend payments based on the differences in risk aversion between men and women. Women are generally considered more risk averse and conservative in their financial decisions than men (Faccio, Marchica, & Mura, 2016; Palvia, Vähämaa, & Vähämaa, 2015, 2020). Previous research shows that women tend to invest less in high-risk assets and follow less extreme investment strategies (Niessen & Ruenzi, 2007). This greater female risk aversion is confirmed by studies showing the positive relationship between female involvement and firm

cash holding (Adhikari, 2018; Zeng & Wang, 2015). According to this view, female-led firms could be more likely to retain cash holdings in order to face future uncertainty, and therefore reduce dividend payments. Saeed and Sameer (2017) show a negative relationship between board gender diversity and dividend payments in emerging countries, suggesting that women bring new and better investment opportunities for firms and that they tend to preserve internal funds for investments.

The above discussion suggests that the relationship between female directors and dividend policy is more complex than was at first thought, with different arguments supporting both a positive and a negative influence. At this point, we posit that this association might also depend on the number of women directors on boards, a possibility not previously studied. Indeed, the mixed findings in gender diversity literature and firm performance could be explained by a failure to consider the critical mass theory (Amorelli & García-Sánchez, 2020; Joecks et al., 2013). In light of this theory, the influence of female representation is not linear but conditional on the level of such representation. A non-linear relationship might avoid the inconsistencies found in previous research and help to identify the point at which female involvement proves optimal for the firm. Following this approach, only when there is a high enough number of women on the board can female directors create a critical mass that is able to significantly influence board discussions. Since boards have traditionally been a homogeneous group of (male) directors with similar attributes and views, adding one woman would not make a difference because a small number of women in a male dominated board might be ineffective, with it being necessary to have a critical mass of women.

The critical mass theory has been empirically tested by Joecks et al. (2013), who found a U-shaped relationship between gender diversity and firm performance, such that female directors at first negatively affect firm performance, and are associated with superior firm performance only after reaching a given threshold. Consistent with this theoretical framework, we posit that female directors' incentives and behaviour may vary, depending on the level of board gender diversity, such that the relationship between gender diversity and dividends may be non-linear. Thus, when the level of board gender diversity is low, women may act as tokens, that enjoy lower status, prestige and influence compared to members of the numerical majority. Recent research suggests that women's ability to implement their strategic firm vision may be limited by their tokenism role within a corporate hierarchy (Glass & Cook, 2016) and that their ability to drive corporate practices is limited not only by their structural position but also by their low-status numerical minorities (Ingersoll, Glass, Cook, & Olsen, 2019). The distinguishing female cognitive and socio-psychological characteristics that make their decisions different from men may have trouble surfacing when there are few women on the board.

Consequently, below a critical threshold, having a minority of women on a board means that they have to deal with masculine norms and male-dominated decision making on a day-to-day basis, which can reduce or even wipe out the impact of gender differences in financial policies. According to previous literature on critical mass, these under-represented women become "out-group" board members who usually keep a low profile and avoid sharing their views and ideas (Saggese, Sarto, & Viganò, 2021). Therefore, at this point female directors can act as mere tokens and have no influence to modify accepted behaviour or decisions because of their scarce visibility, power, authority and legitimacy. Moreover, women directors as a minority group may not follow expected gender behaviour but, in contrast, replicate male patterns in order to be accepted in a male-dominated culture. Derks, Van Laar, and Ellemers (2016) argue that women in firms in which most executive positions are held by men may imitate rather than change the existing gender hierarchy (the queen bee phenomenon) and, rather than adding diversity, may adjust their self-presentation to fit the masculine organization culture. In terms of dividend policy, when the number of female directors is below this critical mass, female directors may replicate their masculine-counterparts' view.

However, after a given threshold of gender diversity, the influence of women directors can be more effective. Risk aversion, a conservative and prudent financial attitude and lower female overconfidence only emerge and impact the firm's dividend policy when female voices can be heard (which occurs above the critical mass point). At this point, a high enough proportion of women on boards could act as a substitutive mechanism of dividends to reduce agency conflicts. Thus, dividends could be used less as an effective monitoring tool given the better protection of shareholders' interests offered by female directors. Additionally, women directors could be a substitutive company tool for reputation, decreasing dividend payout as long as the number of female directors increases. This differentiated relationship between women and payout depending on their visibility and legitimacy in the board can explain the heterogeneity and equivocal results found in previous literature, which has analysed the role of women without examining the relevance of critical mass (Mustafa et al., 2020; Sanan, 2019; Wellalagea et al., 2014). Therefore, we propose the following hypothesis:

H1. There is a non-linear relationship between female directors and firm payout.

Together with all of the aforementioned arguments, recent literature suggests that women are not a homogeneous group and that the differences among them in terms of family ties must be considered. This entails the need to explore certain social-contextual factors that might offer a greater understanding of the mechanisms that account for female leadership in firms (Chadwick & Dawson, 2018; Hoobler, Masterson, Nkomo, & Michel, 2018; Poletti-Hughes & Briano-Turrent, 2019). One such contextual frame is corporate ownership and, more specifically, the family nature of the firm. Family firms provide a particularly interesting field for examining what role women play in dividend policy, since dividends in family firms are considered a relevant mechanism to overcome agency conflicts between family controlling and outside shareholders (Pindado, Requejo, & Torre, C. d. l., 2012). There is also a greater female presence in family firms than in non-family firms, as shown by Ernst and Young (2015), who note that women are represented in 55% of family firms, and that 70% of family businesses are considering a woman for their next CEO.

Despite this favourable environment for women in family firms and their rapid incorporation into leadership roles, previous literature reports that women with family ties have often played a less active role (Danes & Olson, 2003; Martínez Jimenez, 2009). Research also shows that these women usually have limited leadership roles and less visibility due to their supposedly more emotional behaviour (Chadwick & Dawson, 2018). The few studies that have examined the impact of female directors with family ties often ignore that their incentives are not the same as those of other independent directors. Here, the socioemotional approach provided by the socioemotional wealth (SEW) theory is essential vis-à-vis understanding the effect of family ties on female directors and their specific incentives and behaviour.

Female directors with family ties can be characterized as a subgroup who share a common culture, business values, and socioemotional goals (Cruz, Gómez-Mejía, & Becerra, 2010; Sharma, Chrisman, & Chua, 2003). When compared to non-family counterparts, female directors in family firms engage in more non-financial aspects such as maintaining family control and pursuing long-term objectives, supporting trans-generational succession, and family reputation (Berrone, Cruz, & Gómez-Mejía, 2012; Chua, Chrisman, Kellermanns, & Wu, 2011). Indeed, their nomination may also be related to specific reasons such as providing job security to family members, preserving family control or ensuring family succession (Herdhayinta et al., 2021). As most of these females have been brought up to work and participate actively in the firm since childhood, they share common values and have strong incentives to pass on their business to future generations, together with a long-term involvement and interest in protecting the family reputation and avoiding conflicts between the relatives who work together in the firm. These attitudes can favour a positive influence of family female

directors on dividend payouts and have been empirically proved by Isakov and Weisskopf (2015), who show that the higher payout given by family firms benefits all shareholders, but is driven by the family income hypothesis due to the considerable amount of family wealth invested in the firm.

However, we also posit that the risk averse, conservative and prudent financial attitude of family women can emerge and impact the firm's dividend policy. Thus, we suggest that after a critical mass of females who have family ties, there is a "halo effect" which may prove compatible with a certain degree of family entrenchment. At this point, family female directors may typically pursue family objectives such as long-term survival and family reputation through risk avoidance, and may reduce dividends as a way to keep more cash under family control, protecting SEW endowment and ensuring liquidity in the event of future possible threats or opportunities.

Family ties may lead to diverging viewpoints and interests among family and non-family female directors since socioemotional goals may not be shared by the non-family female directors, who are more objective and independent, and possess a common feeling of non-inclusion (Herdhayinta et al., 2021; Vandebek, Voordeckers, Lambrechts, & Huybrechts, 2016). Women without family ties are generally appointed through a competitive selection process, not based on nepotism or family quotas, which makes them more effective in terms of alleviating agency problems and not as inclined to prioritize SEW family aims (González, Guzmán, Pablo, & Trujillo, 2020). In turn, a greater presence of non-family female directors may raise the focus on financial rather than on socioemotional goals, thereby increasing the concern about the needs of all stakeholders, including minority shareholders by raising dividends. This view is supported by Herdhayinta et al. (2021), who find that non-family female directors have a more positive effect on firm value and dividend payout than family female directors.

The critical mass theory also applies to this issue, such that the influence of non-family female directors on payout decisions can depend on their visibility and power in the board. Since the different skills and motivations that these female directors bring to the board can only be reached after a certain threshold, we hypothesize a non-linear association between non-family women and dividends. We suggest that when the number of non-family women directors is low, they may find it difficult to play their role of independent monitors of the controlling family because they require a critical mass in order to work as effective monitors, and even to legitimize their presence on the board. According to Vandebek et al. (2016), women in family firms face some obstacles related to their invisibility and glass ceiling problems. In turn, when these women have no family ties these obstacles are even greater, and it is only when they form a significant subgroup that they are able to be effective influencers.

In the context of social pressure and high regulation for increasing board gender diversity, adding one non-family woman to the board might, as suggested by Adams and Ferreira (2009), simply be considered a firm policy aimed at enhancing reputation and legitimacy, with these women independent directors acting as mere tokens and finding it difficult to play a role not only as women but also as non-family members. Their minority position prevents them from making a substantial contribution to corporate decisions because they belong to the board "out-group" (Saggese et al., 2021). However, once the inflection point is achieved, the influence of non-family female directors increases, and these women may exert more pressure to curtail family expropriation conflicts, which means keeping resources out of family shareholder control and instead serving the whole organization. Again, and following the critical mass theory, we suggest that only when the group of non-family female directors is big enough in the board, can they gain the required power, visibility, authority, and legitimacy needed to reduce agency conflicts and keep the firm's resources away from the exclusive control of the family. We thus posit that not only family ties but also board visibility and power may lead to diverging viewpoints and incentives between family and non-family female directors. In line

with this, we posit the following two hypotheses:

H2a. There is a non-linear relationship between family female directors and firm payout.

H2b. There is a different behaviour between family and non-family female directors with respect to firm payout.

3. Empirical design

3.1. Sample and variables

We examine a sample of 131 non-financial Spanish listed firms between 2003 and 2017. During that period the average number of non-financial firms listed in the Spanish capital markets was less than 150 firms, such that our sample is highly representative of the total population of Spanish listed firms. The combination of cross-section data with time series provides an unbalanced sample of 1464 firm-year observations, with 84.9% of the firms having six or more observations during the period 2003–2017. This sample accounted for 98.1% of Spanish market capitalization in 2017. Data on financial statements, dividends and other firm characteristics were taken from the Spanish Stock Exchange Commission (CNMV, *Comisión Nacional del Mercado de Valores*).

We hand-collected information about the presence of women in the board of directors using various sources. We examine board composition using the Annual Corporate Governance Reports published by the Spanish Security Exchange Commission. After identifying a woman as a director, we analysed her family relationship with the dominant family owner through family names, from the firms' websites and media, or by contacting the firms. If we identified a direct family relationship, or one acquired through marriage, we classified the women as family tied, and otherwise as non-family related. In our sample, the controlling family maintained company control for 90% of the fifteen years analysed, with 99% of these firms having family members on the board.

Our dependent variable (PAYOUT) is the dividend payout ratio, measured as the ratio of total dividends to net income before extraordinary items. Our results are robust to alternative measures of dividend payout such as dividends over total assets, dividends to sales, and whether or not the firm pays dividends. Following the extant literature, board gender diversity (WOMEN) is defined as the number of women directors on the board divided by the total number of board members (Byoun et al., 2016; Chen et al., 2017; Pucheta-Martínez & Bel-Oms, 2015; Saeed & Sameer, 2017; Sila et al., 2016).

Data on family firms come from Bona-Sánchez, Pérez-Alemán, and Santana-Martín (2019), who identify the dominant or ultimate owner of Spanish listed companies, applying the control chain method. According to the control chain method, a firm is considered as a family firm when two conditions are jointly met: first, the principal owner must hold, either directly or indirectly, no less than 20% of voting rights, and second, this dominant owner must be an individual or a family.

When identifying a woman as a director, we analyse her family relationship with the dominant family owner through family names, from the firms' websites and media, or by directly contacting the firm. If we identified a family relationship either by blood or as an in-law, we then classified the woman as a family member, and as non-family otherwise.¹ We then define FAM_WD and NONFAM_WD as the number of family and non-family female directors on the board of family firms divided by the total number of board members.

We control for a number of firm characteristics that might affect dividend policy: firm size, profitability, financial leverage, board size, and growth opportunities (Bilinski & Lyssimachou, 2018; Brawn & Šević, 2018; Harakeh, Lee, & Walker, 2019). Firm size (SIZE) is the log

¹ Latin countries have two advantages that make it easy to identify family relationships. First, there are two surnames, the first being the father's and the second the mother's. Second, married women keep their maiden names.

of total assets, profitability (ROA) is measured through the return on assets, i.e., the EBITDA to total assets ratio, the size of the board (BOASIZE) is the log of the number of directors, growth opportunities (GROWTH) is the equity market-to-book ratio, financial leverage (LEV) is the ratio of total liabilities to total assets. Given the relevance of ownership structure on payout policy, we use the control chain method to calculate voting rights (VOTING) in the hands of the ultimate or dominant owner. Variables were winsorized at the 1st and 99th percentiles in order to reduce the impact of potential outliers, except for the dummy variables.

All the regressions include a set of dummy variables to control for industry (ρ_i) and time fixed effects (μ_t).

Our model is as follows:

$$PAYOUT_{it} = \alpha_1 + \beta_1 WOMEN_{it} + \beta_2 VOTING_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \beta_5 GROWTH_{it} + \beta_6 LEV_{it} + \beta_7 BOASIZE_{it} + \rho_i + \mu_t + \varepsilon_{it} \quad (1)$$

3.2. Method

Since we have a panel data set, we initially run two panel data techniques (Arellano & Bover, 1995; Blundell & Bond, 1998): the fixed effects method and the generalized method of moments (GMM). The fixed effects method introduces firm-level fixed effects to correct for the constant unobservable heterogeneity that may be present in the gender diversity-dividends relationship. In addition, the presence of women directors might be endogenous since demands for greater gender diversity on the board may be affected by claims for dividends, which raises a concern about possible endogeneity (Chen et al., 2017). The GMM procedure, based on the panel data methodology, allows us to address unobserved constant heterogeneity, potential endogeneity² concerns, and reverse causality (Pindado, Requejo, & de la Torre, 2014). Although these two approaches reduce possible problems associated with endogeneity in the gender diversity-payout relationship, we also address this issue using two other estimation models: an instrumental variable approach and the propensity score matching procedure. The propensity score matching procedure is an alternative method to control for differences in the specific characteristics of the firms with female directors and to address endogeneity triggered by potential selection bias (Heckman, Ichimura, & Todd, 1998; Karpavičius & Yu, 2018; Nekhili, Nagati, Chtioui, & Nekhili, 2017). This technique requires the selection of two comparable sub-samples: a set of firms without female directors and a counterpart set of firms with women directors. The candidate firm for matching should be from the same industry and year as the firm with women directors. From among the candidate firms we then select the optimal match (i.e., a firm without female directors) based on the nearest neighbour technique. To estimate the propensity score, a comprehensive set of firm characteristics that capture the likelihood of a given firm having women directors should be employed.

4. Results

4.1. Descriptive analysis

The proportion of firms with at least one female director is shown in Table 1 (Panel A). There was an increase in gender diversity during the period 2003–2017: while only 27.71% of firms had at least one female director in 2003, by 2017 the percentage had risen to 80.58%. However, the percentage of female directors did not rise at such a fast pace but increased steadily from 12.28% of all directors in 2003 to 20.43% in 2017. In line with Sacristán-Navarro and Gómez-Ansón (2007), around half of the firms in the sample are family firms. Our data show a steady

² In line with Wooldridge (2010), we broadly define endogeneity bias as any situation where the disturbance term of the structural equation is correlated with one or more independent variables.

Table 1

Descriptive statistics and correlation matrix.

Panel A. Descriptive statistics (%)															
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
At least one woman (%)	27.71	27.38	31.46	46.39	49.54	55.05	58.49	64.08	66.00	63.27	65.59	68.13	75.51	80.20	80.58
WOMEN	12.28	13.67	13.35	14.06	14.44	14.34	14.61	14.70	14.93	16.40	17.21	17.90	17.40	18.03	20.43
Family Firms	42.17	42.86	46.07	48.45	53.21	53.21	53.77	54.37	54	52.04	52.69	52.75	51.02	51.49	51.46
FAM_WD	6.12	7.25	8.01	7.08	7.52	6.34	5.85	5.66	5.56	5.91	6.16	5.70	4.57	4.86	4.95
NONFAM_WD	6.15	6.41	5.33	6.98	6.91	8.00	8.57	8.87	9.20	10.30	10.86	12.17	12.88	13.19	15.40
	Mean	Median	Std. Dev	1st Q	3rd Q	4th Q									
PAYOUT	0.29	0.15	2.44	0.00	0.45	4.34									
WOMEN	16.15	13.33	8.74	10.00	22.22	40.00									
ROA	0.05	0.05	0.10	0.02	0.09	0.48									
BOARDSIZE	2.30	2.30	0.34	2.07	2.56	2.99									
VOTING	31.93	25.08	21.24	14.93	49.69	91.14									
GROWTH	2.80	1.72	4.32	0.99	3.03	31.44									
LEV	0.64	0.64	0.23	0.49	0.77	0.99									
SIZE	13.86	13.68	1.95	12.39	15.12	18.42									

Panel B. Correlation matrix									
	Payout	Women_Directors	ROA	Boardsize	Voting	Growth	Lev	VIF	
WOMEN	-0.04*								1.04
ROA	0.05**	-0.01							1.54
BOARDSIZE	0.02	-0.03	0.12***						1.87
VOTING	-0.02	0.12***	0.03	-0.17***					1.08
GROWTH	0.02	-0.05**	0.26***	-0.03	0.07***				1.42
LEV	-0.04	0.01	-0.28***	0.03	0.05**	0.03			1.21
SIZE	0.009	0.09***	0.10***	0.64***	0.01	-0.02	0.17***		1.93

Panel C. Gender diverse boards versus non diverse boards							
	Gender diverse boards (N = 850)			Non-gender diverse boards (N = 614)			T-Test
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	
PAYOUT	0.31	0.13	2.85	0.27	0.17	1.73	0.28
ROA	0.05	0.05	0.09	0.05	0.05	0.11	0.31
BOARDSIZE	2.34	2.39	0.33	2.24	2.30	0.35	5.77***
VOTING	32.99	26.24	21.21	30.45	23.93	21.21	2.26**
GROWTH	2.59	1.70	3.45	3.10	1.75	5.28	-2.22**
LEV	0.64	0.64	0.23	0.64	0.63	0.22	-0.16
SIZE	14.15	14.07	2.02	13.47	13.23	1.78	6.67***

representation of female family directors, around 5% of seats, while the percentage of female non-family directors increases from 6% to 15% between 2003 and 2017. These numbers can be compared with those of similar prior research: Saggese et al. (2021) report a mean (median) of 11% (9.1%) female directors in a sample of private medium-sized and large Italian high-tech firms during the period 2012–2015. González et al. (2020) report a figure of 17.5% female directors in Colombia, of whom 43.2% are family-female directors. Gyapong, Ahmed, Ntim, and Nadeem (2021) report an average 8.9% in Australia between 2009 and 2014. Trinh, Cao, Dinh, and Nguyen (2021) report a mean (median) of 16.8% (16.7%) among FTSE 100 firms between 2006 and 2011. Ye et al. (2019) report an 8.3% average for an international sample from 22 countries from 2000 to 2013, and Chen et al. (2017) report 10.3% among S&P 1500 constituents between 1997 and 2011. Taken together, these numbers underline the relevance of female directors in the Spanish context.

Panel A of Table 1 also reports some descriptive statistics of the main variables. Mean payout in the sample is 0.29 and, on average, women account for 16.15% of all directors. It should be noted that the average log of board size is 2.3, which means an average board size of 9.97 directors.

Panel B displays the Pearson correlation matrix among the variables. There is a significant (although low) negative correlation between PAYOUT and WOMEN, which might suggest an initially negative relationship between dividend policy and female directors. The absence of high correlations between the explanatory and the control variables suggests that multicollinearity is not an issue that might bias our results,

which is confirmed by the low values of the vector inflation factor (VIF) in the right-hand side column.

In panel C of Table 1, we report the test of means comparison between firms with gender diverse and non-diverse boards. Results indicate there are no statistically significant differences in payout policy, profitability, and leverage. The data suggest that firms with gender diverse boards have larger boards, a more concentrated ownership structure, are bigger in size, and have fewer investment opportunities. These multifaceted results suggest that the relationship between gender diversity and dividend policy seems to be more complex than initially anticipated, and calls for further analysis.

4.2. Baseline results

Model 1 (fixed-effects) and model 2 (GMM) in Table 2 show the results of the basic relationship between gender diversity and dividend policy. Both regressions evidence an inverted U-shaped association. These results are consistent with H1. The estimates show that, at low levels of women directors, there is a positive relationship with payout. This is consistent with using dividends to reduce agency conflicts, increase reputation or legitimacy, or take riskier corporate decisions. However, there is an inflection point³ after which the negative effect of the percentage of women directors prevails. After this point, a higher

³ The inflection point is between 12% and 13% of female directors, not far from our median value.

Table 2
Fixed effects and GMM estimates.

	Model 1	Model 2
	Fixed effects	GMM
WOMEN	0.765*** (4.30)	0.192*** (4.65)
WOMEN ²	-0.031** (-5.83)	-0.007*** (-6.21)
ROA	0.014* (1.94)	0.725*** (3.97)
GROWTH	-0.001 (-0.90)	-0.001** (-2.41)
LEV	-0.09* (-1.94)	-0.512*** (-3.87)
SIZE	0.039 (0.65)	0.058** (2.45)
VOTING	0.003* (1.99)	0.005 (0.90)
BOARDSIZE	0.297* (1.95)	0.569*** (6.66)
Intercept	1.530* (1.87)	3.025*** (4.40)
m ₂		-0.97
Z1		16.97***
Z2		27.65***
Z3		28.46***
Hansen test		87.07
F test	10.31***	395.58***
U test	4.30***	4.65***
Adj. R ²	0.37	
No. of observations	1464	1464

This table reports the estimated coefficients (t-statistics based on robust standard error). The dependent variable is PAYOUT (total dividends to net income). WOMEN is the proportion of female directors, ROA is return on assets, GROWTH is growth opportunities, LEV is financial leverage, SIZE is firm size, VOTING is the proportion of voting rights of the ultimate shareholder, and BOARDSIZE is the size of the board. Model 1 includes industry and time dummy variables, and Model 2 includes time dummy variables. Hansen is a test of over-identifying restrictions under the null hypothesis that all instruments are uncorrelated with the disturbance process. m₂ is the statistical test for the lack of second-order serial correlation in the first-difference residual. z₁ is the Wald test of the joint significance of the reported coefficients. z₂ is the Wald test of the joint significance of time dummies. z₃ is the Wald test of the joint significance of industry dummies. F is the test of the joint significance of all the coefficients. U is the test of the nonlinear effect of female directors. ***, **, *; statistically significant at 1, 5 and 10%, respectively.

proportion of female directors implies a decrease in payout policy.

Thus, a non-linear function emerges as a more precise relationship between dividends and female directors and may reconcile previously conflicting results. For instance, Pucheta-Martínez and Bel-Oms (2015) report a positive relationship between female directors and dividend payout in Spanish firms. Nevertheless, in three quarters of their observations the proportion of women directors is below 12.5%, i.e., most of their observations are in the positive-slope part of our non-linear function. Yet, contrary to our research, these authors fail to test the relationship for high levels of female directors. Similarly, Byoun et al. (2016) report a positive relationship for American firms, although their average ratio of female directors is 8.88%, some way below our turning point. Furthermore, the negative relationship found by Saeed and Sameer (2017), which had thus far failed to match the findings reported in previous research, is consistent with the downwards-slope found in our results.

As regards the control variables, the firm's performance, size, and number of directors have a positive relationship with dividends. These results mean that dividend payers are larger and more profitable (Brav, Graham, Harvey, & Michaely, 2005). In contrast, financial leverage and growth opportunities have a negative relationship with dividend policy. These latest results may be due to the financial needs of the fastest growing firms and to the substitute disciplinary role of financial leverage.

We test the robustness of our results with two other estimation models: an instrumental variable approach and through the propensity score matching procedure. In Table 3, we employ the instrumental variable approach to obtain the exogenous element from gender diversity (Conyon & He, 2017). In line with Lang and Lockhart (1990), Pearce and Zahra (1992) and Waldman, Ramirez, House, and Puranam (2001), we use UNCERTAINTY as an instrument for gender diversity

Table 3
Instrumental variable estimates.

Panel A. First -stage regressions		Model 3
Dependent variable		WOMEN
UNCERTAINTY		0.163*** (8.66)
F test		10.05***
Adj. R ²		0.152
No. of observations		1464
Panel B. Second-stage regressions		PAYOUT
Dependent variable		
WOMEN		0.196*** (2.60)
WOMEN ²		-0.008*** (-2.41)
ROA		0.180*** (2.80)
GROWTH		-0.002*** (11.9)
LEV		-0.009** (-2.36)
SIZE		0.002*** (3.66)
VOTING		0.001*** (3.35)
BOARDSIZE		0.013*** (3.82)
Intercept		-0.004 (-0.55)
F test		110.20***
U test		2.12**
Adj. R ²		0.37
No. of observations		1464

Estimated coefficients (t-statistics based on robust standard error). The dependent variable is PAYOUT (total dividends to net income). WOMEN is the proportion of female directors, UNCERTAINTY is an index of economic policy uncertainty, ROA is return on assets, GROWTH is growth opportunities, LEV is financial leverage, SIZE is firm size, VOTING is the proportion of voting rights of the ultimate shareholder and BOARDSIZE is the size of the board. All the regressions include industry and time dummy variables. F is the test of the joint significance of all the coefficients. U is the test of the nonlinear effect of female directors. ***, **, *; statistically significant at 1, 5 and 10%, respectively.

since firms react to uncertainty by designing diverse boards, which enhances adaptation to a risky environment. This variable is based on the economic policy uncertainty index (BBD index) created by Baker, Bloom, and Davis (2016) and refined for Spain by Ghirelli, Pérez, and Urtasun (2019). This index is a measure of uncertainty related to future economic policy and regulatory outcomes. Specifically, the index is built as a weighted mean of three components. The first and most relevant component includes media references to policy uncertainty. The second factor measures uncertainty about future changes in tax code provisions. The third component is based on the disagreement between the consumer price index and government spending to proxy uncertainty about fiscal and monetary policy. Thus, we define UNCERTAINTY as the quarterly average of the BBD index in year t. Panel A of Table 3 shows the results of the first-stage regression, where the dependent variable is the percentage of women (Model 3). For brevity, we only report the estimates for the principal variable. As can be seen, uncertainty positively affects the presence of women on boards. Panel B of Table 3 shows the second-stage regressions. The results corroborate those reported in Table 2: there is an inverted U-shaped relationship between the proportion of female directors and dividend payout, with an inflection point being reached at around 11% of women directors.

We now run the analysis through the propensity score matching procedure. To estimate the propensity score, we use a number of firm characteristics that are supposed to capture the likelihood of a given firm having female directors. We use VOTING to introduce the power of the dominant owner to design board composition (Campopiano, De Massis, & Chirico, 2014; Delmas & Gergaud, 2014; Dou, Zhang, & Su, 2014), GROWTH to control for the possible relationship between corporate performance and female directors (Farrell & Hersch, 2005), SIZE due to the greater propensity of large firms to hire female directors (Peterson & Philpot, 2007; Terjesen, Sealy, & Singh, 2009), and DEBT since Gillan & Starks (2000) argue that institutional investors may drive

firms toward greater diversity. The fact that the CEO can simultaneously play the role of board chairman might also influence the composition and effectiveness of the board (Bear, Rahman, & Post, 2010). Thus, we also include the variable PRESI_DUAL, which equals 1 when the same person has both jobs.

In Table 4, we report the results of the propensity score matching procedure. As can be seen, results are fully consistent with those presented in Tables 2 and 3: there is a non-linear relationship between the proportion of female directors and dividend payout, with an initially positive effect that turns negative after an inflection point (around 12%–13% of female directors). Company profitability increases dividends, and leverage plays a substitutive role as a mechanism of managerial discipline.

In order to test the extent to which our results might be affected by the measure of payout, we consider some alternative metrics of our dependent variable (Table 5). We use dividends scaled by total assets (Model 5), dividends scaled by sales (Model 6), and we consider the likelihood of paying dividends in Model 7 (Table 5). Since the dependent variable in Model 7 is the likelihood of paying dividends, in this column we use the instrumental variables probit method. Overall, our findings are in line with those previously reported and corroborate the non-linear relationship between women in boards and payout policy, with an initially positive effect that turns negative after a given point.

4.3. Female directors in family firms

We now analyse the specific effect of family ties. In turn, we focus on family firms and classify each female director depending on her links with the dominant owner family. Since the generational stage of family firms might influence dividend policy, we include the variable GENERATION as a measure to identify which family generation controls the firm (Lubatkin, Schulze, Ling, & Dino, 2005; Michiels, Voordeckers, Lybaert, & Steijvers, 2015). This variable takes the value of one to four depending on whether the family firm is the first, second, third or fourth generation, respectively. Furthermore, as substitute measures of the generational effect, we estimate alternative models that include two control variables: CEOage, defined as the age of the CEO, and FAM_MD, defined as the number of family male directors on the board of family firms divided by the total number of board members.

In order to test how family and non-family female directors affect dividend policy, we estimate Models 8 to 19 in Table 6. The columns

Table 4
Propensity score matching estimates.

	Model 4
WOMEN	0.751*** (4.22)
WOMEN ²	−0.030*** (−5.77)
ROA	1.340* (1.83)
GROWTH	0.03 (0.41)
LEV	−0.072* (−1.77)
SIZE	0.005 (0.10)
VOTING	−0.004 (−1.08)
BOARDSIZE	0.204 (0.77)
Intercept	1.524* (1.88)
F test	43.7***
U test	2.86***
Adj. R2	0.29
No. of observations	1228

Estimated coefficients (t-statistics based on robust standard error). The dependent variable is PAYOUT (total dividends to net income). WOMEN is the proportion of female directors, ROA is return on assets, GROWTH is growth opportunities, LEV is financial leverage, SIZE is firm size, VOTING is the proportion of voting rights of the ultimate shareholder and BOARDSIZE is the size of the board. All the regressions include industry and time dummy variables. F is the test of the joint significance of all the coefficients. U is the test of the nonlinear effect of female directors. *****: statistically significant at 1, 5 and 10%, respectively.

Table 5
Alternative dependent variables.

	Dependent variable: Div/At (GMM)	Dependent variable: Div/Sales (GMM)	Likelihood of dividends (IV Probit)
	Model 5	Model 6	Model 7
WOMEN	0.040** (2.44)	0.066*** (4.54)	0.239*** (5.39)
WOMEN ²	−0.001*** (−2.61)	−0.001*** (−3.22)	−0.006*** (−4.45)
ROA	0.096*** (10.12)	0.024*** (2.73)	0.128* (1.73)
GROWTH	−0.001*** (−11.35)	−0.003*** (4.54)	−0.011* (−1.74)
LEV	−0.004 (−1.09)	−0.009 (−0.21)	−0.032 (−0.81)
SIZE	0.001* (1.64)	0.008*** (8.40)	0.019 (1.05)
VOTING	0.001*** (2.68)	0.004*** (10.67)	0.003*** (2.79)
BOARDSIZE	0.019*** (3.57)	0.013** (2.36)	0.416*** (3.71)
Intercept	−0.102*** (−2.93)	−0.107*** (8.27)	0.297 (1.15)
m ₂	−0.44	0.91	
Z1	44.48***	41.15***	
Z2	8.65***	32.76***	
Z3	11.25***	38.04***	
Hansen test	76.54	80.37	
F test	1266***	249.24***	
U test	2.40**	2.48***	
χ ²			2915.21***
Log likelihood			−4840.91
Wald test			32.52***
exogeneity			
No. of observations	1464	1464	1464

Estimated coefficients (t-statistics based on robust standard error). The dependent variable is dividends to total assets (Model 5), dividends to total sales (Model 6), and the likelihood of paying dividends (Model 7). WOMEN is the proportion of female directors, ROA is return on assets, GROWTH is growth opportunities, LEV is financial leverage, SIZE is firm size, VOTING is the proportion of voting rights of the ultimate shareholder and BOARDSIZE is the size of the board. All the regressions include industry and time dummy variables. Hansen is a test of over-identifying restrictions, under the null hypothesis that all instruments are uncorrelated with the disturbance process. m₂ is the statistical test for lack of second-order serial correlation in the first-difference residual. z₁ is the Wald test of the joint significance of the reported coefficients. z₂ is the Wald test of the joint significance of time dummies. z₃ is the Wald test of the joint significance of industry dummies. F is the test of the joint significance of all the coefficients. U is the test of the nonlinear effect of female directors *****: statistically significant at 1, 5 and 10%, respectively.

differ in terms of the dependent variable: dividends to net income (Models 8 to 11), dividends to total assets (Models 12 to 15), dividends to sales (models 16 to 19). The results suggest interesting differences compared to those mentioned earlier. When we focus on female directors who have family ties with the controlling family (Models 8, 9, 12, 13, 16, and 17), we find an inverted-U shaped relationship between women on boards and dividends. This might mean that, when family female directors carry little weight on the board, female representation increases dividend payout because of family-tied women's interest and desire to protect the family image and reputation (Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007). Additionally, at these low to moderate levels of female presence, women directors may have a greater ability and more incentives than their non-family counterparts to limit the opportunistic actions of managers (Terjesen et al., 2009; Villalonga & Amit, 2006). However, the presence of family women on the board beyond the optimal level might exacerbate other agency conflicts since the board would lack the necessary independence to act as an effective control mechanism and would therefore prioritize family interests and incentives to the detriment of those of outside investors. Accordingly, for high enough levels of female presence, these ties with the controlling family might prevail over female preferences, such that the “halo effect” created by appointing a high number of (family) women directors could be compatible with a certain degree of

Table 6
Family vs. non-family female directors.

	Dependent variable: Payout (GMM)				Dependent variable: Div/At (GMM)				Dependent variable: Div/ Sales (GMM)			
	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16	Model 17	Model 18	Model 19
FAM_WD	0.428*** (2.65)	0.255*** (3.89)			0.235*** (3.29)	0.077*** (4.88)			0.139** (2.01)	0.079** (2.34)		
FAM_WD ²	-0.012*** (-2.60)	-0.009*** (-3.33)			-0.007*** (-3.14)	-0.002*** (-4.76)			-0.004** (-2.02)	-0.003*** (-2.90)		
NONFAM_WD			-0.286** (-2.56)	-0.177** (-2.30)			-0.157*** (-4.06)	-0.015*** (-2.30)			-0.094** (-2.31)	-0.058** (-2.08)
NONFAM_WD ²			0.014*** (3.97)	0.008*** (3.17)			0.004** (2.52)	0.0005*** (6.75)			0.004*** (3.10)	0.002*** (2.78)
ROA	0.271* (1.75)	0.469*** (3.09)	0.346* (1.85)	0.977*** (3.95)	0.093*** (3.78)	0.043*** (6.03)	0.044*** (4.38)	0.041*** (6.11)	0.074** (2.40)	0.035*** (3.68)	0.01 (0.77)	0.035*** (4.01)
GROWTH	0.002 (0.47)	-0.003 (-1.16)	0.006 (0.56)	-0.013** (-2.36)	-0.005** (-2.32)	-0.005*** (-6.03)	-0.004** (-2.11)	-0.002*** (-2.73)	0.004 (1.23)	-0.003** (-3.58)	0.004 (1.36)	-0.003*** (4.35)
LEV	-0.650** (-2.14)	-0.010 (-0.10)	-0.185*** (2.78)	-0.656*** (-5.13)	-0.002 (-0.21)	-0.001 (-1.08)	-0.001 (-0.41)	-0.005** (-2.45)	-0.001 (-0.90)	0.001 (-0.35)	-0.020** (-2.11)	-0.003 (-0.95)
SIZE	0.085* (1.97)	-0.005 (-0.30)	0.213*** (3.29)	0.054** (2.41)	0.003 (1.58)	0.004 (0.82)	0.002 (1.27)	-0.002 (-0.43)	0.017** (2.01)	0.003*** (3.00)	0.0025 (1.22)	0.002** (2.18)
VOTING	0.005* (1.85)	-0.003 (-0.38)	0.001* (1.71)	-0.003*** (-3.08)	0.001* (1.92)	-0.003** (-2.16)	0.007 (1.32)	0.002 (1.18)	0.006 (0.40)	-0.001*** (-3.81)	0.001 (1.22)	-0.001*** (4.20)
BOARDSIZE	0.266* (1.90)	0.177** (1.95)	0.500* (1.82)	0.455*** (4.43)	0.003 (0.41)	0.008*** (3.07)	0.006 (0.55)	0.010*** (3.60)	0.026* (1.65)	0.010** (2.19)	0.023** (2.19)	0.015*** (3.23)
GENERATION	0.299*** (2.76)		0.162* (1.82)		-0.002 (-0.72)		0.010 (-2.35)		0.004 (0.58)		0.008* (1.95)	
CEOAge		-0.004* (-1.81)		-0.006*** (-2.84)		-0.003*** (-5.96)		-0.004*** (8.38)		-0.003*** (-4.27)		-0.004*** (6.30)
FAM_MD		0.005** (2.23)		0.005*** (2.56)		0.001*** (4.61)		0.001*** (3.45)		0.001*** (2.81)		0.001*** (2.52)
Intercept	-2.261*** (-2.57)	0.282 (0.61)	-2.758*** (-3.01)	1.883** (2.45)	-0.047* (-1.97)	-0.027*** (-4.05)	-0.021 (-0.81)	-0.024*** (-4.90)	0.158 (0.74)	-0.061*** (-5.77)	-0.041* (-1.65)	-0.065*** (-5.97)
m ₂	-0.49	-0.61	-0.73	-0.35	0.64	0.19	0.54	0.19	0.23	-0.80	-0.82	-0.82
Z1	20.60***	4.76***	4.08***	11.49***	5.20***	53.99***	8.86***	57.58***	25.6***	23.63***	4.60***	21.51***
Z2	5.99***	3.63***	8.35***	4.63***	6.04***	28.65***	4.88***	9.06***	9.6***	7.04***	4.3***	7.79***
Z3	9.67***	26.39***	16.25***	29.36***	7.05***	39.51***	6.72***	16.46***	5.91***	31.68***	6.34***	38.62***
Hansen test	34.64	68.40	34.45	45.44	24.18	61.53	29.98	49.67	27.10	61.60	31.76	65.79
F test	637.21***	227.90***	201.98***	653.31***	81.04***	3106.09***	95.60***	742.53***	39.32***	3487.56***	192.4***	1732.72***
U test	2.50***	3.06***	2.56***	2.30**	2.99***	1.31*	2.04**	3.29***	2.78***	3.73***	2.20**	4.85***
No. of observations	745	745	745	745	745	745	745	745	745	745	745	745

Estimated coefficients (t-statistics based on robust standard error). The dependent variable is dividends to net earnings (models 8 and 9), dividends to total assets (models 10 and 11), dividends to total sales (models 12 and 13), and the likelihood of paying dividends (models 14 and 15). FAM_WD (NONFAM_WD) is the proportion of female directors with (without) family ties with the controlling family, ROA is return on assets, GROWTH is growth opportunities, LEV is financial leverage, SIZE is firm size, VOTING is the proportion of voting rights of the ultimate shareholder, BOARDSIZE is the size of the board, and GENERATION is the generational-stage of the family firm. CEOAge is the age of the CEO. FAM_MD is the number of family male directors on the board of family firms divided by the total number of board members. All the regressions include industry and time dummy variables. Hansen is a test of over-identifying restrictions, under the null hypothesis that all instruments are uncorrelated with the disturbance process. m₂ is the statistical test for the lack of second-order serial correlation in the first-difference residual. z₁ is the Wald test of the joint significance of the reported coefficients. z₂ is the Wald test of the joint significance of time dummies. z₃ is the Wald test of the joint significance of industry dummies. F is the test of the joint significance of all the coefficients. U is the test of the nonlinear effect of female directors. ***: statistically significant at 1, 5 and 10%, respectively.

family entrenchment. In these cases, when a critical mass of family female directors is achieved, these directors may typically pursue family objectives, such as long term survival and family reputation through risk avoidance. The reduction in dividend payout is a way to retain more cash under family control and to ensure liquidity in the event of possible future threats or opportunities. Thus, in a socioemotional framework, our results could suggest that female family members engage particularly in non-financial firm strategies, such as maintaining family reputation and long-term objectives.

In contrast, Models 10, 11, 14, 15, 18, and 19 in Table 6 show a U-shaped relationship between non-family women directors and dividend policy. Therefore, at low levels of female presence, non-family women directors find it difficult to play their role of independent monitors of the controlling family since they are “out-group” board members. In such cases, until the critical threshold is achieved, these female directors align with family owners and award fewer dividends. Non-family female directors need a critical mass if they are to work as effective monitors, and even to legitimize their presence on the board. In turn, once the inflection point is achieved, the presence of non-family female directors is positively related to dividends because these women directors have a greater ability -and signal their involvement- to make more dividend payments and protect the interests of all stakeholders, including minority shareholders. Finally, in Table 7 we analyse the likelihood of paying dividends (Models 20 to 23). The results obtained concur with those shown in the previous estimations.

Table 7
Family vs. non-family female directors.

	Model 20	Model 21	Model 22	Model 23
FAM_WD	0.287*** (10.73)	0.279** (2.15)		
FAM_WD ²	-0.009*** (-12.58)	-0.009** (-2.11)		
NONFAM_WD			-0.329*** (-6.55)	0.335*** (13.51)
NONFAM_WD ²			0.012*** (5.93)	-0.012*** (-13.41)
ROA	0.060 (0.48)	0.276 (0.69)	0.724 (1.37)	0.478*** (5.74)
GROWTH	-0.002 (-0.25)	-0.003 (-0.30)	-0.012 (-1.12)	-0.002 (-0.16)
LEV	-0.191* (-1.73)	-0.684 (-0.69)	-0.685** (-1.94)	-0.148*** (-5.26)
SIZE	0.145 (1.48)	0.227* (1.67)	0.144** (2.20)	0.280*** (6.71)
VOTING	0.004* (1.79)	-0.009*** (-2.93)	0.001 (0.60)	-0.002 (-0.75)
BOARDSIZE	0.725* (1.76)	0.068 (0.50)	0.604** (2.17)	0.145*** (6.74)
GENERATION CEOAge	0.014 (0.20)	-0.004 (-0.84)	0.094 (1.53)	0.001 (0.37)
FAM_MD		0.008 (0.34)		0.028*** (3.33)
Intercept	-0.638 (-0.36)	-2.019 (-0.51)	-3.442** (-2.50)	0.554 (0.12)
χ^2	1223.54***	892.17***	806.54***	1915.28***
Log likelihood	-2295.94	-2901.41	-2147.88	-2881.65
Wald test	5.32***	3.78**	3.87**	6.01***
exogeneity				
No. of observations	745	745	745	745

Likelihood of dividends (IV Probit): Estimated coefficients (t-statistics based on robust standard errors). FAM_WD (NONFAM_WD) is the proportion of female directors with (without) family ties with the controlling family, ROA is return on assets, GROWTH is growth opportunities, LEV is financial leverage, SIZE is firm size, VOTING is the proportion of voting rights of the ultimate shareholder, BOARDSIZE is the size of the board, and GENERATION is the generational-stage of the family firm. CEOAge is the age of the CEO. FAM_MD is the number of family male directors on the board of family firms divided by the total number of board members. ***, **, * : statistically significant at 1, 5 and 10%, respectively.

5. Concluding remarks

Despite the increasing amount of research on the role played by female characteristics in firms and corporate decisions, we still lack a unifying theoretical approach and have difficulty reconciling the apparently conflicting empirical results. The agency theory, the socio-emotional wealth theory or the gender socialization theory provide arguments for a multifaceted relationship between female representation and a number of firm issues, such as firm performance or risk.

In this paper, we analyse the relationship between female directors and payout policy for a sample of 131 non-financial Spanish listed firms between 2003 and 2017. Previous research has found both a positive and a negative relationship. We conduct our analysis on the basis of the critical mass theory and find an inverted-U shaped relationship. For low levels of female representation on the board, women directors increase dividends in order to reduce agency conflicts or to improve reputation or legitimacy. However, after an inflection point, characteristics often associated with women, such as risk aversion, or a conservative and financially prudent attitude, as well as lower overconfidence emerge and reduce dividend payments.

We run a specific analysis for family firms and find intriguing results. Our results show the “one size fits all” rule does not hold and that female directors play a very different role depending on family ties with controlling shareholders. Women directors who have family connections with dominant shareholders exhibit the same inverted-U shaped relationship with dividends. In contrast, for female directors who have no family ties, the relationship with dividends is U-shaped. It therefore seems that after a given point family ties conflict with the independence of female directors. Thus, the influence of non-family female directors on payout in family firms is only evident when this group of women gain enough power, visibility, authority and legitimacy. This can again be understood as confirmation of the critical mass theory, such that the role of non-family female directors can only be beneficial for minority shareholders once a high enough proportion of women has been achieved.

Our research has far reaching implications by suggesting that the relationship between female directors and dividend policy (or other firm strategy issues) is more complex than has traditionally been thought, and may differ significantly across firms with different levels of board gender diversity. In addition, we prove that women directors are not a uniform group who differ from their male counterparts, but that different types of women directors may behave in a different way, and that there are certain contextual factors which impact each asymmetrically.

This research may be of interest to policymakers, practitioners and academia. As far as authorities and policymakers are concerned, we suggest that a “one size fits all” policy may prove ineffective. There is growing social concern vis-à-vis ensuring gender equality in the business arena, although this equality cannot be achieved without taking into account the different female traits and how women’s influence changes in different situations. Our results may also be helpful both for investors and practitioners. First, given the relevance of payout policy for assessing a firm’s value, we provide some clues to improve companies’ value maximization objective. Second, we show the specificities of family firms and stress the need for complementary analyses of these firms. For academia, our results challenge (and reconcile) some previous evidence and call for new eclectic theoretical approaches. Our research, which combines different types and sources of data, shows that these complex relationships must be addressed with comprehensive datasets.

This paper opens up several directions for future research. We focus on the role of women directors in the framework of family ownership. Nevertheless, female characteristics are not universal in individuals. In turn, a more fine-grained measure of female specific motivations and ways of thinking would improve the explanatory ability of our model. In addition, female characteristics may interact with a number of other corporate governance issues such as CEO gender, board committee

structure, and so on. In addition, we focus on one single country. Future research could look at whether different cultural factors, such as gender equality, might moderate the results in an international framework. Finally, while we study the direct relationship between female directors and dividends, future inquiry might examine whether this relation has implications on other issues, such as stock price or corporate risk taking, to which dividend policy is closely related.

Declaration of Competing Interest

The authors have no competing interests to declare.

References

- Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94, 291–309.
- Adams, R. B., & Funk, P. (2012). Beyond the Glass Ceiling: Does Gender Matter? *Management Science*, 58(2), 219–235.
- Adhikari, B. K. (2018). Female executives and corporate cash holdings. *Applied Economics Letters*, 25(13), 958–963.
- Al-Rahahleh, A. S. (2017). Corporate governance quality, board gender diversity and corporate dividend policy: Evidence from Jordan. *Australasian Accounting, Business and Finance Journal*, 11(2), 86–104.
- Amorelli, M.-F., & García-Sánchez, I.-M. (2020). Critical mass of female directors, human capital, and stakeholder engagement by corporate social reporting. *Corporate Social Responsibility and Environmental Management*, 27(1), 204–221.
- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1), 29–51.
- Baker, S. R., Bloom, N., & Davis, S. J. (2016). Measuring economic policy uncertainty. *The Quarterly Journal of Economics*, 131(4), 1593–1636.
- Barnea, A., & Rubin, A. (2010). Corporate social responsibility as a conflict between shareholders. *Journal of Business Ethics*, 97, 71–86.
- Basco, R., & Voordeckers, W. (2015). The relationship between the board of directors and firm performance in private family firms: A test of the demographic versus behavioral approach. *Journal of Management & Organization*, 21(4), 411–435.
- Bear, S., Rahman, N., & Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics*, 97(2), 207–221.
- Benjamin, S. J., & Biswas, P. K. (2019). Board gender composition, dividend policy and COD: The implications of CEO duality. *Accounting Research Journal*, 32(3), 454–476.
- Berrone, P., Cruz, C., & Gómez-Mejía, L. R. (2012). Socioemotional wealth in family firms: Theoretical dimensions, assessment approaches, and agenda for future research. *Family Business Review*, 25(3), 258–279.
- Bettinelli, C., Del Bosco, B., & Giachino, C. (2019). Women on boards in family firms: What we know and what we need to know. In E. Memili, & C. Dibrell (Eds.), *The Palgrave handbook of heterogeneity among family firms* (pp. 201–228). Cham: Springer International Publishing.
- Bilinski, P., & Lyssimachou, D. (2018). Dividend guidance to manage analyst dividend expectations. *International Review of Financial Analysis*, 60, 53–68.
- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143.
- Bona-Sánchez, C., Pérez-Alemán, J., & Santana-Martín, D. J. (2019). Earnings credibility in politically connected family firms. *The British Accounting Review*, 51(3), 316–332.
- Borghesi, R., Houston, J. F., & Naranjo, A. (2014). Corporate socially responsible investments: CEO altruism, reputation, and shareholder interests. *Journal of Corporate Finance*, 26, 164–181.
- Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. *Journal of Financial Economics*, 77(3), 483–527.
- Brawn, D. A., & Sević, A. (2018). Firm size matters: Industry sector, firm age and volatility do too in determining which publicly-listed US firms pay a dividend. *International Review of Financial Analysis*, 58, 132–152.
- Bui, A. T., Nguyen, C. V., Pham, T. P., & Phung, D. T. (2019). Female leadership and borrowing constraints: Evidence from an emerging economy. *International Review of Financial Analysis*, 101332.
- Byoun, S., Chang, K., & Kim, Y. S. (2016). Does corporate board diversity affect corporate payout policy? *Asia-Pacific Journal of Financial Studies*, 45(1), 48–101.
- Cabeza-García, L., Fernández-Gago, R., & Nieto, M. (2018). Do Board gender diversity and director typology impact CSR reporting? *European Management Review*, 15(4), 559–575.
- Campopiano, G., De Massis, A., & Chirico, F. (2014). Firm philanthropy in small- and medium-sized family firms: The effects of family involvement in ownership and management. *Family Business Review*, 27(3), 244–258.
- Chadwick, I. C., & Dawson, A. (2018). Women leaders and firm performance in family businesses: An examination of financial and nonfinancial outcomes. *Journal of Family Business Strategy*, 9(4), 238–249.
- Chen, J., Leung, W. S., & Evans, K. P. (2018). Female board representation, corporate innovation and firm performance. *Journal of Empirical Finance*, 48, 236–254.
- Chen, J., Leung, W. S., & Goergen, M. (2017). The impact of board gender composition on dividend payouts. *Journal of Corporate Finance*, 43, 86–105.
- Chua, J. H., Chrisman, J. J., Kellermanns, F., & Wu, Z. (2011). Family involvement and new venture debt financing. *Journal of Business Venturing*, 26(4), 472–488.
- CNMV. (2015). *Good governance code of listed companies*, Madrid.
- Canyon, M. J., & He, L. (2017). Firm performance and boardroom gender diversity: A quantile regression approach. *Journal of Business Research*, 79, 198–211.
- Cruz, C. C., Gómez-Mejía, L. R., & Becerra, M. (2010). Perceptions of benevolence and the Design of Agency Contracts: CEO-TMT relationships in family firms. *Academy of Management Journal*, 53(1), 69–89.
- Danes, S. M., & Olson, P. D. (2003). Women's role involvement in family businesses, business tensions, and business success. *Family Business Review*, 16(1), 53–68.
- Delmas, M. A., & Gergaud, O. (2014). Sustainable certification for future generations: The case of family business. *Family Business Review*, 27(3), 228–243.
- Derks, B., Van Laar, C., & Ellemers, N. (2016). The queen bee phenomenon: Why women leaders distance themselves from junior women. *The Leadership Quarterly*, 27(3), 456–469.
- Dou, J., Zhang, Z., & Su, E. (2014). Does family involvement make firms donate more? Empirical evidence from Chinese private firms. *Family Business Review*, 27(3), 259–274.
- Eluyela, D. F., Dahunsi, O., Tolase, O. A., Okere, W., Ogabi, M., & Kafidipe, A. (2019). Impact of gender dichotomy on dividend payout policy in listed Nigerian financial services firm. *Cogent Business and Management*, 6(1).
- Ernst & Young. (2015). Women in leadership. In *The family business advantage*. Family Business Center of Excellence.
- Faccio, M., Marchica, M. T., & Mura, R. (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. *Journal of Corporate Finance*, 39, 193–209.
- Farinha, J. (2003). Dividend policy, corporate governance and the managerial entrenchment hypothesis: An empirical analysis. *Journal of Business Finance and Accounting*, 30(9&10), 1173–1209.
- Farrell, K. A., & Hersch, P. L. (2005). Additions to corporate boards: The effect of gender. *Journal of Corporate Finance*, 11(1), 85–106.
- García Lara, J. M., García Osma, B., Mora, A., & Scapin, M. (2017). The monitoring role of female directors over accounting quality. *Journal of Corporate Finance*, 45, 651–668.
- Ghirelli, C., Pérez, J. J., & Urtasun, A. (2019). A new economic policy uncertainty index for Spain. *Economics Letters*, 182, 64–67.
- Glass, C., & Cook, A. (2016). Leading at the top: Understanding women's challenges above the glass ceiling. *The Leadership Quarterly*, 27(1), 51–63.
- Gómez-Mejía, L. R., Haynes, K. T., Núñez-Nickel, M., Jacobson, K. J., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. *Administrative Science Quarterly*, 52(1), 106–137.
- González, M., Guzmán, A., Pablo, E., & Trujillo, M. A. (2020). Does gender really matter in the boardroom? Evidence from closely held family firms. *Review of Managerial Science*, 14(1), 221–267.
- Gyapong, E., Ahmed, A., Ntim, C. G., & Nadeem, M. (2019). Board gender diversity and dividend policy in Australian listed firms: The effect of ownership concentration. *Asia Pacific Journal of Management*, 38(2), 603–643. <https://doi.org/10.1007/s10490-019-09672-2>
- Gyapong, E., Ahmed, A., Ntim, C. G., & Nadeem, M. (2021). Board gender diversity and dividend policy in Australian listed firms: The effect of ownership concentration. *Asia Pacific Journal of Management*, 38(2), 603–643.
- Harakeh, M., Lee, E., & Walker, M. (2019). The effect of information shocks on dividend payout and dividend value relevance. *International Review of Financial Analysis*, 61, 82–96.
- Heckman, J. J., Ichimura, H., & Todd, P. (1998). Matching as an econometric evaluation estimator. *The Review of Economic Studies*, 65(2), 261–294.
- Herdhayinta, H., Lau, J., & Shen, C. H. H. (2021). Family female directors versus non-family female directors: Effects on firm value and dividend payouts in an extreme institutional environment. *British Journal of Management*, 32(4), 969–987. <https://doi.org/10.1111/1467-8551.12530>
- Hoobler, J. M., Masterson, C. R., Nkomo, S. M., & Michel, E. J. (2018). The business case for women leaders: Meta-analysis, research critique, and path forward. *Journal of Management*, 44(6), 2473–2499.
- Hu, A., & Kumar, P. (2004). Managerial entrenchment and payout policy. *Journal of Financial and Quantitative Analysis*, 39(4), 759–790.
- Idris, A. A., Ishak, R., & Hassan, N. L. (2019). Dividend payout among Nigerian firms: Do female directors matters? *Jurnal Ekonomi Modernisasi*, 15(1), 1–16.
- Ingersoll, A. R., Glass, C., Cook, A., & Olsen, K. J. (2019). Power, status and expectations: How narcissism manifests among women CEOs. *Journal of Business Ethics*, 158(4), 893–907.
- Isakov, D., & Weisskopf, J.-P. (2015). Pay-out policies in founding family firms. *Journal of Corporate Finance*, 33, 330–344.
- Joecks, J., Pull, K., & Vetter, K. (2013). Gender diversity in the boardroom and firm performance: What exactly constitutes a “critical mass?”. *Journal of Business Ethics*, 118(1), 61–72.
- Karpavičius, S., & Yu, F. (2018). Dividend premium: Are dividend-paying stocks worth more? *International Review of Financial Analysis*, 56, 112–126.
- Kim, J. Y., Roden, D. M., & Cox, S. R. (2013). The composition and compensation of the board of directors as predictors of corporate fraud. *Accounting and Finance Research*, 2(3), 142–154.
- La Porta, R., López de Silanes, F., Shleifer, A., & Vishny, R. W. (2000). Agency problems and dividend policies around the world. *Journal of Finance*, 55(1), 1–33.
- Lang, J. R., & Lockhart, D. E. (1990). Increased environmental uncertainty and changes in board linkage patterns. *Academy of Management Journal*, 33(1), 106–128.
- Liu, Y., Lei, L., & Buttner, E. H. (2020). Establishing the boundary conditions for female board directors' influence on firm performance through CSR. *Journal of Business Research*, 121, 112–120.
- Liu, Y., Wei, Z., & Xie, F. (2014). Do women directors improve firm performance in China? *Journal of Corporate Finance*, 28, 169–184.

- Lubatkin, M. H., Schulze, W. S., Ling, Y., & Dino, R. N. (2005). The effects of parental altruism on the governance of family-managed firms. *Journal of Organizational Behavior*, 26(3), 313–330.
- Malik, M. F., Nowland, J., & Buckley, S. (2021). Voluntary adoption of board risk committees and financial constraints risk. *International Review of Financial Analysis*, 73, 101611.
- Martinez Jimenez, R. (2009). Research on women in family firms: Current status and future directions. *Family Business Review*, 22(1), 53–64.
- McGuinness, P. B., Lam, K. C. K., & Vieito, J. P. (2015). Gender and other major board characteristics in China: Explaining corporate dividend policy and governance. *Asia Pacific Journal of Management*, 32(4), 989–1038.
- Michiels, A., Voordeckers, W., Lybaert, N., & Steijvers, T. (2015). Dividends and family governance practices in private family firms. *Small Business Economics*, 44(2), 299–314.
- Minichilli, A., Corbetta, G., & MacMillan, I. C. (2010). Top management teams in family-controlled companies: ‘Familianness’, ‘Faultlines’, and their impact on financial performance. *Journal of Management Studies*, 47(2), 205–222.
- Mustafa, A., Saeed, A., Awais, M., & Aziz, S. (2020). Board-gender diversity, family ownership, and dividend announcement: Evidence from Asian emerging economies. *Journal of Risk and Financial Management*, 13(4), 62–82.
- Nekhili, M., Nagati, H., Chtioui, T., & Nekhili, A. (2017). Gender-diverse board and the relevance of voluntary CSR reporting. *International Review of Financial Analysis*, 50, 81–100.
- Nguyen, T. H. H., Ntim, C. G., & Malagila, J. K. (2020). Women on corporate boards and corporate financial and non-financial performance: A systematic literature review and future research agenda. *International Review of Financial Analysis*, 71, 101554.
- Niessen, A., & Ruenzi, S. (2007). *Sex matters: Gender differences in a professional setting*. Working Paper. Centre for Financial Research (CFR), University of Cologne.
- Palvia, A., Vähämaa, E., & Vähämaa, S. (2015). Are female CEOs and chairwomen more conservative and risk averse? Evidence from the banking industry during the financial crisis. *Journal of Business Ethics*, 131(3), 577–594.
- Palvia, A., Vähämaa, E., & Vähämaa, S. (2020). Female leadership and bank risk-taking: Evidence from the effects of real estate shocks on bank lending performance and default risk. *Journal of Business Research*, 117, 897–909.
- Pearce, J. A., & Zahra, S. A. (1992). Board compensation from a strategic contingency perspective. *Journal of Management Studies*, 29, 411–438.
- Peterson, C. A., & Philpot, J. (2007). Women’s roles on U.S. fortune 500 boards: Director expertise and committee memberships. *Journal of Business Ethics*, 72(2), 177–196.
- Pindado, J., Requejo, I., & de la Torre, C. (2014). Family control, expropriation, and investor protection: A panel data analysis of Western European corporations. *Journal of Empirical Finance*, 27, 58–74.
- Pindado, J., Requejo, I., & Torre, C. d. l. (2012). Do family firms use dividend policy as a governance mechanism? Evidence from the euro zone. *Corporate Governance: An International Review*, 20(5), 413–431.
- Poletti-Hughes, J., & Briano-Turrent, G. C. (2019). Gender diversity on the board of directors and corporate risk: A behavioural agency theory perspective. *International Review of Financial Analysis*, 62, 80–90.
- Pucheta-Martínez, M. C., & Bel-Oms, I. (2015). The board of directors and dividend policy: The effect of gender diversity. *Industrial and Corporate Change*, 25(3), 523–547.
- Sacristán-Navarro, M., & Gómez-Ansón, S. (2007). Family ownership and pyramids in the Spanish market. *Family Business Review*, 20(3), 247–265.
- Saeed, A., & Sameer, M. (2017). Impact of board gender diversity on dividend payments: Evidence from some emerging economies. *International Business Review*, 26(6), 1100–1113.
- Saggese, S., Sarto, F., & Viganò, R. (2021). Do women directors contribute to R&D? The role of critical mass and expert power. *Journal of Management and Governance*, 25(2), 593–623.
- Sanan, N. K. (2019). Impact of board characteristics on firm dividends: Evidence from India. *Corporate Governance: The international Journal of Business in Society*, 19(6), 1204–1215.
- Shahab, Y., Ntim, C. G., Ullah, F., Yungang, C., & Ye, Z. (2020). CEO power and stock price crash risk in China: Do female directors’ critical mass and ownership structure matter? *International Review of Financial Analysis*, 68, 101457.
- Sharma, P., Chrisman, J. J., & Chua, J. H. (2003). Succession planning as planned behavior: Some empirical results. *Family Business Review*, 16(1), 1–15.
- Sila, V., Gonzalez, A., & Hagedorff, J. (2016). Women on board: Does boardroom gender diversity affect firm risk? *Journal of Corporate Finance*, 36, 26–53.
- Smith, D. D., Pennathur, A. K., & Marciniak, M. R. (2017). Why do CEOs agree to the discipline of dividends? *International Review of Financial Analysis*, 52, 38–48.
- Sun, F., Dutta, S., Zhu, P., & Ren, W. (2021). Female insiders’ ethics and trading profitability. *International Review of Financial Analysis*, 74, 101710.
- Tahir, H., Rahman, M., & Masri, R. (2020). Do Board traits influence Firms’ dividend payout policy? Evidence from Malaysia. *The Journal of Asian Finance, Economics, and Business*, 7(3), 87–99.
- Terjesen, S., Sealy, R., & Singh, V. (2009). Women directors on corporate boards: A review and research agenda. *Corporate Governance: An International Review*, 17(3), 320–337.
- Trinh, V. Q., Cao, N. D., Dinh, L. H., & Nguyen, H. N. (2021). Boardroom gender diversity and dividend payout strategies: Effects of mergers deals. *International Journal of Finance and Economics*, 26(4), 6014–6035. <https://doi.org/10.1002/ijfe.2106>
- Tuggle, C. S., Schnatterly, K., & Johnson, R. A. (2010). Attention patterns in the boardroom: How board composition and processes affect discussion of entrepreneurial issues. *Academy of Management Journal*, 53(3), 550–571.
- Vandebeek, A., Voordeckers, W., Lambrechts, F., & Huybrechts, J. (2016). Board role performance and faultlines in family firms: The moderating role of formal board evaluation. *Journal of Family Business Strategy*, 7(4), 249–259.
- Veltrop, D. B., Hermes, N., Postma, T. J., & de Haan, J. (2015). A tale of two factions: Why and when factional demographic faultlines hurt board performance. *Corporate Governance: An International Review*, 23(2), 145–160.
- Villalonga, B., & Amit, R. (2006). How do family ownership, control, and management affect firm value? *Journal of Financial Economics*, 80(2), 385–417.
- Waldman, D. A., Ramirez, G. G., House, R. J., & Puranam, P. (2001). Does leadership matter? CEO leadership attributes and profitability under conditions of perceived environmental uncertainty. *Academy of Management Journal*, 44(1), 134–143.
- Wellalage, N. H., Fernandez, V., & Thrikawala, S. (2020). Corruption and innovation in private firms: Does gender matter? *International Review of Financial Analysis*, 70, 101500.
- Wellalage, N. H., Fauzi, F., Wang, G., & Basyith, A. (2014). Corporate governance and cash dividend policy: Evidence from Chinese IPOs. *Management and Accounting Review (MAR)*, 13(1), 109–128.
- Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT Press.
- Ye, D., Deng, J., Liu, Y., Szweczyk, S. H., & Chen, X. (2019). Does board gender diversity increase dividend payouts? Analysis of global evidence. *Journal of Corporate Finance*, 58, 1–26.
- Zalata, A. M., Tauringana, V., & Tingbani, I. (2018). Audit committee financial expertise, gender, and earnings management: Does gender of the financial expert matter? *International Review of Financial Analysis*, 55, 170–183.
- Zeng, S., & Wang, L. (2015). CEO gender and corporate cash holdings. Are female CEOs more conservative? *Asia-Pacific Journal of Accounting & Economics*, 22(4), 449–474.