

Women's Leadership and Firm Performance: Family Versus Nonfamily Firms

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Abstract We evaluate the relationship between the appointment of women to CEO or Chair positions and firm performance, and shed light on the differences between family and nonfamily firms. By using a propensity score matching approach on a sample of 394 French firms over the period 2001–2010, we find major discordances between women's leadership style and family business expectations relative to firm performance, as measured by return on assets and Tobin's q. Notably, our results support the conjecture that family firms, which are more conducive to transformational leadership, offer women a more appropriate climate for exercising the function of Chair than that of CEO. In contrast, women CEOs perform better in non-family firms. Our findings move away from the predominant focus on barriers and stereotypes images about the female leadership and support the contingency theory of leadership, which states that the effectiveness of a leadership style depends on the organization and culture in which leaders operate, and on task-related positions

Keywords Woman leadership · Family firms · Transformational leadership · Contingency theory of leadership · Performance · Propensity score matching

Introduction

CEOs and Chairs of the board are the most powerful individuals within a firm, and play a central role in the firm's decision-making process (Palvia et al. 2015). However, despite the recognized virtues of women in management, corporate leadership remains male-dominated. Women's lack of access to CEO and Chair positions is an international phenomenon. Scrutinizing gender diversity in the Fortune 500 between 1987 and 1996, Daily et al. (1999) highlight that while the number of female directors and the number of firms with female directors increased meaningfully, the number of female CEOs did not. The authors conclude pessimistically that the number of female CEOs is unlikely to grow substantively in the near future. A recent survey shows that in the US only 5 % of Fortune 1000 companies have female CEOs (Catalyst 2012). In 2012, the Australian Government Equal Opportunity for Women in the Workplace Agency (EOWA) produced an alarming report on the evolution of women in CEO and Chair positions within the top 200 companies listed on the Australian Stock Exchange (ASX 200), which found that 3.5 % of companies had a female CEO and 3 % had a woman as Chair.¹ Torchia et al. (2011) observe that only 5 % of CEOs and 7 % of Chairs were women among a sample of 317 Norwegian firms during 2005/2006. According to the European Commission, only 3.3 % of

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¹ Equal Opportunity for Women in the Workplace Agency (EOWA), 2012 Australian Census of Women in Leadership, www.eowa.gov.au.

CEO positions in large companies in Europe are held by women.² The special report by the Finland Chamber of Commerce (2014) shows that quotas may have successfully increased the number of women in boardrooms in both Finland and Norway, but have failed to promote leadership by women. The European Commission announced in November 2012 that it intended to introduce a 40 % quota for women on corporate boards of European companies (Isidro and Sobral 2015). In this conjecture, the question will be whether these quotas constitute a step forward in reducing the leadership gender gap (Wang and Kelan 2013).

The statistics mentioned above indicate that the number of female CEOs in large corporations continues to be extremely low, and confirm the presence of strong barriers and gender-based stereotypes, mainly at the highest levels of management (Milliken and Martins 1996; Daily et al. 1999; Oakley 2000). While women are likely to encounter greater barriers than men in their attempts to reach a top-level managerial position (Oakley 2000), family businesses assign more flexibility to women, helping them to succeed at personal and professional levels (Curimbaba 2002). Smith et al. (2006) affirm that top female CEOs may be selected primarily due to ties to the owners' families. More directly, Jorissen et al. (2005) highlight that family firms have more female CEOs than nonfamily firms do. Although family firms promote female leadership (Curimbaba 2002; Smith et al. 2006), few studies have focused specifically on gender issues in family businesses.

Despite the glass ceiling and stereotypes, the virtues attributed to women leaders abound in the literature. Many studies suggest that there are important gender differences in leadership style (Rosener 1990; Druskat 1994; Bass et al. 1996; Bass 1999; Eagly and Carli 2003; Eagly et al. 2003; Dezsö and Ross 2012; Bark et al. 2015). Critical at the top management level, the leadership style of Chairs and CEOs is undeniably decisive in firm performance (Leblanc 2005; Gabrielsson et al. 2007; Vandewaerde et al. 2011). To be an effective leader, certain behaviors are more relevant and successful than others. One style that has been found to be particularly effective in directing and motivating followers' actions is transformational leadership (Bass 1985). Transformational leadership theory is often used to explain leadership style with respect to gender differences (Druskat 1994; Bass et al. 1996; Eagly et al. 2003; Bark et al. 2015). Accordingly, given that transformational leadership behavior produces less incongruence between the leader role and the gender role, many studies state that female leaders are more inclined to adopt transformational leadership behavior than are their male counterparts (Rosener

1990; Druskat 1994; Bass et al. 1996; Bass 1999; Eagly and Carli 2003; Eagly et al. 2003; Dezsö and Ross 2012; Bark et al. 2015).

However, the supremacy of transformational leadership is questionable because the effectiveness of leadership style may vary, as the contingency theory of leadership states, according to the organization and culture in which leaders function and to task-related positions (Tannenbaum and Schmidt 1958; Fiedler 1964; Fiedler and Chemers 1967; Vroom and Yetton 1973). Indeed, studies on leadership largely focus on the relationship between leaders and their followers, and ignore the organization and culture in which leaders function (House and Aditya 1997). We apply the arguments of the contingency theory of leadership by considering another dimension in which leadership style effectiveness may also vary: gender leadership. The aim of our study is to fill this research gap and to test the prevalence of the contingency theory of leadership by considering two leadership positions (CEO and Chair) rarely granted to women, in two different environments: family and nonfamily firms.

Moving away from the predominant focus on barriers and stereotypes that hinder women from being effective leaders, our approach can be justified by at least four arguments. The first is that the functions of CEO and board Chair are quite different, and hence require different skills (Leblanc 2005; Gabrielsson et al. 2007; Vandewaerde et al. 2011). The second is that women and men may not have the same leadership skills, especially at the highest level of top management (Eagly and Carli 2003; Dezsö and Ross 2012). Third, family firms are a distinct organizational form where noneconomic factors play a pivotal role in the managerial choices made by the firm (Gómez-Mejía et al. 2007, 2011; Bammens et al. 2011). Hood (2003) states that transformational leadership underlies morality-based values, personal values, and social values considerably more than transactional leadership does. Finally, socioemotional wealth preservation in family firms becomes noteworthy when considering differences in the leadership style between women and men. Indeed, transformational leaders may disseminate the values and other elements of the family culture more effectively, and concomitantly stimulate followers' commitment to the firm's mission and objectives (Vallejo 2008, 2009).

The French stock market is dominated by the presence of family-controlled firms (La Porta et al. 1999; Faccio and Lang 2002; Sraer and Thesmar 2007; Boubaker and Labégorre 2008). These studies report that the proportion of family firms listed on the French stock market is one of the highest in the world, at more than 70 % (La Porta et al. 1999). Studying female leadership in the French context provides an interesting institutional setting for empirical analysis. We consider women's leadership as endogenously

² <http://ec.europa.eu/justice/newsroom/gender-equality/news/140924en.htm>.

determined by family ownership and by several variables related to firm governance, ownership patterns, and other characteristics. We tackle the endogeneity effect by using an appropriate econometric specification. We also apply a propensity score matching approach to produce approximately unbiased estimates of the treatment effect. Two matching specifications are performed. The first one is intended to match family firms with nonfamily firms that are similar in terms of having a woman occupy the CEO and Chair positions and regarding all other characteristics considered in our study (ownership, governance, size, industry, etc.). This analysis serves to illustrate whether family and nonfamily firms exhibit intrinsically different performance regardless of the role of women leaders. The second specification consists in matching family firms with and without women in top leadership positions. The aim of this matching is to separate the effects of family ownership on performance from the effects of female leadership on performance.

Starting from a sample of 394 French firms for the period of 2001–2010, we find major discordances between women CEOs' management style and family business expectations relative to firm performance, as measured by return on assets and Tobin's *q*. Based on the fact that transformational leadership is more relevant for female leaders (Rosener 1990; Druskat 1994; Bass et al. 1996; Bass 1999; Eagly and Carli 2003; Eagly et al. 2003; Dezsö and Ross 2012; Bark et al. 2015), our results support the contingency theory of leadership, which states that the effectiveness of leadership style varies according to the kind of organization and culture and the requirements of the leader's position. In concrete terms, we find that female CEOs perform better in nonfamily businesses. This may result from the fact that they are more likely to exhibit a directive and task-oriented style that embraces the needs of the CEO position (Wu et al. 2010; Zhang et al. 2015). Conversely, we find that hiring women as board Chairpersons is more valuable for family firms than for their nonfamily counterparts. A plausible explanation for this is that female Chairs tend to use a transformational leadership style (Druskat 1994; Bass et al. 1996; Eagly and Carli 2003; Eagly et al. 2003; Dezsö and Ross 2012), and thus disseminate the owning family's values and culture more effectively (Vallejo 2008, 2009).

The remainder of this paper is organized as follows. First, we address our theoretical background by developing the rationale behind the argument that the management styles of CEOs and Chairs are quite different. They hence seek to mobilize different skills and behaviors. These differences are more prevalent in gender and family patterns. Then we describe the data and methodology and analyze the related results. Finally, we conclude and outline important implications for governance in family businesses with respect to gender leadership.

Theoretical Background and Hypothesis Development

CEO and Chair Roles: Transactional Versus Transformational Leadership

Although several prospective studies deal with the composition and effectiveness of the board of directors, the board is still considered a 'black box' (Daily et al. 2003; Gabrielsson and Huse 2004; Hambrick et al. 2008). Analyzing more proximal outcomes is a promising approach for future research (Huse et al. 2011). Regarding board leadership, the question is often reduced to whether or not to separate the roles of CEO and board Chairperson; many discrepancies around the boundaries between the roles of Chair and CEO remain. Moreover, as highlighted by McNulty et al. (2011), surprisingly scant research exists on the governance implications of separating those roles. Focusing on good governance practices, agency theory advocates that the responsibilities of Chairperson and CEO be separated to promote a balance of power (Fama and Jensen 1983).

Although supporters of separate CEO and Chair roles focus mainly on the need for independent monitoring by the board, empirical research has not yielded strong results to support this, in terms of improving either board effectiveness or firm performance (Daily and Dalton 1997; Daily et al. 2003). The board's ability to work together as a team and the leadership role and skills of both the Chair and the CEO are more critical dimensions of effective firm performance (Leblanc 2005; Levrau and Van den Berghe 2013).

The primary role of the CEO is to manage the company. Specifically, CEOs hold a full-time post, and are responsible and accountable for operational activities, for setting and implementing corporate strategy, and ultimately for firm performance. They focus on decision management, which refers to the rights to initiate and implement recommendations for resource allocation (Cadbury 1992). In contrast, the primary role of the Chair is to run the board. The Chair is viewed as a part-time, independent position, and is responsible for ensuring that the board works effectively. Chairs contribute to board effectiveness by promoting board member participation, monitoring executives' performance, and managing board dynamics (Machold et al. 2011).

Differences in functions between the CEO and Chair positions imply differences in terms of leadership style. First, being a leader of a board is much more complex and challenging than individual CEO leadership, which is sustained by centralized power (Levräu and Van den Berghe 2013). Gabrielsson et al. (2007) state that the Chairperson is part of the board of directors but has no

statutory position. Within the board, all directors have identical legal responsibilities; the Chairperson is no more equal than any other member. Chairs' authority is simply derived from that of the firm's board of directors. They are chosen from among and by the directors to lead the board. Accordingly, unlike the CEO, the board Chair is not at the top of any decision hierarchy (Gabrielsson et al. 2007).

Second, a Chairperson has to cope with the complexities of an effective group acting together as a college. Roberts et al. (2005) assert that the role of the board Chair is vital to the engagement of the board's members and to the framing of the board's culture. Given that the board is a social system with a mix of personalities, skills, and motivations, the way the Chairperson impels the members to engage individually and collectively in board task performance is of great interest (Pettigrew and McNulty 1998; Huse 2007). Consequently, the Chairperson faces two opposing challenges. On the one hand, Chairs have to stimulate candid discussion, to encourage directors to speak up and express their opinions. On the other hand, board Chairs have to manage conflicts and to resolve apparent paradoxes inherent in board decision-making by exploiting the value of diversity of opinions and maintaining coherence on the board (Daily and Dalton 1997; Levrau and Van den Berghe 2013). The assumption underlying the installation and operation of a board is that the company needs a collegial body at its head, which strives to make decisions based on consensus. Accordingly, Chairs play a decisive role in promoting a cooperative attitude between the members, implementing collegial decision-making, and unifying the team around common goals and outcomes (Machold et al. 2011).

Third, in respect to the CEO and others executives, the Chairperson and the board members have two primary roles: (1) monitoring and (2) providing competence, advice and expertise (Corbetta and Salvato 2004; Bertrand and Schoar 2006; Bammens et al. 2011; Gómez-Mejía et al. 2011). The board's control task, which is mainly grounded in agency theory, means that the board of directors is viewed as a central internal control mechanism aimed at mitigating moral hazard problems in firms (Fama and Jensen 1983). Thus, having delegated the daily management function to the executives, the board and Chair's role should involve monitoring and evaluating the performance of these executives, including that of the CEO (Cadbury 1992). As part of this monitoring role, Chairs exert oversight over corporate managers so that they can detect and discipline managerial inefficiencies and misconduct (Baliga et al. 1996). The Chair's ability to control the CEO and other executives enhances effective management and the company's performance (Pearce and Zahra 1992). In contrast, the board's advisory task, as highlighted by stewardship theory, stresses the value of board activities in

providing advice (Corbetta and Salvato 2004; Bammens et al. 2011). Bammens et al. (2011) accord two advisory subtasks to the board. The first is related to offering management complementary expertise. Thus, the board Chair, like any member, has to bring professional competencies, skills experiences and knowledge (Gabrielsson and Huse 2005; Huse 2005). The board's second advisory subtask is related to mediating and resolving conflicting interests that arise around goals and strategies (Lester and Cannella 2006). Thus, Chair and board members can contribute to building consensus by establishing more objective discussions and promoting more balanced perspectives (Corbetta and Salvato 2004).

CEO Leadership Style

Leadership theory concentrates on understanding how certain leaders are better equipped to elevate a follower's motivation and performance to higher levels of accomplishment (Bass 1985). The literature suggests a variety of leadership behaviors that are important for a firm. Hart and Quinn (1993) maintain that CEOs play four roles involving different duties in the organization. The four roles are vision setter, motivator, analyzer, and taskmaster. First, as a vision setter, the CEO has to state a firm's basic purpose and future direction without neglecting social, economic, and technological trends. To achieve this role successfully, the CEO must, as a motivator, inspire followers to reach the organization's goals and, as an analyzer, focus on efficient management practices. Finally, as a taskmaster, the CEO has to lead subordinates' decisions and allocate resources to the highest-priority activities (Tsui et al. 2006). An effective CEO might be able to play all four roles simultaneously. Tsui et al. (2004) identified a set of relevant leadership behaviors for executive leaders. They found six CEO leadership dimensions, five of which have their conceptual parallels in the four executive roles (vision setter, motivator, analyzer, and taskmaster) developed by Hart and Quinn (1993). The sixth dimension is related to authoritarian behavior. The authors found that authoritarian behavior is negatively correlated with the other five dimensions. Indeed, the CEO is the leader of the company's executive group in everyday company settings (Gabrielsson et al. 2007). Therefore, CEOs have greater autonomy and are freer to use the power of their position to influence their subordinates (Tsui et al. 2006). CEOs thus engage in a transaction with their subordinates by clarifying responsibilities to executives, monitoring their work and managing performance-based incentives.

Leaders who place greater weight on economic values are perceived by their followers as exhibiting autocratic leadership (Bass 1985; Hood 2003; de Luque et al. 2008; Ng and Sears 2012). Such a leadership style fits with the

traditional and hierarchically organized transactional style that focuses mainly on day-to-day operations (Burns 1978; Bass 1985; Gabrielsson et al. 2007). Indeed, transactional leadership is purportedly based on exercising bureaucratic authority and legitimate power in the firm (Bass 1985; Hood 2003; Ng and Sears 2012). Transactional leaders tend to place strong emphasis on following the rules, and therefore may be more inclined to manage diversity to avoid punishment for noncompliance with legal standards (Hood 2003; Ng and Sears 2012). Transactional leadership implies that followers act in accordance with the leader in exchange for praise and reward. In its active form, this style of leadership implies that besides their monitoring role, leaders should be able to take corrective action as required. In its passive form, the leaders take action (or not) after problems are detected. Such passive leaders do not apprise followers of the goals and standards to be reached (Bass et al. 2003).

Transactional leadership is most often contrasted with the transformational leadership model; it comprises two parts (Wu et al. 2010). One part is group-focused transformational behaviors and includes leadership that transforms followers' values and inspires them to pursue a collective vision of the future. Such behavior motivates all members of the group to perform beyond their expectations (Bass 1985; Burns 1978). The second part is individual-focused transformational behaviors, which suggest that leaders exhibit differentiated leadership toward their individual followers. The tenet of differentiated transformational leadership argues that the effective leader tries to recognize the individual needs and capabilities of each member rather than considering the management team's competencies as a whole (Wu et al. 2010; Zhang et al. 2015). However, differentiated transformational leadership can impede the behavioral integration and dynamics of the top management team. As a result, CEOs who exhibit transformational leadership will likely behave in a differentiated manner and hence may have detrimental effect on organizational effectiveness (Wu et al. 2010; Zhang et al. 2015).

Chair Leadership Style

The investigation of board leadership also led us to define board Chairperson leadership efficacy as a determinant of constructive team production in the boardroom. As other scholars have emphasized in theoretical reviews, the Chairperson's leadership efficacy can be a determinant of engaged boards (Leblanc 2005) and can facilitate board members' involvement in strategy by creating a positive board climate where all board members are encouraged to contribute (Gabrielsson et al. 2007). Accordingly, the Chairperson is expected to lead the board in order to

promote a cooperative attitude among members, and to coalesce the team around common goals and outcomes (Machold et al. 2011). Hence, the Chairperson's role can be portrayed as that of a leader of an elite group of individuals whose competencies and knowledge need to be coordinated, integrated, and developed toward team effectiveness (Wu et al. 2010). Chairs consequently require critical competencies and skills in leading team face-to-face meetings, especially when the team members work on multifaceted and complex tasks. A Chair's leadership skills determine how effectively board members perform their duties (Gabrielsson et al. 2007). Specifically, because the Chair is part of a team of equal colleagues, the absence or the alleviation of authority differences between the board members creates a team environment, which makes the prevalence of transformational leadership more likely, but also more desirable (Vandewaerde et al. 2011).

Transformational leaders attempt to raise the needs of followers and promote dramatic changes in individuals, groups, and organizations (Burns 1978). They identify and fulfill the true needs of followers and take them to a higher level. They articulate a realistic vision of the future that can be shared, stimulate subordinates intellectually, and pay attention to differences among subordinates (Bass 1985). Transformational leadership enhances followers' effectiveness by stimulating them to accomplish their tasks in compliance with values and high moral standards that guide their performance (Avolio 1999). Thus, the Chair's contribution to board effectiveness notably emerges in promoting participation, respecting role delineation, and managing boardroom dynamics. Such a leadership style has been demonstrated to result in more effective board performance and can thus be regarded as a relevant practice (Pearce and Manz 2005).

Furthermore, as noted above, the boards have to fulfill service and advisory tasks to top management in addition to monitoring tasks (Corbetta and Salvato 2004; Gómez-Mejía et al. 2011; Bammens et al. 2011). Therefore, the duties of the board Chair are not only those of hiring, firing, and compensating top managers but also include developing initiatives and managing team dynamics. The chairperson, being a leader of a board, has to exhibit skills in encouraging board members to provide team management with complementary expertise, professional competencies, and knowledge and to mediate and resolve conflicting interests that arise around goals and strategies (Corbetta and Salvato 2004; Lester and Cannella 2006; Bammens et al. 2011).

In line with these arguments, we acknowledge the importance of both Chair and CEO behaviors. However, we argue that their task-related positions are quite different and hence require different leadership skills (Leblanc 2005; Gabrielsson et al. 2007; Vandewaerde et al. 2011; Levrau

and Van den Berghe 2013). If Chairpersons are more likely to play a decisive role in the development of transformational leadership in the boardroom, CEOs, in contrast, exhibit a transactional leadership style of team management.

CEO and Chair Leadership Style: Does Gender Matter?

Contingency theory of leadership states that the appropriate leadership depends on whether the leader is task-oriented or relationship-oriented. We test this assertion on two leader positions, rarely granted to women: CEO and Chair. The decision to hire a female or male top manager is not inconsequential. Many studies address the distinctive leadership styles of women (Bass 1985; Rosener 1990; Eagly et al. 2003; Eagly and Carli 2007; Bark et al. 2015). Female leaders are thought to exhibit an interactive and democratic style of leadership conducive to transformational leadership, whereas male leaders putatively exhibit a directive and task-oriented style more conducive to transactional leadership. Obviously, the CEO and board Chair functions should be considered separately, notably when dealing with gender management styles (Eagly and Carli 2003).

Female Chair Leadership

In most studies of the relationship between female top management and firm performance, the issue of leadership is generally reduced to the CEO position (Smith et al. 2006; Bennedsen et al. 2007; Adams et al. 2008; Dezsö and Ross 2012). As stated above, the quality of Chairperson leadership is essential for board effectiveness (Gabrielsson et al. 2007) because the role of board Chair is vital to the engagement of the board's members and to the affirmation of the board's culture (Roberts et al. 2005). Kramer et al. (2006) find that women do make a difference in the boardroom. Female Chairs bring a collaborative leadership style that benefits boardroom dynamics by increasing the amount of listening, social support, and win-win problem-solving. Hence, they may improve decision-making by bringing different perspectives and opinions into discussions that are focused on objective facts (Nielsen and Huse 2010; Wang and Kelan 2013), and by being better prepared for board meetings than men (Huse and Solberg 2006). In short, the female leadership style may improve board behavior and effectiveness simply because women leaders tend to exhibit more transformational leadership than men leaders. The female leadership style is thus more consistent with the Chair position than the male leadership style is. Eagly and Carli (2003) suggest that the female leadership

style is more effective in the contemporary business environment. They also note that due to the glass ceiling phenomenon, women must demonstrate extra competence to reach managerial positions and corporate boards. Rosener (1990) states that female leaders are more flexible and better able to deal with ambiguity than male leaders are. These abilities are essential factors for the success of any modern business in an uncertain context (Eagly and Carli 2003).

Based on the reasoning above, we expect a positive relationship between the hiring of female board Chairpersons and firm performance.

Hypothesis 1 There is a positive relationship between hiring a female Chair and firm performance.

Female CEO Leadership

Research has shown that men are more effective when the leadership role requires more masculine or autocratic leadership. However, when interpersonal ability or more social roles are called for, women leaders are seen more favorably (Eagly et al. 1995; Eagly and Karau 2002). For example, women are expected to behave in a friendly, kind, cooperative, and democratic manner, whereas male leaders are expected to exhibit agentic qualities (assertive, masterful, and instrumentally competent). Thus, differential effects may emerge when men and women hold a top management position (Eagly and Karau 2002) such as CEO. First, the difference in the use of power between the female leadership style and the prevailing power culture at the top management level (such as CEO) may be problematic. Women arguably hold a less powerful position in the status hierarchy (Druskat 1994). Similarly, women's lack of confidence in their skills fits poorly with the traditional and hierarchically transactional style (Bass 1985), which tends to mark the CEO's leadership. Consequently, if female leaders deliberately avoid transformational leadership by being more directive and transactional, to better match the CEO position, they may encounter negative reactions when exhibiting autocratic leadership (Eagly and Karau 2002; Zhang et al. 2015).

Several studies demonstrate the irrelevance or underperformance of women CEOs relative to their male counterparts. The event study of Lee and James (2006) shows that firms announcing the appointment of a female CEO display a negative abnormal return of 3.7 %, which implies that markets react negatively to the appointment of female CEOs. Dezsö and Ross (2012) maintain that only women's participation in management below the CEO level improves performance. Kolev (2012) also finds that female CEOs underperform their male counterparts in terms of shareholders' returns. Outstandingly, Zhang et al. (2015)

report that female CEOs' differentiated transformational leadership (ability of leaders to vary their behavior on the basis of followers' individual differences and contextual factors), compared to that of male CEOs, is more strongly negatively related to both top team management effectiveness, as perceived by board members, and subsidiary firm performance, as measured by the extent to which a subsidiary attained its important objectives. For instance, if a female CEO purposely develops different relationships with the top executives of the management team (providing special support to certain members), such behaviors may be seen as assertive and manipulative, which is incongruent with female gender expectations (cooperative). The negative effect of differentiated leadership on management team effectiveness and organizational performance will then be amplified (Zhang et al. 2015). Female leadership may also result in opposing opinions and consequently in internal conflicts that disrupt decision-making processes and undermine team performance (Dezsö and Ross 2012).

Combining all these lines of arguments, it might be expected that women CEOs would be less effective leaders than men because they are less likely to use the transactional leadership style that meets the needs of the CEO position.

Hypothesis 2 There is a negative relationship between hiring female CEOs and firm performance.

Women's Leadership Style: Difference Between Family and Nonfamily Firms

Scholars studying the management of family firms increasingly advocate capturing the emotional connection that family owners feel with their firms and dealing with the impact of the family's affective stock on the moral, psychological, behavioral, social, and cognitive aspects of managing the business (Duh et al. 2010; Bammens et al. 2011; Gómez-Mejía et al. 2011). Indeed, family and nonfamily firms are distinct organizational forms offering different climates for the exercise of leadership functions. Following the contingency theory of leadership perspective, we posit that the transformational leadership style, most often attributed to women, is not consistently effective regarding the leadership positions (CEO or Chair), for both family and nonfamily firms.

Female Chair Leadership in Family Firms

The prevalence of socioemotional wealth in family firms tends to affect the role and behavior of the board (Bammens et al. 2011; Gómez-Mejía et al. 2011). Based on some characteristics of family businesses such as family involvement in management choices, strong firm

identification, and personal and social fulfillment, scholars have predicted the relative prevalence of "board advice" vs "board control" (Bammens et al. 2011; Corbetta and Salvato 2004; Miller and Le Breton-Miller 2006; Miller et al. 2008). In family business, the board of directors supports, or at least does not interfere with, the family's objectives (Lester and Cannella 2006; Gómez-Mejía et al. 2011).

Various scholars have emphasized the role of independent boards in reducing information asymmetries and setting limits on family owners' discretion (Schulze et al. 2001; Anderson and Reeb 2004; Gabrielsson and Huse 2005). However, many scholars reported the preponderance of family members or their representatives in relation to board outsiders (Schulze et al. 2001; Anderson and Reeb 2004; Villalonga and Amit 2006). Even when board outsiders exist in family firms, they are a minority and they tend to have a close relationship with the CEO and the family owners (Gabrielsson and Huse 2005), increasing the board's loyalty to the CEO (Westphal 1999). The prevalence of family members or their appointees on a board is therefore a clear signal that family firms are reluctant to cede control to boards (Daily and Dollinger 1992). In addition, when seeking outside directors for their boards, family firms will select those whom they are able to trust and with whom they share interests and strategic orientations (Lester and Cannella 2006). Trusted advisors may moderate family conflicts by acting as impartial third parties in resolving disputes among family members (Lester and Cannella 2006).

Trust plays a crucial role in establishing open advice interactions and effective conflict mediation, particularly in family businesses, which are greatly concerned about their privacy (Lester and Cannella 2006). Therefore, board Chairs in family firm must focus on performing advisory rather than monitoring tasks. As discussed above, the first advisory task of the board is to enlist Chairpersons to stimulate competencies of board members and to bring professional skills, complementary expertise, experiences, and knowledge to the management of the family firms (Gabrielsson and Huse 2005; Huse 2005; Bammens et al. 2011). The board's second advisory task inspires Chairs to help others to ensure their consensual role by mediating and resolving conflicting interests related to goals and strategies (Bammens et al. 2011; Lester and Cannella 2006). Thus, board Chairs must exhibit a leadership style that stimulates members' competencies in establishing more objective discussions and promoting more balanced perspectives (Corbetta and Salvato 2004).

In family firms, female chairs are more able to bring a collaborative leadership style that benefits boardroom dynamics, than they do in nonfamily firms. Indeed, the prevalence of board advisory tasks in family firms and family socioemotional wealth offer women a more

appropriate climate for exercising the function of Chair by increasing the amount of listening, social support, and win-win problem-solving. Hence, female Chairpersons may improve decision-making process and management skills by their ability to bring different perspectives and opinions into discussions that are focused on objective facts (Nielsen and Huse 2010; Wang and Kelan 2013). In sum, the female leadership style may improve board advisory tasks and effectiveness in family firms simply because women leaders tend to exhibit more transformational leadership, than men leaders, that embraces family business needs and characteristics (Vallejo 2008, 2009).

Hypothesis 3 Regarding female Chair positions, family firms outperform nonfamily firms.

Female CEO Leadership in Family Firms

Hypothesis H2 posits a negative relationship between hiring female CEOs and firm performance. We have based this hypothesis on the argument that the traditional and hierarchically transactional style necessary for the exercise of CEO function is less suited to women than to men (Wu et al. 2010; Zhang et al. 2015). Unlike the Chairperson, the CEO needs a transactional leader to handle day-to-day tasks (Burns 1978; Bass 1985; Gabrielsson et al. 2007). Transactional leadership serves as the foundation for leaders seeking to exercise their authority and legitimate power in the firm (Bass 1985; Hood 2003; de Luque et al. 2008; Ng and Sears 2012) to maximize their influence on their followers' commitment (Bass et al. 2003). This argument implies that individuals showing high levels of transactional leadership behavior are more likely to succeed at the CEO position.

However, the challenges related to the appointment of women to the CEO position may be quite different between family and nonfamily firms because the management style in family businesses is closer to transformational leadership than to transactional leadership (Vallejo 2008, 2009). Studies of family businesses in different empirical settings have identified the need to examine actors' behaviors where nonfinancial goals are important, and not just financial shareholder value (Gómez-Mejía et al. 2010; Zellweger et al. 2010). Female leadership seems to fit the needs and characteristics of family business perfectly, because women are more likely to exhibit transformational leadership than men (Rosener 1990; Druskat 1994; Bass et al. 1996; Bass 1999; Eagly and Carli 2003; Eagly et al. 2003; Dezső and Ross 2012; Bark et al. 2015). Transformational leaders disseminate the owning family's values and culture more effectively, while getting their followers to commit themselves firmly to the mission and objectives of the organization (Vallejo 2008, 2009). Thus, it seems

that female CEOs may encounter fewer obstacles in the exercise of their functions in family firms than in non-family firms.

Female CEOs' noneconomic orientations are indeed facilitated by the composition of the board of directors in family firms. Using the contingency perspective, Corbetta and Salvato (2004) highlight that board composition is related to variables that simultaneously define different family business types, and that relevantly determine governance needs. In family firms, female CEOs might also appreciate that the main function of the board is to advise, rather than to urge managers to improve financial performance (Schwartz and Barnes 1991). Such behavior facilitates the alignment of interests and cooperation between owners and managers in family firms (Bertrand and Schoar 2006). In family firms, outside directors are more concerned about giving valuable advice on strategic firm interest rather than exercising narrow control over executives (Lester and Cannella 2006).

In family firms, CEOs must deal with at least two social groups: family and nonfamily managers/employees, which results in more complex conflicts than in nonfamily businesses (Schulze et al. 2001; Zhang et al. 2015). As transformational leaders, female CEOs tend to manage these conflicts in a less hierarchical and more interactive style than their male counterparts by increasing the amount of listening, social support, and win-win problem-solving, which results in more teamwork, collaboration, intrinsic motivation, and creativity (Eagly and Carli 2003; Dezső and Ross 2012). The attributes of transformational CEOs can increase social integration in team management (Ling et al. 2008). Indeed, transformational leaders who exhibit concern for followers' welfare, needs, and job security can strengthen the emotional bond with their followers, and hence raise levels of trust (Avolio 1999; Zhu et al. 2013). Trust is an important mechanism that translates transformational leadership into positive work outcomes for the organization such as improving organizational commitment and job performance (Bass and Avolio 1993; Zhu et al. 2013). By focusing on followers' development and well-being, transformational CEO may be more likely to provide hands-on training to family executives by acting as a coach or a mentor (Bass 1985; Bass and Avolio 1999).

Using an agency approach, many authors have predicted that family firms are more risk averse and conservative in making business decisions than are nonfamily firms (Gómez-Mejía et al. 2007). Family owners invest their wealth mainly in a single enterprise; the family's welfare would be severely affected if risky choices fail (Gómez-Mejía et al. 2007, 2011). Transformational CEOs tend to balance the interests of the family and the company's strategic choices by mitigating the management team's reluctance to pursue growth opportunities with reasonable

risks (Amabile et al. 2004; Ling et al. 2008). Specifically, transformational CEOs tend to communicate inspirational messages that stimulate the sense of challenge in team members to think outside of the box and instill in them the confidence that obstacles can be overcome (Bass 1985; Ling et al. 2008).

In line with the contingency theory of leadership, we expect that women CEOs in family firms would be more effective because they encounter fewer constraints in exercising their job and are more likely to use the style that both matches family business characteristics and tends to generate better outcomes. Conditional on affirming Hypothesis 2, the negative effect of women CEOs on firm performance will be more mitigated in family firms than in nonfamily firms.

Hypothesis 4 The negative effect of women CEOs on firm performance will be lesser in family firms than in nonfamily firms.

Data and Methodology

Data

Our basic sample comprises all companies of the CAC All-Shares index listed on Euronext Paris whose annual trading volume exceeds 5 % of their share capital, regardless of market capitalization. The CAC All-Shares Index serves as a useful benchmark for performance comparisons because it comprises all firms listed on the stock market, including both large and small companies from all sectors and classes. Our analysis is conducted during the period of 2001–2010. We begin our sample in 2001 because of the lack of corporate governance data in earlier periods.³ In December 2010, the CAC All-Shares index comprised 511 companies.⁴ Given the initial population, we remove financial and real estate companies, foreign firms, and those with missing corporate governance and/or financial data. After imposing the above data restrictions and requiring firms to have data on governance and ownership, the final sample consists of 394 firms covered over a 10-year period, for a total unbalanced panel of 3150 firm-years. Accounting and financial data are provided by the Thomson Datastream. Data on ownership are provided by the Thomson One Database. Variables on board

characteristics are collected from annual reports. Variables on women CEOs and women Chairpersons are principally collected from annual reports, and supplemented and cross-referenced by information provided by www.whoswho.fr and www.dirigeant.societe.com.

Classification of Family Firms

Following the methodology of Faccio and Lang (2002), Boubaker and Labégorre (2008), and Gomez-Mejia et al. (2010), we classify firms as family firms when (1) the ultimate controlling shareholder with at least a 10 % equity stake is a family and (2) at least one member of the controlling family is on the board or is involved in top management. In line with Faccio and Lang (2002), we also consider multiple control chains and cross-holdings. Considering the ultimate controlling shareholder is necessary in our study given that French firms are often controlled through a pyramidal structure (Boubaker and Labégorre 2008). Under this definition, 74.18 % of our sampled firm-years (3150 observations) are classified as family-controlled firms. This proportion is near those reported for France by most studies (Faccio and Lang 2002; Sraer and Thesmar 2007; Boubaker and Labégorre 2008). Faccio and Lang (2002) find that 70.92 % of French listed firms are family controlled. Boubaker and Labégorre (2008) examine a sample of 393 firms over the two-year period 1999–2000, and find a proportion of 70.37 % of family-controlled firms. Sraer and Thesmar (2007) consider the threshold of more than 20 % of voting rights and classify 70 % of their 2973 observations over the period of 1994–2000 as family firms.

Variables

Following several studies on family and leadership patterns (e.g., Anderson and Reeb 2003, 2004; Maury 2006; Villalonga and Amit 2006; Dezsö and Ross 2012), we consider two proxies of firm performance: Return on assets and Tobin's q. Return on assets is an accounting proxy of firm performance. Defined as the ratio between net operating profit and total assets, it measures the efficiency of assets in producing income. Tobin's q is a market-based measure of firm performance that incorporates potential growth opportunities and future operating performance (Anderson and Reeb 2004; Villalonga and Amit 2006).

Two opposite arguments have led researchers to hypothesize reverse causality between female leadership and firm performance. The first argument is supported by the “glass cliff” thesis, which refers to situations where women CEOs are more likely to be appointed to head distressed firms (Ryan and Haslam 2009). The second and opposing argument, put forth by Dezsö and Ross (2012), is

³ The ‘New Economic Regulations (NER)’ Act of May 15, 2001 recommended rules for corporate objectives, structure, including board composition and committee structure, roles of directors and shareholders in control transactions, and tender offers.

⁴ Our sample includes companies that existed on December 1, 2010 and excludes those that existed at any prior year during our sample period but that were deleted.

that more prosperous firms seeking legitimacy or more efficiency in utilizing excess resources tend to respond to pressure in order to conform to the aspirational norm of gender diversity. Adams et al. (2008) reject the myth of the “glass cliff” effect by investigating female leadership appointments in US firms over the 1992–2004 period. They find that women tend to be hired to CEO positions when performance is good. Dezsö and Ross (2012) also report a positive and significant impact of the lagged value of Tobin’s *q* on female representation in top management.

Dyer (2006) explains the mixed results regarding “family effect” by the fact that the research has largely ignored the industry, governance, and other characteristics of the firm. We consider three groups of control variables that serve to differentiate family and nonfamily firms and that are known to influence both women’s leadership and firm performance. The first group consists of variables related to ownership patterns. The second group includes board characteristics. The last group involves financial and other features of the firm. We also control for industry and year effects by adding their relative dummy variables in our model.

Although the relationship between the scope of institutional ownership and a firm’s propensity to have a female CEO or female Chairperson has not been investigated, institutional ownership appears to be an important driver because it is related to risk taking. Institutional investors wield the power to shape firms’ management policies (Parrino et al. 2003) and to affect gender in top management. Family firms are vulnerable to agency costs induced by the risk of expropriation of minority shareholders by controlling family shareholders (La Porta et al. 1999; Burkart et al. 2003; Anderson and Reeb 2004; Villalonga and Amit 2006; Braun and Sharma 2007). France is characterized by less effective legal protection for shareholders (La Porta et al. 2000), which affects the extent of expropriation opportunities and encourages the proliferation of related-party transactions (Nekhili and Cherif 2011). Employees may face the same risk of expropriation. Burkart et al. (1997) argue that families may redistribute rents from employees to family members, which can adversely affect employees’ productivity. Given the skills attributed to women in management roles (shared leadership, conservatism, risk aversion, ethical behavior, etc.), and their aptitude to make more cautious and conservative decisions related to financial reporting practices (Krishnan and Parsons 2008), hiring women to the top management positions could provide better protection of the rights of minority shareholders (individual and employee shareholders) and allay their concerns regarding the threat of family insiders.

Governance mechanisms operate differently when firms are privately owned and family managed (Schulze et al. 2001). Several studies highlight differences relating to

board composition and board effectiveness between family and nonfamily firms, with smaller and less active boards and fewer seats attributed to independent directors in family firms (Schulze et al. 2001; Anderson and Reeb 2004; Villalonga and Amit 2006). However, boards of family firms are obviously more gender diversified (Nekhili and Gatfaoui 2013) and should have less CEO duality (Braun and Sharma 2007).

For the remaining control variables, a negative association between leverage and women in top management is expected for two reasons. First, female CEO-led firms are less likely to issue debt than are male-led firms (Huang and Kisgen 2013). Second, Bosse and Taylor (2012) advance that gender stereotypes associated with women in top management positions also impair creditors’ ability to extend loans to women-led firms. Moreover, Gomez-Mejia et al. (2010) argue that families may find it more attractive to diversify in local areas where they can take advantage of their experience and knowledge rather than diversify internationally. Obviously, less diversified family-owned firms should care about both market and firm-specific risk (Villalonga and Amit 2006). Francoeur et al. (2008) consider beta as a proxy of risk and the complexity of the environment in which firms operate. They conclude that firms with female executives may generate positive abnormal stock returns when operating in complex environments. Martin et al. (2009) find that firms led by female CEOs reduce risk more obviously than firms led by male CEOs, implying that financial markets perceive female CEOs to be more risk averse. Regarding firm performance, Makni et al. (2009) observe a negative effect of beta on return on assets, return on equity and market returns in the Canadian context. As do most prior studies, we control for firm size. Further, it seems easier for women to progress and to advance their careers in smaller and family firms (Curimbaba 2002). Finally, to control for possible macroeconomic events, we introduce year dummies and the industry in which each firm operates into our regression analysis.

Table 1 describes all variables considered in our study.

Model

Our study considers that both the appointment of a female CEO and the appointment of a female Chair are endogenous. The potential impact on performance of the appointment of women CEOs or women Chairs may be driven by the firms’ characteristics that affect both performance and women’s leadership. This is the classic endogeneity effect. The standard approach to deal with the endogeneity issue is the use of the instrumental variables (IV) regression method (Larcker and Rusticus 2010). The idea is to find an instrument that is simultaneously correlated with its corresponding endogenous variable (woman

Table 1 Definition of variables

Variable	Measure ^a
<i>Dependent variables: firm performance</i>	
Return on assets	Ratio of net operating income to total assets
Tobin's q	Stock market capitalization plus book value of liabilities as a ratio of total assets
<i>Endogenous variables</i>	
Woman CEO	Dummy variable equals 1 when the CEO is a woman; 0 otherwise
Woman Chair	Dummy variable equals 1 when the Chairperson of the board is a woman; 0 otherwise
<i>Ownership variables</i>	
Family ownership	Percentage of capital held by family
Institutional ownership	Percentage of capital held by institutional investors
Employee ownership	Percentage of capital held by employee shareholders
Minority ownership	Proportion of shares owned by minority (individual) shareholders
<i>Governance variables</i>	
Board size	Natural logarithm of the number of directors on the board
Board independence	Ratio of number of nonexecutive independent directors to total number of board directors
Board meeting	Natural logarithm of the number of annual board meetings
CEO duality	Dummy variable coded 1 if the CEO serves as board Chair; 0 otherwise
Women directorship	Proportion of women on board
<i>Other control variables</i>	
Leverage	Ratio of total financial debt to total value of assets
Foreign assets	Ratio of foreign assets to total assets
Beta	Equity beta
Firm size	Natural logarithm of total assets
Industry	Binary variable that takes the value of 1 if the company belongs to the sector in question and 0 otherwise. The industry classification is based on the Industry Classification Benchmark (ICB) developed in January 2005 by Dow Jones and FTSE and used by Euronext since 2006

^a Variables from ThomsonOne are winsorized at the 1 and 99 % levels

CEO or woman Chair) and uncorrelated with the dependent variable (performance). Consistent and efficient coefficients can be obtained by using the lagged levels of the endogenous variables as instruments (Blundell and Bond 1998), notably in the case of a short study period relative to the number of individuals (Roodman 2009). Consequently, we use the Wooldridge (2002) test for autocorrelation to detect the dynamic specifications of our endogenous and dependent variables. The results of the test strongly reject the null hypothesis and indicate the presence of serial correlations of each endogenous and dependent variable. Henceforth, we use the one-year lagged value of woman CEO (*Lag* woman CEO) and the one-year lagged value of woman Chair (*Lag* woman Chair) as instruments.

For the reasons stated above, we decide to use the two-step General Methods of Moments (GMM) estimation approach following Blundell and Bond (1998). This method is also referred to as the system GMM.⁵ In the first

step, we estimate the determinants of the appointment of a female CEO and the appointment of a female board Chairperson through an auto-correlated process. In a GMM framework, the treatment of several endogenous variables of interest (woman CEO and woman Chair in our case) is less problematic than in other estimation methods. Hence, the first stage includes, in addition to the one-year lagged value of endogenous variables (*Lag* woman CEO and *Lag* woman Chair), the one-year lagged value of firm performance (to test for the “glass cliff” effect) and all control variables as defined in Table 1. We also control for industry and year effects by including industry and year dummies in our regression analysis. In the second step, we estimate the relation between performance and the presence of both a woman CEO and a woman Chair conditional on their respective endogeneity. As in the first stage, we control for industry and year effects.

⁵ The standard GMM considers only the first difference of each variable in the regressions, while the lagged levels of explanatory variables are used as instruments. Blundell and Bond (1998) introduce

Footnote 5 continued
the levels equation in the estimation procedure to produce a system GMM of two equations involving both the levels equation itself and the first-differenced equation.

First Stage

Woman CEO/woman Chair_{it} = $\alpha_0 + \alpha_1 \text{Lag woman CEO/Chair}_{it} + \alpha_2 \text{Lag Performance}_{it} + \alpha_3 \text{Family ownership}_{it} + \alpha_4 \text{Institutional ownership}_{it} + \alpha_5 \text{Employee ownership}_{it} + \alpha_6 \text{Minority ownership}_{it} + \alpha_7 \text{Board size}_{it} + \alpha_8 \text{Board independence}_{it} + \alpha_9 \text{Board meeting}_{it} + \alpha_{10} \text{Women directorship}_{it} + \alpha_{11} \text{CEO duality}_{it} + \alpha_{12} \text{Leverage}_{it} + \alpha_{13} \text{Foreign assets}_{it} + \alpha_{14} \text{Beta}_{it} + \alpha_{15} \text{Firm size}_{it} + \alpha_{16} \text{Industry_FE} + \alpha_{17} \text{Year_FE} + \xi_{it}$

Second Stage

Performance_{it} = $\beta_0 + \beta_1 \text{Lag Performance}_{it} + \beta_2 \text{woman CEO}_{it} + \beta_3 \text{woman Chair}_{it} + \beta_4 \text{Family ownership}_{it} + \beta_5 \text{Institutional ownership}_{it} + \beta_6 \text{Employee ownership}_{it} + \beta_7 \text{Minority ownership}_{it} + \beta_8 \text{Board size}_{it} + \beta_9 \text{Board independence}_{it} + \beta_{10} \text{Board meeting}_{it} + \beta_{11} \text{Women directorship}_{it} + \beta_{12} \text{CEO duality}_{it} + \beta_{13} \text{Leverage}_{it} + \beta_{14} \text{Foreign assets}_{it} + \beta_{15} \text{Beta}_{it} + \beta_{16} \text{Firm size}_{it} + \beta_{17} \text{Industry_FE} + \beta_{18} \text{Year_FE} + \xi_{it}$

Here ξ_{it} is the error term and the subscripts i and t stand for firms and time, respectively.

Results

Univariate Analysis

Table 2 provides descriptive statistics of the main variables used in the study from 2001 to 2010 for the entire sample. At both CEO and Chair levels, women are poorly represented. We observe a woman CEO in 3.63 % of cases and a woman Chairperson in 4.62 % of cases. These results are in line with previously documented statistics and trends signaling the scarcity of women-led firms in the world. We also notice that it is very infrequent to have both a woman CEO and a woman Chair in the same firm (0.61 % of cases). Parrotta and Smith (2013) report a similar result in the Danish context, with between 0.04 and 0.07 % of cases when a woman is both CEO and Chairperson. Regardless of the gender of CEO and Chair, 62.59 % of our sampled firms have CEO duality. We can therefore emphasize that, while generally allowed by French firms, CEO duality is not suitable for women.

Results in Table 2 show that sampled firms achieve an average Return on assets and Tobin's q of 2.73 % and 1.048, respectively. On average, family, institutions, employees, and individuals invest about 37, 18, 1, and 39 % in the capital of our sampled firms, respectively. Table 2 also indicates that women represent about 11 % of board members. The board size of our sampled firms is about 8 directors, with a minimum of 3 members and a

maximum of 26 members. The average proportion of independent directors is about 27 % and the number of board meetings is just over six per year. Foreign assets and leverage represent on average slightly more than 18 % and about 23 % of total assets, respectively. The average beta of sampled firms is less than 1 (0.659), indicating that the equity price of French firms tends to be less volatile than the stock market. Finally, total assets, a proxy of firm size, range from 1 million euros to 240.559 billion euros, with a mean of 4.920 billion euros.

Matching of Family Firms with Nonfamily Firms

A direct comparison of the performance between family firms and nonfamily firms is not very informative because performance might be explained by dissimilarities in characteristics between the two groups. To control for differences between family and nonfamily firms, we conduct a matched sample analysis using the propensity score matching of Rosenbaum and Rubin (1983). This methodology involves two stages. To obtain a matched sample, we first estimate a logit model in which the binary dependent variable is whether or not a firm is family controlled, as a function of women's leadership, ownership, and governance variables and other control variables as defined in Table 1. Second, each family firm is matched with a set of control firms. The control firms are nonfamily-controlled firms that have the nearest (the closest predicted propensity score) characteristics to the family firms. Bad matching occurs if the closest neighbor is far away. A tolerance is imposed on the maximum propensity score (caliper) to avoid bad matching. Using a caliper distance of 3 % without replacement,⁶ the post-match pairwise differences of the exogenous and control variables decrease in magnitude with respect to the pre-match case and become statistically nonsignificant (Table 3). Propensity score matching yields a matched sample consisting of 472 cases: 236 treatment cases (family firms) and 236 comparison cases (nonfamily firms).

Univariate Analysis

Table 3 shows strong and highly significant differences in mean for all characteristics between the family and nonfamily firms initially considered in the entire sample. Results observed for the universe entire sample and the matched sample in Table 3 highlight significant difference at 1 % with respect to the accounting performance proxy (return on assets). This result is also found by Anderson and Reeb (2003, 2004), Sraer and Thesmar (2007), and

⁶ Matching without replacement means that the same family firm can be matched to only one nonfamily firm.

Table 2 Descriptive statistics

Variables	Mean	Median	SD	Minimum	Maximum
Woman CEO	3.63 %	0	18.17 %	0	1
Woman Chair	4.62 %	0	20.99 %	0	1
Woman CEO*woman Chair	0.61 %	0	7.78 %	0	1
Return on assets	2.73 %	3.42 %	7.13 %	−29.90 %	20.70 %
Tobin's q	1.048	0.801	0.830	0.198	5.385
Family ownership	36.84 %	39 %	27.66 %	0	94.60 %
Institutional ownership	18.49 %	4.45 %	26.47 %	0	98.63 %
Employee ownership	1.28 %	0	3.73 %	0	42.77 %
Minority ownership	39.02 %	37.12 %	22.71 %	0	100 %
Board size (number of directors)	7.704	7	3.864	3	26
Board independence	27.54 %	25.00 %	25.39 %	0	94.12 %
Board meeting (number of meetings)	6.356	6	3.394	0	30
Female directorship	10.94 %	0	15.79 %	0	100 %
Dual	62.59 %	1	48.40 %	0	1
Leverage	23.21 %	21.41 %	17.23 %	0	96.15 %
Foreign assets	18.81 %	3.75 %	25.58 %	0	99.69 %
Beta	0.659	0.620	0.295	0.018	2.008
Firm size (in billions of Euros)	4.920	0.223	16.992	1	240.559

All variables are as defined in Table 1

Maury (2006) in American, French, and European contexts, respectively. Unlike Anderson and Reeb (2003, 2004), McConaughy et al. (1998), and Villalonga and Amit (2006), we find no significant difference between family and nonfamily firms regarding the market-based measure of firm performance (Tobin's q). Importantly, when we compare family firms to similar nonfamily firms via propensity score matching, we find that family and nonfamily-controlled firms have no significant difference in performance as measured by return on assets and Tobin's q. These results indicate that family firms do not exhibit intrinsically different performance regardless of the role of women's leadership and other characteristics. The difference in accounting performance (return on assets) between family and nonfamily firms for the entire sample is probably due to the overlaps between family involvement in the capital and management and the other characteristics of family firms.

The proportion of women CEOs and women Chairs is higher in family firms than in nonfamily firms. Our result is consistent with Jorissen et al.'s (2005) finding that family firms have more female CEOs than nonfamily firms do. Hence, the appointment of women as CEOs (and as Chairs) is more likely to be related to family connections than to an external process (Smith et al. 2006). We find very few cases in family firms where women hold both CEO and board Chair positions (0.78 %), and no cases for nonfamily firms. To focus separately on the role of woman CEO and woman Chair in both family and nonfamily firms, we

exclude cases of female CEO duality from the multivariate analysis. Given the very limited number of cases, this decision should not skew the results of our study.

Regarding ownership structure, we find that employee ownership is slightly more widespread in nonfamily firms. However, the proportion of employee ownership is very small (less than 2 %) in the two panels. Table 3 indicates that individual investors are more involved in the capital of nonfamily firms. Consistent with Gomez-Mejia et al. (2003) and Anderson and Reeb (2004), we also find that institutional investors are markedly less prevalent in family firms (9.66 %) than in nonfamily firms (42.31 %).

In lieu of a board of directors, Table 3 shows that the boards of family firms are on average smaller than those of nonfamily firms. This finding is consistent with the argument that boards in small (family) firms also tend to be smaller than in large firms (Gabrielsson et al. 2007). In family firms, little separation of ownership and control ostensibly exist, resulting in fewer management-board conflicts (Anderson and Reeb 2003, 2004). We also show that family firms have less active boards (as measured by the number of annual meetings) and that these boards have fewer independent members. Several studies (Schulze et al. 2001; Anderson and Reeb 2004; Villalonga and Amit 2006) report large differences in board composition between family and nonfamily firms with specifically fewer seats attributed to independent directors in family firms. However, boards of family firms are clearly more gender diversified (11.47 % of women directors for family

Table 3 Mean difference test between family and nonfamily firms for the entire sample and the matched sample

Variables	Entire sample			Matched sample		
	Family firms	Nonfamily firms	<i>t</i> value	Treatment group	Control group	<i>t</i> value
Return on assets	2.99 %	2.20 %	2.697**	1.53 %	2.32 %	1.047
Tobin's <i>q</i>	1.065	1.014	1.452	1.134	1.117	0.188
Woman CEO	5.13 %	1.19 %	4.976***	2.16 %	3.90 %	1.085
Woman Chair	5.75 %	2.02 %	4.376***	3.03 %	3.89 %	0.508
Woman CEO*woman Chair	0.78 %	0.00 %	2.581**	0.43 %	0.00 %	1.000
Institutional ownership	9.66 %	42.31 %	36.626***	25.69 %	21.44 %	1.616
Employee ownership	1.08 %	1.92 %	5.611***	1.39 %	1.74 %	1.029
Minority ownership	37.01 %	44.66 %	14.253***	43.74 %	46.80 %	1.621
Board size (number of directors)	7.271	9.317	12.256*** ^a	8.437	9.008	0.746 ^a
Board independence	25.66 %	35.12 %	9.362***	29.11 %	27.97 %	0.486
Board meeting (number of meetings)	6.228	6.893	4.796*** ^a	6.961	7.190	0.573 ^a
Female directorship	11.47 %	8.32 %	5.097***	9.29 %	9.08 %	0.163
CEO duality	56.38 %	64.67 %	4.186***	65.37 %	58.01 %	1.628
Leverage	22.54 %	24.91 %	3.401***	21.28 %	22.46 %	0.705
Foreign assets	17.30 %	25.32 %	7.763***	23.08 %	24.88 %	0.661
Beta	0.660	0.760	8.547***	0.771	0.790	0.671
Firm size (in millions of Euros)	2728	12,621	3.336*** ^a	6292	13,439	1.278 ^a
Number of observations	2340	810		236	236	

All variables are as defined in Table 1

^a *t* tests are based on natural logarithm transformed values

*, **, *** Represent significance at 0.05, 0.01, and 0.001 levels, respectively

firms compared with 8.32 % for nonfamily firms). This finding is consistent with Nekhili and Gatfaoui (2013), and suggests that the appointment of female directors is strongly related to family ownership in the French context. Table 3 shows that fewer family firms (56.38 %) than nonfamily firms (64.67 %) exhibit a dual CEO structure. CEO duality is more problematic in family-controlled firms because it exacerbates the potential lack of demarcation between management and ownership (Braun and Sharma 2007).

Regarding the other control variables, we find that family firms display a significantly lower systematic risk, as measured by beta, than do nonfamily firms. According to Gomez-Mejia et al. (2010), family firms are also characterized by less international diversification than non-family firms. Consistent with previous studies, we find that family firms are smaller according to total assets and have a lower debt ratio.

Multivariate Analysis

Based on transformational leadership theory, Hypothesis 1 posits that hiring a female Chairperson positively impacts firm performance. Conversely, Hypothesis 2 states that

women fail to adopt the transactional leadership style that is essential for fulfilling the function of CEO and hence we expect a negative relationship between hiring female CEOs and firm performance. Results for Model 1 in Tables 4 and 5 indicate that, for the matched sample, woman-led firms perform better or worse than their counterparts depending on the position considered in top management (CEO or Chair) and the proxy of firm performance used. While a woman Chair is negatively related to firm performance as measured by return on assets (Table 4), hiring a woman CEO boosts Tobin's *q* (Table 5).⁷ Although the discrepancy of these results is meaningful relative to gender management style, it refutes hypotheses 1 and 2. In addition, the stronger effect on Tobin's *q* (Table 5) compared with the coefficient of return on assets (Table 4) is particularly noteworthy. Market-based indicators reflect market expectations, and, in our case, shareholders seem to pay special attention to gender leadership style (Lee and James 2006; Kolev 2012).

Results of Model 1 in Table 4 and 5 also show a negative and significant impact of the treatment of firm

⁷ As an alternative profitability measure, we use the return on equity defined as the ratio of net income to stockholders' equity. The results using return on equity are quite similar to those using return on assets.

Table 4 System GMM regression of return on assets on woman CEO and woman Chair (with a propensity score matching)

Variables	Model 1 matched sample		Model 2 interaction woman CEO/Chair and family ownership		Model 3 treatment group (family firms)		Model 4 control group (nonfamily firms)	
	Coef	<i>t</i> test	Coef	<i>t</i> test	Coef.	<i>t</i> test	Coef.	<i>t</i> test
Lag return on assets	0.594***	23.23	0.657***	18.43	0.471***	14.36	0.566***	24.06
Woman CEO	0.013	0.57	0.177***	7.43	−0.226***	−5.58	0.096***	7.81
Woman Chair	−0.126***	−5.21	−0.048**	−2.63	0.102***	4.47	−0.154***	−7.11
Treatment (family ownership)	−0.079***	−5.82	−0.037*	−2.17				
Woman CEO*treatment			−0.323***	−4.46				
Woman Chair*treatment			0.225***	4.25				
Institutional ownership	−0.030	−1.66	−0.032	−1.41	−0.170***	−6.81	0.006	0.39
Employee ownership	−0.071	−0.70	0.119	1.54	0.292	1.74	0.082	1.88
Minority ownership	−0.020	−1.13	−0.029	−1.43	−0.158***	−6.21	−0.029*	−2.22
Board size	−0.006	−0.81	−0.018*	−2.47	−0.013	−1.43	−0.007	−0.90
Board independence	−0.001	−0.10	0.016	0.99	−0.012	−0.76	−0.012	−1.45
Board meeting	−0.019**	−3.05	−0.002	−0.26	0.016**	2.63	−0.011*	−2.42
Woman directorship	0.005	0.27	−0.028	−0.79	0.107***	3.57	−0.020	−1.08
CEO duality	0.014	1.92	0.011	1.39	−0.003	−0.40	0.003	0.57
Leverage	−0.052**	−3.10	−0.037*	−2.18	−0.084***	−4.15	−0.040**	−2.76
Foreign assets	−0.011	−0.80	−0.008	−0.54	0.014	1.17	−0.004	−0.45
Beta	−0.003	−0.23	−0.012	−1.16	−0.015	−1.21	−0.001	−0.00
Firm size	0.003**	3.08	0.003	1.87	−0.001	−0.05	0.004***	3.77
Intercept	0.063*	2.53	0.011	0.31	0.084	1.71	0.090	1.83
Industry	Yes		Yes		Yes		Yes	
Year_FE	Yes		Yes		Yes		Yes	
Number of observations	472		472		236		236	
Fisher, <i>p</i> value	3455.05 (<i>p</i> = 0.000)		97.94 (<i>p</i> = 0.000)		87.45 (<i>p</i> = 0.000)		9485.25 (<i>p</i> = 0.000)	
Sargan test (χ^2 , <i>p</i> value):	494.39 (<i>p</i> = 0.000)		162.64 (<i>p</i> = 0.000)		115.28 (<i>p</i> = 0.000)		214.83 (<i>p</i> = 0.000)	
Hansen test (χ^2 , <i>p</i> value):	69.22 (<i>p</i> = 0.220)		38.30 (<i>p</i> = 0.365)		35.18 (<i>p</i> = 0.165)		46.83 (<i>p</i> = 0.438)	
Joint-test: woman CEO + woman CEO*treatment			−0.146*	−2.10				
Joint-test: woman Chair + woman Chair*treatment			0.177***	3.72				

All variables are as defined in Table 1

*, **, *** Represent significance at 0.05, 0.01 and 0.001 levels, respectively

performance as measured by return on assets and Tobin's *q*. Having controlled for observed confounding variables via propensity score matching, these results offer strong evidence in support of the inherent negative impact of family ownership on firm performance. Family features such as nepotism, family structure, and inheritance norms may drive the performance of family businesses (Bertrand and Schoar 2006). Our result diverges somewhat from evidence that family-controlled firms may have performance advantages over nonfamily firms (McConaughy et al. 1998; Anderson and Reeb 2003; Maury 2006; Villalonga and Amit 2006; Sraer and Thesmar 2007). However, these studies do not control for observed confounding variables when comparing family firms with their non-family counterparts.

Based on contingency theory of leadership, hypotheses 3 and 4 predict that family firms outperform nonfamily firms with regard to women Chairs and women CEOs, respectively. We test these propositions using a joint-test technique to estimate the following model (Tables 4, 5, Model 2):

Firm performance = f {Women CEO/Chair, treatment, women CEO/Chair*treatment, control variables}.

Given that we aim to measure the marginal effect of (separately) hiring a woman CEO and a woman Chair on firm performance in family and nonfamily firms, the test of importance is the joint test of the sum of the coefficients on woman CEO/Chair and the interaction term (Women CEO/Chair*treatment). In Tables 4 and 5, the results of Model 2 show that the joint coefficient for woman CEO is significant and negative on both return on assets ($\beta = -0.146$,

Table 5 System GMM regression of Tobin's q on woman CEO and woman Chair

Variables	Model 1 matched sample		Model 2 interaction woman CEO/Chair and family ownership		Model 3 Treatment group (Family firms)		Model 4 control group (nonfamily firms)	
	Coef	<i>t</i> test	Coef	<i>t</i> test	Coef.	<i>t</i> test	Coef.	<i>t</i> test
Lag Tobin's q	0.437***	41.91	0.369***	35.84	0.324***	9.41	0.263***	9.71
Woman CEO	1.342***	9.98	2.458***	17.50	-2.619***	-3.98	1.692***	11.75
Woman Chair	0.178	1.55	0.091	0.67	3.186**	3.10	0.147	0.41
Treatment (family ownership)	-0.293***	-4.09	-0.076	-0.98				
Woman CEO*treatment			-4.746***	-11.60				
Woman Chair*treatment			1.023*	2.31				
Institutional ownership	-0.159	-1.19	-0.087	-0.65	-0.745	-1.88	-0.401*	-2.08
Employee ownership	-1.671**	-3.12	-0.853	-1.15	-5.743**	-2.14	-1.040	-1.73
Minority ownership	-0.456***	-4.53	0.116	0.97	-0.193	-0.66	-0.412*	-2.37
Board size	-0.023	-0.44	0.007	0.11	0.012	0.06	-0.230	-1.66
Board independence	0.201**	2.62	-0.108	-0.93	-0.478	-1.71	0.576***	4.05
Board meeting	-0.013	-0.24	0.200***	4.50	0.349	1.85	0.088	1.06
Woman directorship	-1.277***	-10.39	-1.167***	-9.37	-1.720**	-3.10	-0.736**	-2.64
CEO duality	0.273***	5.43	0.122	1.73	0.135	0.87	0.231*	2.38
Leverage	-0.646***	-5.59	-0.608***	-3.68	-1.293**	-3.27	0.193	0.64
Foreign assets	-0.226***	-4.48	-0.288***	-5.36	-0.044	-0.29	-0.079	-0.67
Beta	0.285***	7.85	0.439***	8.50	0.542**	2.63	0.089	0.69
Firm size	-0.008	-0.89	-0.020	-1.86	-0.074***	-3.34	0.008	0.60
Intercept	-0.097	-0.19	0.490	1.30	1.847	1.89	1.224*	2.27
Industry	Yes		Yes		Yes		Yes	
Year_FE	Yes		Yes		Yes		Yes	
Number of observations	472		472		236		236	
Fisher, <i>p</i> value	985.26 (<i>p</i> = 0.000)		1612.84 (<i>p</i> = 0.000)		1524.75 (<i>p</i> = 0.000)		5673.25 (<i>p</i> = 0.000)	
Sargan test (χ^2 , <i>p</i> value):	415.77 (<i>p</i> = 0.000)		408.90 (<i>p</i> = 0.000)		227.72 (<i>p</i> = 0.000)		160.96 (<i>p</i> = 0.000)	
Hansen test (χ^2 , <i>p</i> value):	88.59 (<i>p</i> = 0.135)		92.02 (<i>p</i> = 0.166)		50.41 (<i>p</i> = 0.111)		32.52 (<i>p</i> = 0.254)	
Joint-test: woman CEO + woman CEO*treatment			-2.285***	-5.37				
Joint-test: woman Chair + woman Chair*treatment			1.114*	2.14				

All variables are as defined in Table 1

*, **, *** Represent significance at 0.05, 0.01 and 0.001 levels, respectively

$t = -2.10$) and Tobin's q ($\beta = -2.285$, $t = -5.37$). Further, we find that the joint coefficient for woman Chair is significant and positive on both return on assets ($\beta = 0.177$, $t = 3.72$) and Tobin's q ($\beta = 1.114$, $t = 2.14$). This suggests that the statistically significant relationship between woman CEO/Chair and firm performance is affected by the prevalence of the family in capital and management. These results affirm Hypothesis 3 and refute Hypothesis 4.

To shed more light on these results, we split our matched sample into two groups: family firms (Treatment) and nonfamily firms (control group) with the nearest (the closest predicted propensity score) characteristics to the family firms. We test the relationship between woman

leadership and firm performance for each group (Models 3 and 4, respectively). Results for family and nonfamily are markedly different regarding the appointment of women to leader positions.

Results for models 3 and 4 in Tables 4 and 5 show that for each performance variable considered in our study (return on assets and Tobin's q), the appointment of a woman Chair is more valuable for family firms than for nonfamily firms. Specifically, in family firms we find a positive and significant relationship between the appointment of a woman Chair and each proxy of performance. In nonfamily firms, a negative and significant relationship is observed between woman Chair and return on assets. No significance is found for Tobin's q. This finding provides

additional support for Hypothesis 3. At this stage, note that the primary role of the Chair is quite different from that of the CEO because it is limited to running the board by promoting the participation of the board members, monitoring executives' performance, and managing board dynamics (Machold et al. 2011). However, as we have argued above, board Chairs in family firms have to focus on the provision of advisory tasks to top management rather than monitoring ones (Lester and Cannella 2006), and on stimulating board members' competencies to bring professional skills, complementary expertise, and experiences (Gabrielsson and Huse 2005; Huse 2005; Bammens et al. 2011). Our results indicate that women Chairpersons in family firms would be more effective leaders than their counterparts in nonfamily firms. A possible explanation is that they are more prone to use a transformational leadership style (Druskat 1994; Bass et al. 1996; Eagly and Carli 2003; Eagly et al. 2003; Dezső and Ross 2012) that embraces family business needs and characteristics. Indeed, transformational leaders disseminate the values of the family culture more effectively while promoting followers' commitment to the firm's mission and objectives (Vallejo 2008, 2009).

The relationship between the appointment of a woman CEO and performance is also meaningfully differentiating when we compare family and nonfamily firms. However, the results obtained for women CEOs are strictly opposite to what we have observed for women Chairs. Consistently, we find that the impact of the appointment of a woman to the CEO position is negative and significant on each proxy of firm performance for family firms, and is positive and significant for nonfamily firms. Our finding for nonfamily firms is consistent with that of Smith et al. (2006) and Peni (2014). The CEO position indeed needs a transactional leader in handling day-to-day tasks; this is necessary for leaders seeking to exercise their authority and legitimate power in the firm (Bass 1985; Bass et al. 2003; Ng and Sears 2012). Hence, women CEOs in family firms would be less effective leaders. This may result from the fact that they are less prone to use the transactional leadership style that embraces the needs of the CEO position. Eagly and Karau (2002) and Zhang et al. (2015) emphasize that female leaders encounter more negative reactions and can be regarded as less trustworthy in leadership roles if they exhibit less transformational leadership by being more directive and transactional. According to our result, this conjecture is more likely to hold in family firms than nonfamily firms especially if transactional leadership entails exerting control and dominance over family managers.

Nonfamily firms are more prone than family businesses to pursue economic wealth maximization (Gómez-Mejía et al. 2007). For senior executives, particularly the CEO,

the board of directors is responsible for fulfilling this function by acting as a watchdog (Dalton et al. 1998). For instance, the lack of social ties between CEO and board directors increases board involvement and firm performance (Westphal 1999). Indeed, in nonfamily firms, the board's ability to exercise effective control and to discipline underperforming CEOs (incentive control) may counterbalance differences, if any, in the leadership style between women and men in the CEO position. In contrast, in family firms, major managerial choices are driven by a desire to preserve and enhance the family's "socioemotional wealth," apart from efficiency or economic considerations (Gómez-Mejía et al. 2007). This mainly reflects the transformational leadership style of women leaders (Rosener 1990; Druskat 1994; Bass et al. 1996; Bass 1999; Eagly and Carli 2003; Eagly et al. 2003; Dezső and Ross 2012; Bark et al. 2015). In managing family businesses, women CEOs may face additional obstacles and even negatively affect the performance of these firms. CEOs' tasks seem to be more difficult in family firms than in nonfamily firms. The double role played by family CEOs (stewardship of the company and the fulfillment of family obligations) may lead to effort dilution and focus dissipation, which can impede performance (Beehr et al. 1997). Further, female CEO's noneconomic orientations are facilitated by the composition of the board of directors dominated by family members (Schulze et al. 2001; Anderson and Reeb 2004; Villalonga and Amit 2006). Family boards have fewer outside directors than do nonfamily businesses (Schulze et al. 2001; Anderson and Reeb 2004; Villalonga and Amit 2006), and are less concerned about exercising narrow control over executives (Lester and Cannella 2006). At least, they do not interfere with the family's objectives (Gómez-Mejía et al. 2011).

Two other arguments can be advanced to explain these key findings. First, gender differences in performance between family and nonfamily firms may be due to the CEO recruitment process. In keeping with the widely held view on family firms' recruitment practices (Burkart et al. 2003), the appointment of women CEOs is more likely to be related to ties to the owners' families; the CEO is selected from a smaller pool of management talent (Smith et al. 2006). Probably due to the more exacerbated glass ceiling phenomenon in nonfamily firms, women have to demonstrate extra competence to reach higher positions in the organization. They may have to work harder than men to be appointed as CEO, and therefore, at this higher top management position, are more talented and devoted than their male counterparts, which may lead to an increase in firm performance (Eagly and Carli, 2003). Second, family CEOs receive lower total income than nonfamily CEOs and their compensation is based less on firm performance (McConaughy 2000; Gomez-Mejia et al. 2003). In

exchange for lower pay, family status gives family CEOs higher job security and contributes significantly to their entrenchment, leading to sub-optimal risk taking and weaker performance (Gomez-Mejia et al. 2001). Because female CEOs are more poorly rewarded than men (Baixauli-Soler et al. 2015), women heading family businesses are likely to be less worried about performance.

Results regarding the relationship between other ownership patterns (institutional, employee, and minority) and firm performance are negative or insignificant for both family and nonfamily firms. However, the strong negative impact of employee ownership on Tobin's q for family firms ($\beta = -5.743$, $t = -2.14$) is noteworthy. This result supports Burkart et al.'s (1997) assumption that families may redistribute rents from employees to family members, which can adversely affect employees' productivity. Market participants may perceive that employees face the same risk of expropriation by family controlling shareholders and consequently consider employee ownership as less valuable.

Regarding board characteristics, we find that a more active board, as measured by the number of annual meetings, leads to a higher return on assets in family firms and to a lower return on assets in nonfamily firms (Table 4). The result for nonfamily firms is consistent with Vafeas's (1999) observation of an inverse relationship between board meeting frequency and firm performance. For nonfamily firms, we find a positive and significant association between board independence and Tobin's q (Table 5). The same result occurs for CEO duality. No significant effect is observed for independent directors on the performance of family firms, in line with the study by Villalonga and Amit (2006). Independent directors monitor less effectively in family firms because their incentives are compromised by closeness to the CEO or the organization (Schulze et al. 2001). Adams and Ferreira (2009) argue that the relationship between female directorship and firm performance is questionable. They find that more effective monitoring by female board members has a marginal positive effect in settings with weak shareholders' rights. We find that female directorship has a positive and significant impact on return on assets for family firms, albeit not significant for nonfamily firms (Table 4). Nonetheless, Table 5 shows a negative and significant impact of women directorship on Tobin's q for each group of firms, with a more pronounced effect for family firms. This result is quite similar to that of Adams and Ferreira (2009) in the U.S context. Unlike return on assets, which is indicative of accounting performance reflecting the effectiveness of the decision-making role of the board, the impact on Tobin's q reflects market perceptions of women's monitoring role in boardrooms.

The impact of beta on Tobin's q is positive and significant for family firms and not significant for nonfamily firms. This result is consistent with that of Miller et al. (2007), who report a positive and significant relationship between beta and industry-adjusted Tobin's q . Further, we find that leverage impacts the operational performance (Return on assets) of both family and nonfamily firms negatively and significantly. However, when we consider Tobin's q as a proxy of performance attributable to shareholders, the effect of leverage is negative and significant for family firms only. This result is in line with the retrospective study by Villalonga and Amit (2006), which found a negative relationship between leverage and Tobin's q in family firms. Miller et al. (2007) also report a negative relationship between debt-to-equity ratio and industry-adjusted Tobin's q . Regarding the other control variables, we did not observe significant differences across family and nonfamily firms.

Matching of Women-led Family Firms with Men-led Family Firms

The following results are specific to family firms. The descriptive statistics in Table 3 indicate that women in CEO and Chair positions are more preponderant in family firms (5.13 and 5.75 %, respectively) than in nonfamily firms (1.19 and 2.02 %, respectively). Matching women-led firms to men-led firms for the nonfamily group is thus implausible. The characteristics and the number of family firms with and without woman CEOs, on the one hand, and that of family firms with and without woman Chair, on the other hand, are very different across groups. To separate the role of woman CEO from that of woman Chair in family firms, we decided to construct two equivalent comparison groups separately.⁸ By employing a sample-matching procedure based on propensity score,⁹ we created a first control group of family firms without a woman CEO as similar as possible to family firms with a woman CEO and a second control group of family firms without a woman Chair, similar to family firms with a woman Chair. The purpose of this matching is to separate the effects on performance due to family ownership from the effects due to female leadership.

⁸ We find a few cases in family firms where a woman holds both CEO and board Chair positions (0.78 %), and no cases are observed for nonfamily firms. The case of woman CEO duality therefore cannot be considered.

⁹ As in the first matching, we use a caliper distance of 3 % without replacement.

Univariate Analysis

Panel A and Panel B of Table 6 compare continuous variables and present mean difference tests between family

firms with and without woman CEOs and between family firms with and without woman Chair, respectively. For the entire sample, large differences are observed in family firms' characteristics according to whether the firms

Table 6 Mean difference test between family firms with and without women at the top

	Entire sample			Matched sample		
	Firms with woman CEO	Firms without woman CEO	<i>t</i> value	Treatment group	Control group	<i>t</i> value
<i>Panel A: woman CEO-led firms</i>						
Return on assets	3.33 %	2.97 %	0.546	3.81 %	3.17 %	0.718
Tobin's q	0.997	1.068	0.874	1.004	1.024	0.186
Institutional ownership	6.41 %	9.82 %	2.324*	6.21 %	5.04 %	0.698
Employee ownership	0.81 %	1.20 %	0.873	0.52 %	0.46 %	0.339
Minority ownership	32.53 %	37.19 %	2.688**	33.87 %	33.29 %	0.220
Board size (number of directors)	5.830	7.351	4.778***	6.109	5.989	0.217
Board independence	16.70 %	26.16 %	4.340***	16.87 %	17.01 %	0.047
Board meeting (number of meetings)	7.398	6.163	3.277**	7.043	7.186	0.259
Women directorship	29.96 %	10.47 %	13.502***	27.40 %	25.06 %	0.637
CEO duality	15.32 %	58.67 %	9.655***	17.58 %	21.97 %	0.741
Leverage	23.09 %	22.51 %	0.367	22.27 %	24.39 %	0.799
Foreign assets	9.96 %	17.69 %	3.388***	10.66 %	10.10 %	0.240
Beta	0.632	0.661	1.114	0.623	0.611	0.324
Firm size (in millions of Euros)	337	2858	3.312***	333	441	0.300
Number of observations	124	2255		98	98	
	Entire sample			Matched sample		
	Firms with woman Chair	Firms without woman Chair	<i>t</i> value	Treatment group	Control group	<i>t</i> value
<i>Panel B: Woman Chair-led firms</i>						
Return on assets	2.66 %	3.01 %	0.534	3.57 %	3.12 %	0.655
Tobin's q	1.075	0.895	2.321*	1.033	0.811	2.465**
Institutional ownership	12.64 %	9.47 %	2.278*	10.94 %	8.14 %	1.426
Employee ownership	2.86 %	1.08 %	4.290***	0.95 %	2.11 %	0.934
Minority ownership	4.11 %	3.67 %	2.717**	4.29 %	4.43 %	0.502
Board size (number of directors)	7.790	7.239	1.414	8.471	7.462	1.701
Board independence	37.78 %	24.91 %	6.236***	39.53 %	35.42 %	1.337
Board meeting (number of meetings)	5.362	6.282	2.246*	5.471	5.726	0.610
Women directorship	25.37 %	10.62 %	10.647***	20.02 %	20.64 %	0.215
CEO duality	13.76 %	59.04 %	10.548***	14.15 %	16.04 %	0.382
Leverage	19.83 %	22.71 %	1.934	22.87 %	22.58 %	0.142
Foreign assets	15.54 %	17.41 %	0.895	19.57 %	16.53 %	0.923
Beta	0.658	0.660	0.104	0.666	0.658	0.230
Firm size (in millions of Euros)	4533	2618	2.367*	5406	4990	0.666
Number of observations	135	2205		106	106	

All variables are as defined in Table 1

^a *t* tests are based on natural logarithm transformed values

*, **, *** Represent significance at 0.05, 0.01 and 0.001 levels, respectively

appoint a female CEO (or not) or a female Chair of the board (or not).

Panel A of Table 6 shows no significant difference in performance between family firms according to whether they are woman CEO-led firms. However, Panel B shows that family firms with women Chairs outperform those without women Chairs in terms of Tobin's q . Our result is quite similar to that of Dezső and Ross (2012), who find that Tobin's q is higher with female representation in top management than without. Opposite effects are observed for ownership variables. While institutional, employee, and minority ownerships seem to favor the appointment of women to Chair positions in family firms, institutional and minority ownerships interact negatively with the presence of women CEOs. Similarly, Table 6 shows that boards with more independent directors are less likely to appoint women CEOs but are more willing to appoint a woman to the Chair position. However, more diligent boards positively affect the likelihood of having a woman CEO and negatively affect the appointment of a woman as Chair. Like Smith et al. (2006) and Gul et al. (2011), we find a positive relationship between the fraction of board gender diversity and having a woman in the CEO or Chair position. For the other control variables, the comparison of female and male CEO sub-samples shows that family woman-led firms tend to be less internationalized, as measured by the ratio of foreign assets to total assets, than family firms without a woman CEO. These results are consistent with the argument that risky corporate choices are negatively associated with the appointment of a woman CEO (Huang and Kisgen 2013; Palvia et al. 2015). No significance is observed in panel B between family firms with and without a woman Chairperson with regard to foreign assets. Finally, results in Panel A indicate that woman-CEO-led family firms are smaller than family firms run by men. However, women Chairs are more likely to be appointed in larger family firms. Finally, no significant differences are observed in leverage and in equity beta between the two panels.

Disproportional samples and substantial differences between family firms with and without women CEOs, on the one hand, and between family firms with and without women Chairs, on the other hand, justify the use of the propensity score matching approach. Panel A and panel B of Table 6 indicate that the statistical significance of these differences disappears after each matching between the treatment group and the control group.

Multivariate Analysis

Tables 7 and 8 report results for the matched samples on the relationship between women CEOs and women Chairs on family firm performance. Results in Table 7 show a

negative and significant effect of hiring a woman CEO on Tobin's q for family firms. No significance is found for return on assets. In Table 8, we observe a positive and significant effect of women Chairs on firm performance as measured by return on assets and Tobin's q . These results confirm our previous findings and provide more evidence that the impact of women leaders on firm performance stems inherently from distinguishable differences between male and female leadership styles. In line with the predictions of the contingency theory of leadership, we confirm that family firms, which are more conducive to transformational leadership (Vallejo 2008, 2009), offer women a more appropriate climate for exercising the function of Chair than that of CEO.

For the other control variables, we mainly note the persistence of the negative impact of employee ownership on Tobin's q . This result confirms our observation that both employees and minority shareholders may face the risk of expropriation by family controlling shareholders (Burkart et al. 1997), and that market participants perceive employee ownership in family firms negatively. A negative impact of minority ownership on Tobin's q is also found, but only in Table 7. The effect of board meetings becomes negative and significant on firm performance when we consider women Chairs as an endogenous variable (Table 8). Consistent with Miller et al. (2007), Table 8 suggests a positive and significant impact of beta on Tobin's q . The effect of leverage remains negative and significant in most cases. In this matching, the effects of foreign assets and firm size on firm performance become positive and significant. Therefore, the correction of the sample selection bias may be responsible for this result. No meaningful conclusions can be drawn for the other control variables.

Conclusion

In most studies of the relationship between female top management and firm performance, the issue of leadership is generally reduced to the CEO position (Smith et al. 2006; Bennedsen et al. 2007; Adams et al. 2008; Dezső and Ross 2012). When both CEO and Chairperson are considered, the question is generally of whether to separate their respective roles or not (Francoeur et al. 2008; Gul et al. 2011; Peni 2014; Palvia et al. 2015). In our study, we consider both CEO and Chair leadership levels, and we provide evidence that the two functions should be considered separately with respect to gender management style (Eagly and Carli 2003; Eagly et al. 2003) and to family issues (Curimbaba 2002; Jorissen et al. 2005; Smith et al. 2006). To our knowledge, our study is the first to simultaneously examine the relationship between female

Table 7 System GMM regression of family firm performance on women CEOs

Variables	Return on assets		Tobin's q	
	Coef.	<i>t</i> test	Coef.	<i>t</i> test
<i>Lag</i> return on assets	0.379***	18.24		
<i>Lag</i> Tobin's q			0.547***	19.83
Woman CEO	−0.015	−1.40	−0.408***	−3.36
Institutional ownership	0.036*	2.28	0.735**	3.00
Employee ownership	−0.350	−0.40	−2.432***	−4.11
Minority ownership	−0.021	−1.82	−0.330*	−2.25
Board size	0.023***	3.08	0.109	1.31
Board independence	−0.018	−1.24	0.045	0.28
Board meeting	−0.004	−0.54	0.092	1.57
Woman directorship	−0.012	−0.78	−0.389*	−2.43
CEO duality	0.012*	2.48	0.139	1.46
Leverage	−0.051**	−2.59	−0.298*	−2.37
Foreign assets	0.042*	2.11	−0.103	−0.54
Beta	0.016	1.69	0.103	0.94
Firm size	0.002*	2.30	0.001	0.02
Intercept	0.040	1.73	0.729	1.53
Industry	Yes		Yes	
Year_FE	Yes		Yes	
Number of observations	172		172	
Fisher, <i>p</i> value	678.19 (<i>p</i> = 0.000)		651.33 (<i>p</i> = 0.000)	
Sargan test (χ^2 , <i>p</i> value):	135.57 (<i>p</i> = 0.000)		180.46 (<i>p</i> = 0.000)	
Hansen test (χ^2 , <i>p</i> value):	27.95 (<i>p</i> = 0.414)		24.48 (<i>p</i> = 0.140)	

All variables are as defined in Table 1

*, **, *** Represent significance at 0.05, 0.01 and 0.001 levels, respectively

leadership, family ownership patterns, and firm performance. We demonstrate that women's leadership is endogenously determined by family ownership and by several variables related to governance, ownership patterns, and other firm characteristics.

To produce approximately unbiased estimates of the treatment effect, two propensity score matching specifications are performed. The first one matches family firms with nonfamily firms that are similar in terms of women in CEO and Chair positions and all other characteristics considered in our study (ownership, governance, size, industry, etc.). This analysis serves to illustrate whether family and nonfamily firms perform intrinsically differently regardless of gender leadership style. The second specification involves matching family firms with women in top management positions with family firms without women in top management positions. The aim is to separate the effects on performance due to family ownership from the effects on performance due to women's leadership.

Starting with a sample of 394 French firms over the 2001–2010 period, our results support the contingency theory of leadership, which states that the effectiveness of a

leadership style varies according to the type of organization and culture and the requirements of the leader's position. Conversely to our initial hypotheses 1 and 2, we find that the appointment of a woman Chair is negatively related to firm performance as measured by return on assets, while hiring a woman CEO boosts the market-based performance as measured by Tobin's q. In spite of the rejection of hypotheses 1 and 2, our results corroborate the transformational leadership theory, clearly indicating that woman-led firms perform better or worse than their counterparts depending on the position considered in top management (CEO or Chair). Importantly, we find major discordances between women CEOs' leadership style and family business expectations relative to firm performance, as measured by return on assets and Tobin's q. Consistent with our Hypothesis 3, we find that hiring women as board Chairs is more valuable for family firms than for nonfamily firms. This may result from the fact that women Chairpersons in family firms are more effective leaders because they are more likely to use a transformational leadership style (Druskat 1994; Bass et al. 1996; Eagly and Carli 2003; Eagly et al. 2003; Dezső and Ross 2012) that embraces family business' needs and characteristics (Vallejo

Table 8 System GMM regression of family firm performance on women Chairs

Variables	Return on assets		Tobin's q	
	Coef.	<i>t</i> test	Coef.	<i>t</i> test
<i>Lag</i> return on assets	0.373***	19.87		
<i>Lag</i> Tobin's q			0.292***	13.52
Woman Chair	0.009*	2.17	0.866***	6.32
Institutional ownership	−0.047**	−2.70	0.067	0.18
Employee ownership	0.025*	2.16	−1.308***	−4.03
Minority ownership	−0.023	−1.93	−0.256	−1.15
Board size	0.003	0.38	−0.143	−1.18
Board independence	0.005	0.68	−0.422	−1.77
Board meeting	−0.019***	−4.81	−0.402***	−4.03
Woman directorship	0.011	1.51	−0.219	−0.84
CEO duality	−0.003	−0.50	0.083	0.48
Leverage	−0.062***	−4.73	−0.276	−0.84
Foreign assets	−0.002	−0.23	0.471*	2.51
Beta	−0.005	−0.51	0.406**	3.00
Firm size	0.004***	4.69	0.047*	2.52
Intercept	0.040	1.73	0.002	0.09
Industry	Yes		Yes	
Year_FE	Yes		Yes	
Number of observations	184		184	
Fisher, <i>p</i> value	7058.23 (<i>p</i> = 0.000)		3482.77 (<i>p</i> = 0.000)	
Sargan test (χ^2 , <i>p</i> value):	150.98 (<i>p</i> = 0.000)		172.51 (<i>p</i> = 0.000)	
Hansen test (χ^2 , <i>p</i> value):	33.32 (<i>p</i> = 0.355)		31.17 (<i>p</i> = 0.097)	

All variables are as defined in Table 1

*, **, *** Represent significance at 0.05, 0.01 and 0.001 levels, respectively

2008, 2009). Finally, in contrast with Hypothesis 4, we find that female CEOs perform better in nonfamily businesses, dispelling stereotypical images about the leadership style of women CEOs. Transactional leadership is required in handling day-to-day tasks (Burns 1978; Bass 1985; Gabriellsson et al. 2007) and serves as the foundation for leaders seeking to exercise their authority and legitimate power in the firm (Bass 1985; Hood 2003; Ng and Sears 2012). The conjecture of Eagly and Karau (2002) and Zhang et al. (2015) that female leaders can be considered as less trustworthy in leadership roles if they exhibit less transformational leadership by being more directive seems to be obtain in family firms, but not in their nonfamily counterparts.

Our findings have important implications for governance of family firms and nonfamily firms with respect to gender leadership style and top management positions. We clearly show that hiring women CEOs enhances the performance of nonfamily firms by breaking down stereotypical images about the leadership style of women CEOs and demonstrating that women are more talented and devoted than their male counterparts. The opposite case is nevertheless seen for family firms. The nonequivalence of

these two results suggests that the failure of women to improve firm performance is mainly due to the inherent characteristics and the practices of family businesses rather than to the female leadership style. Accordingly, some papers have demonstrated that family features such as nepotism, family structure, and inheritance norms may partly drive the performance of family businesses (Bertrand and Schoar 2006). For example, Villalonga and Amit (2006) and Bennedsen et al. (2007) advocate that the weaker performance of family firms is largely associated with the transition of active management and control from the founder to that person's descendants. Such a decline in performance is especially noteworthy when the appointed family CEO did not attend a selective college. Moreover, family CEOs receive lower total income than nonfamily CEOs and their compensation is less based on firm performance (McConaughy 2000; Gomez-Mejia et al. 2003). In exchange for lower pay, family status gives family CEOs higher job security and contributes significantly to their entrenchment, leading to sub-optimal risk taking and weaker performance (Gomez-Mejia et al. 2001). Because female CEOs are more poorly rewarded than men (Baixauli-Soler et al. 2015), women heading family businesses

are likely to be less worried about performance. Accordingly, it is strongly recommended that family firms review the nature of the relationship between owners and CEO and revise their CEO recruitment and compensation policies. Regardless of family ownership, further investigations are needed to understand the conditions under which women CEOs can enhance firm performance.

Conversely, our study clearly shows that hiring women Chairs enhances the performance of family firms. More particularly, results show that family firms with women Chairs outperform those without women Chairs. These findings once again counter stereotypical images about the leadership style of women Chairs, and highlight women's talent and devotion in managing family firms' boards. Nevertheless, the opposite case is found for nonfamily firms. Once again, we present evidence suggesting that the firm's environment is critical for promoting female leadership. Although the legal quota of 40 % for women on corporate boards of European companies has promoted gender diversity in these boards considerably, the question of whether this quota constitutes a step forward in reducing the gender leadership gap has remained unanswered until now. Thus, regulation on the topic of women in leadership needs to be supported by other appropriate measures to remove the barriers impeding women from succeeding in top management positions rather than focusing solely on legal provisions. Companies' initiatives, policies, attitudes, and practices may result not only in a significant increase in female board members but also in the development of mentoring and networking programs, professional training schemes, and promoting a process of cultural changes against the subtle discrimination that persists in the business world.

Our study opens avenues for future research. In our study, we do not take into account CEO compensation and implicitly we consider that women CEOs have the same incentives as men CEOs to pay attention to both their own performance and to that of the firm. Further, the variety of firm goal orientations may impact leadership practices in the firm and organizational performance as a whole. For instance, some studies of family businesses in different empirical settings have underlined the need to study actors' behaviors where the firms pursue not only financial performance but also nonfinancial goals (Gomez-Mejia et al. 2010).

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