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Does gender diversity on corporate boards increase risk-taking?

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Abstract
We study the impact of board gender diversity on firm risk-taking in a developing market. Our study is drawn from a sample of 30 Tunisian-listed firms between 1997 and 2010. First, we found that women have a risk perception that leads to risk avoidance behaviour: the presence of women directors, even when there is one woman director, is positively associated with cash ratio. Second, we showed no significant relationship between board gender diversity and the propensity to take strategic or financial risk-taking. Third, the presence of state officer/bureaucrats and/or politically connected women have a positive effect on cash holding and investment opportunities. Finally, we found that foreign investors do not invest in firms with gender-diverse boards. We conclude with a discussion of contributions to scholarship and practice, and present avenues for future research. Copyright © 2015 ASAC. Published by John Wiley & Sons, Ltd.

Résumé
Nous étudions l'impact de la diversité de genre au sein du conseil d'administration sur la prise de risque des firmes dans les marchés en voie de développement. Notre étude se base sur un échantillon de 30 firmes tunisiennes cotées entre 1997 et 2010. D'abord, nous avons constaté que les femmes ont une perception de risque qui se traduit par un contournement des risques : la présence de femmes membres du conseil d'administration, une ou plus, est positivement associée au ratio de liquidité. Deuxièmement, nous n'avons montré aucune relation significative entre la diversité de genre et la propension de prendre des risques stratégiques ou financiers. Troisièmement, la présence des femmes employées de l'Etat/bureaucrates et/ou des femmes politiquement connectées a un effet positif sur la liquidité des actifs et les opportunités d'investissement. Finalement, nous avons constaté que des investisseurs étrangers n'investissent pas dans des firmes avec des conseils caractérisés par la diversité de genre. Nous concluons avec une discussion de contributions à la littérature et la pratique et présentons des avenues pour la recherche future. Copyright © 2015 ASAC. Published by John Wiley & Sons, Ltd.

Keywords: gender diversity, board of directors, risk-taking, cash holding, Tunisian firms

Mots-clés : diversité de genre, conseil d'administration, prise de risque, liquidité, firmes tunisiennes

The literature on board diversity has attracted increasing interest in the last few years. Many studies have explored the effects of the presence of women on the board of directors of firms or women holding leadership positions (e.g., Adams & Ferreira, 2004, 2009; Burgess & Tharenou, 2002; Carter, Simkins, & Simpson, 2003; Daily, Certo, & Dalton, 1999; Farrell & Hersch, 2005) and have analyzed how women in such positions may affect corporate governance and corporate performance (Adams & Ferreira, 2004, 2009). However, many areas, such as the relationship between gender and risk-taking, have yet to be explored.

There are many theories that could explain why women are underrepresented on corporate boards. The first explanation is that organizations are gendered.

> To say that an organization, or any other analytic unit, is gendered means that advantage and disadvantage, exploitation and control, action and emotion, meaning and identity, are patterned through and in terms of a distinction between male and female, masculine and feminine (Acker, 1990, p.146)

Second, the social, political, and economic environments of the country where women spend formative years has also been put forth as an explanation for underrepresentation

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(Terjesen & Singh, 2008). There is a positive association between the presence of senior women leaders and the number of women on boards, as well as between gender diversity and gender pay gap.[1] Powell (1999) found that women think that they lack qualities such as ambition and confidence, leadership skills such as assertiveness and the ability to influence behaviour, and relevant experience or education level compared to men.

After the financial subprime crisis, some policymakers and financial practitioners have argued that women are more risk-averse agents/managers than men (See Jianakoplos & Bernasek, 1998; Sunden & Surette, 1998), and as a result, they will play a key role in rebuilding, rather than managing, the financial system.[2,3]

The financial literature does not yet fully explore how the presence of women on corporate boards could influence risk-taking. Current research exclusively studies developed —as opposed to developing—markets and focuses on the financial dimension of risk-taking by analyzing the level of leverage, R&D expenses, and so forth (Berger, Kick, & Schaeck, 2012; Cosentino, Montalto, Donato, & Via, 2012; Faccio, Marchica, & Mura, 2012). The current paper contributes to the literature on how the presence of women on corporate boards could influence risk-taking. We consider multiple dimensions of risk-taking: financial, strategic, and managerial. The study is conducted on a developing market, that of Tunisia. The sample consists of nonfinancial Tunisian-listed firms between 1997 and 2010.

The next section presents a survey of the literature on women's representation in boardrooms and risk-taking along with the hypotheses. We then present the methodology, variables, and data. Following that we discuss our results and our interpretation. Finally, we conclude with contributions to scholarship and practice.

Literature Review

Our paper aligns with three bodies of literature: (a) gender differences in terms of risk preferences, (b) the relationship between gender diversity in the boardroom and the quality of corporate governance, and (c) corporate governance mechanisms influencing and promoting managerial risk-taking.

Gender Diversity and Risk Preferences

The main consensus of studies on the women/men comparison in terms of risk preferences shows that men are more likely to take risks than are women (e.g., Sundén & Surette, 1998; Jianakoplos & Bernasek, 1998). The differences are explained by biological factors, such as genetic differences between men and women (Buss, 1989; Saad & Gill, 2000), and psychological and social considerations (Meier-Pesti & Penz, 2008). For instance, some studies have found that women are less competitive (Andersen, Ertac, Gneezy, List, & Maximiano, 2013; Croson & Gneezy, 2009) and less confident in general than their male counterparts (Barber & Odean, 2001; Niederle & Vesterlund, 2007). These differences in terms of confidence between men and women are explained to a large extent by the work environment in the firm and whether their business partners are men or women (Croson & Gneezy, 2009). However, these differences in terms of risk perception are attenuated by experience and one's profession in managerial and professional populations (Johnson & Powell, 1994).

Social gender norms explain to a large extent the differences in behaviour between men and women (Klenke, 2003)[4] in addition to the way individuals are socialized into gender roles, prescribing what behaviour, attitudes, or beliefs are socially accepted for women and men (Eagly & Steffen, 1984; Gustafson, 1998; Meier-Pesti & Penz, 2008).

In addition, there are expectations regarding the roles of women and men, usually reproduced by family, school, mass media, and so forth (Gustafson, 1998). Gender is thus a socially constructed category, which reflects culture's definition of femininity and masculinity (Lott & Maluso, 2001; Meier-Pesti & Penz, 2008). Accordingly, women are less likely to be aggressive and make very risky decisions in professional situations (Saint-Michel & Wielhorski, 2011)

International development reports (UNDP, 2003; World Bank, 2003) on gender and employment in the Middle East show that gender roles are shaped by four elements. First, they highlight the centrality of the family, rather than the individual, as the main unit in society. Second, the man is recognized in these societies as the sole breadwinner of the family. Third, societies in the Middle East have a specific perception of women's reputation as a synonym of family honour. Finally, there is an unequal balance of power between men and women in the private sphere based on family laws. In fact, as women are socially and economically dependent on men, they very often hesitate to make decisions. However, there are some countries that are committed to promoting gender equality in the workplace. Indeed, Tunisian policymakers have been promoting the principle of equal opportunities for women in the workplace since independence in 1956.

Adams and Funk (2012) have provided evidence that women directors are tempted to make riskier decisions than their male counterparts and that these decisions can lower profitability and firm value. These effects may be significant when women face more obstacles than men in making decisions in the firm. Other studies argue that in profitable firms, women on boards are tempted to exercise excessive monitoring following riskier decisions that in turn may decrease shareholder value (Adams & Ferreira, 2009; Ahern & Dittmar, 2012). Dwyer, Gilkeson, and List (2002) found that women take less risk than men in mutual fund investments. However, this significant difference between men and women is weakened when the investor's financial investment knowledge is included as a control variable in the regression model. Based on a sample of mutual funds,

Atkinson, Baird, and Frye (2003) compared investor behaviour in terms of investment opportunities. Their results show no significant differences between men and women in these mutual funds. Summarizing these findings, we can say that risk preferences are not related to gender diversity but rather to investment knowledge and wealth constraints.

There is a large body of empirical evidence on whether the presence of women on corporate boards increases the propensity to take risks or favours risk-taking (e.g., Berger et al., 2012; Cosentino et al., 2012; Faccio et al., 2012). The results are based on financial risk-taking assessed by liquidity measures (cash ratio and leverage ratio) and show risk-avoidance behaviour on developed markets. Faccio et al. (2012) showed that the presence of a female CEO in a large number of European privately-held and publicly-traded firms (Amadeus Top 250 000, Amadeus) decreases leverage and volatile earnings but increases the likelihood of a firm's survival, particularly in start-ups (Weber & Zulehner, 2010). However, Cosentino et al. (2012) found no significant effect on leverage and total risk in listed firms in Italy, France, Germany, Spain, and Norway. In the banking sector, research is limited and results are inconclusive: Beck, Behr, and Guettler (2013) and Agarwal and Wang (2009) found that the default rate decreases when women on boards fund investments relying on loans, while Berger et al. (2012) showed a positive association between risk-taking and women representation on corporate boards. We therefore hypothesize the following:

> *H1: Female participation in the boardroom has no effect on risk-taking.*

Corporate Governance and Gender Diversity in the Boardroom

In management theories, gender-diversity in boards is considered from different angles.

Resource dependence theory. According to resource dependence theory, the presence of women directors on corporate boards links firms with stakeholders and provides legitimacy with regard to several groups of stakeholders such as employees, customers, and investors (Brammer, Millington, & Pavelin, 2007; Lückerath-Rovers, 2010). Indeed, Hillman, Shropshire, and Cannella (2007) and Singh and Vinnicombe (2004) advanced that the presence of women in the boardroom provides a valuable form of legitimacy and signals better career opportunities to both potential and current employees. For customer-oriented businesses, the higher the proportion of women on the board, the more legitimate it appears in the eyes of their customers, and the more it tightens relationships with customer stakeholders (Brammer et al., 2007).[5] These perceptions might improve corporate reputation and consequently corporate performance. In addition, diversity may have a political dimension, as suggested by Adams and Ferreira (2004):

> Companies may care more about diversity when they are concerned about their public image, either because they are large firms which are visible to outsiders or because they are required to deal with government agencies which have preferences for diversity. (p. 14)

Empirical findings are mixed. For Italian firms, Martini, Corvino, and Rigolini (2012) showed that board diversity does not influence investments in innovation. In large UK firms, board diversity has a reputational effect that varies across sectors and is more significant in those closest to final consumers (Brammer et al., 2009). Bear, Rahman, and Post (2010) found a significant and positive effect on firms' corporate social responsibility (CSR) ratings for a sample of US firms. Accordingly, these findings suggest that women on corporate boards have a significant effect on corporate social performance.

Agency theory. Literature on board' effectiveness has recently focused on board diversity as a measure of a board's independence—investigating whether independent boards are more effective than boards with only inside directors in terms of managerial monitoring (Jensen & Meckling, 1976). In light of these findings, it is tempting to think that boards that are diverse in terms of gender, ethnicity, or cultural background are more creative in the sense more diverse questions may be asked or more diverse solutions provided. In fact, some of these questions and solutions might not be proposed in boards where directors have similar backgrounds or experiences (Arfken, Bellar, & Helms, 2004). Adams and Ferreira (2009) observed three important characteristics in diverse boards in US listed firms: (a) female directors have better attendance records than male directors; (b) when a board is more gender-diverse, the attendance problems of male directors become much less severe, and (c) women are more likely to join monitoring committees. Therefore, women's presence on the board may have a significant influence on board effectiveness, specifically on monitoring policy.

Despite the fact that diverse boards are seen as an effective mean to overcome agency problems between managers and shareholders, empirical studies make only ambiguous and nonconclusive predictions (Milliken & Martins, 1996) in this regard and also concerning other firm outputs (tax optimization, earning quality, etc.). In US firms, while Carter et al. (2003) found a positive relationship between gender diversity in the boardroom and Tobin's Q, Adams and Ferreira (2009) found a negative one. In Spanish firms, Campbell and Minguez-Vera (2008) found a positive effect on firm value. In Danish firms, Smith, Smith, and Verner (2006) showed a negative effect on gross profits to sales and no significant effect on several other accounting

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measures of financial performance, whereas Rose (2007) did not find a significant effect on Tobin's Q.

In emerging markets, few studies have addressed this issue. For instance, Jhunjhunwala and Mishra (2012) provided no link between gender board diversity and corporate performance in Indian firms, while M'hamid, Hachana, and Omri (2011) confirmed that female presence in the boardroom positively influences Tunisian firm performance. Regarding other firms' outputs, Srinidhi, Gul, and Tsui (2011) indicated that firms with greater female participation on their boards exhibit higher earnings quality. Aliani, Mhamid, and Zarai (2011) highlighted the effectiveness of women's monitoring in Tunisian boardrooms and found that gender diversity decreases tax optimization.

Corporate Governance, Ownership Structure, and Risk-Taking

There is a large body of work on governance and risk-taking in corporate boards; Jensen and Meckling (1976) and Fama and Jensen (1983) concluded that risk-taking can be influenced by a firm's ownership structure. In emerging economies like Tunisia, firms face severe agency problems between controlling and minority shareholders (La Porta, Lopez-de-Silanes, & Shleifer, 1999). Large shareholders may appoint their representatives in the board to expropriate minority, which leads to increasing or decreasing firm risk-taking (e.g. Dahya, Dimitrov, & McConnell, 2008; Yeh & Woidtke, 2005). Two competing arguments about ownership and firm risk-taking may arise. First, high ownership allows large shareholders to monitor and control managerial decisions. Shareholders could be tempted to increase a firm's profit by undertaking risky projects. However, they may take more "safe" (low-risk) projects to secure and protect their own interest at the expense of minority shareholders or stakeholders, like for example, getting more private benefits (John, Litov, & Yeung, 2008).

The level of risk-taking depends also on the shareholder identity. This affects shareholders objectives and the way they exercise their rights (Pedersen & Thomsen, 2003). Accordingly, directors' network and the professional background may influence decisions on the board.

Despite the fact that more recent studies on emerging markets provide evidence that owner identity is more important than ownership structure (e.g., Dyck, 2001; Loukil & Yousfi, 2013; Omran, Bolbol, & Fatheldin, 2008; Wu, Xu, & Yuan, 2009), empirical studies (see among others Boubakri, Cosset, & Saffar, 2013) have paid little attention to the risk-taking behaviour of owners. From an agency perspective, women are considered independent directors and their appointment to the board may only be decided by the dominant shareholders. Surprisingly, the link between affiliated women directors with the other directors on the board, and ownership structure has not yet been addressed in the literature.

In emerging markets, the government owner plays the role of an external controller (Ang & Ding, 2006; Wu et al., 2009). The government owner exercises significant and close control to protect the interest of minority shareholders. It seeks to maximize social stability and increase employment while other shareholders' decisions, for example foreign and family owners, are mainly driven by seeking more profit on their investment. Hence, state-controlled firms pursue "safer" or less risky investments (Boubakri, Cosset, & Saffar, 2013). As state ownership may discourage managerial risk-taking, we are tempted to think that women who are not averse to political involvement or those who held public office positions in the near past will likely discourage risky investments.

Accordingly, we hypothesize:

H2: Politically and state-appointed women in the boardroom will discourage risk-taking.

Similarly, the same issue can be addressed in family firms. Indeed, many studies (Andres, 2008; Yeh & Woidtke, 2005) argue that in family-controlled firms, managers and directors are members of the founding family. Family members in such positions are appointed because they invest their funds in the family firm. Accordingly, they bear higher risk, specifically in terms of nondiversifiable risk, than other types of firms with different ownership structures. To overcome risks, family firms may be tempted to undertake low-profit projects. In keeping with these findings, we can infer that women directors who are members of the founding family discourage managerial risk-taking. We therefore hypothesize:

H3: Women directors who are members of the founding family will discourage risk-taking.

A large body of work argues that foreign owners are associated with more managerial risk-taking than government owners.[6] However, we cannot test the effect of women directors on risk-taking as foreign owners do not invest in firms with gender diverse boards.

Sample and Variables

Our initial sample consisted of 32 nonfinancial Tunisian firms listed on Tunis Stock Exchange (TSE) during the period 1997-2010. The data were hand-collected from corporate annual reports and "Stock Guide" provided by TSE. The reports contain information about shareholders and board of directors. We filtered out firms with missing data. The final sample contains 30 listed firms and 256 yearly observations.[7] Almost 50% of firms in our sample belong to the consumer goods and services sector. Just over 23% of firms are in the industrial sector and 16.66% of

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firms belong to the energy sector. Few firms (less than 4%) are in the telecommunications sector.

Risk-Taking

We followed Claessens, Djankov, and Nenova (2000) in the way they measured corporate risk-taking, and financial risk-taking in particular: Liquidity or cash ratio is the ratio of current assets (net of stocks) and current liabilities. When the value ratio is lower than 1, the firm is facing liquidity problems, and current obligations in particular. As financial distress results from a mismatch between current liquid assets and current financial obligations, this may affect firm survival. Financial analysts use the liquidity ratio to estimate firm riskiness, particularly when firm's activities are mostly funded by short-term debt (Claessens et al.). Liquidity ratio is negatively associated with corporate risk in the sense that holding more cash allows a firm to adopt environmental contingencies than more cash-constrained firms (Cohen, March, & Olsen, 1972).

To estimate the effect of the Sarbanes-Oxley Act (SOX) on corporate risk-taking, Bargeron, Lehn, and Zutter (2010) used the cash ratio, among other proxies, as a measure of investments in nonoperating low risk assets.

We focused on women directors' ability to influence cash-holding policy and therefore liquidity risk. When there is risk-taking, the amount of available cash is low, which reduces the firm's ability to adapt and to handle risky circumstances. We use liquidity ratio, hereafter **CASH** ratio, to calculate the level of asset liquidity.

Gender-Diversity (GD) in Corporate Boards

To assess the level of gender diversity in the board, we relied on the following proxies:

- **DWOM is** a dummy variable that captures the presence of female directors. It is measured by:

$$\mathbf{DWOM} = \begin{cases} 1 & \text{if } n \geq 1 \\ 0 & \text{otherwise} \end{cases},$$

  where n is the number of women in the boardroom.
- **PWOM** is the percentage of women on the board, calculated by the number of women directors divided by the total number of directors in the boardroom.
- **NWOM** is the exact number of female directors in the board to analyze their effect as a type of board diversity on innovation (Torchia, Calabrò, & Huse, 2011).

Control Variables

The control variables in the current model are related to financial decisions in the firm.

- **BSIZ** is the measure of the board size given by the total number of directors sitting on the board. Agency theory argues that small boards tend to encourage managerial risk-taking (Hermalin & Weisbach, 2001). In addition, Yermack (1996) advanced that larger boards reduce risk-taking. Wang (2013) found that companies with smaller boards take lower leverage but select riskier investments.
- **UFOR** was used to analyze the control type in the firm. The identity of the ultimate owner is an important feature in corporate governance of Tunisian firms. Few studies have been conducted on the issue. Foreign owners reduce CEO power (Ben Cheikh & Loukil, 2013) and decrease stock liquidity (Loukil & Yousfi, 2013).

$$\mathbf{UFOR} = \begin{cases} 1 & \text{if the utlimate owner is foreign investor} \\ 0 & \text{otherwise} \end{cases}$$

- **SIZE** is the measure of the firm size assessed by the book value of assets.
- **GROW** is the annual growth rate of assets. It estimates whether new investments in the firm are risky or not. According to Lipson, Mortal, and Schill (2009), higher asset growth is associated with relatively lower risk. Berk, Green, and Naik (1999) stated that growth options are more risky than assets in place. One explanation is that when a firm makes capital investments with less risky assets as opposed to more risky growth options, the average firm risk will be lower.
- **MBVA** is the ratio of the market to book value of total assets that measures the level of investment opportunities of the firm.
- **LDME** is the ratio of the book value of long-term debt and market value of equity.

All variables are summarized in Table 1.

Most firms in our sample have no women on their boards (see Table 2). Only 26% of total observations show the presence of women directors in their boardroom: the most gender-diverse boards have three women (1.15% of total observations), while most frequently, gender-diverse boards have only one woman (21.37%). The percentage of women on boards is 27%.

Statistics show that there are no liquidity problems: The average cash ratio (ratio of current assets [net of stocks] and current liabilities) is 171%. According to the debt-to-equity market-value ratio, long-term debts, on average, are 1.48 times the market capitalization of the firm and this ratio varies from one firm to another (271%). Finally, we observed high Skewness coefficients of the following variables: NWOM SIZE, GROW, LDME, MBVA, and CASH.[8]

Empirical Results

Univariate Analysis

Characteristics of firms in the presence of women directors. Table 3 first shows that firms with women directors hold more liquidity than other firms. Firms rely more on

Table 1
Variables and Measures in the Model

	Variables	Symbol	Definitions
Risk-taking	**Liquidity risk**	**CASH**	The ratio of current asset (net of stocks) and current liabilities
Gender diversity GD variables	**The presence of women on board**	**DWOM**	A dummy variable that takes a value of one when at least one woman seats on the board, and zero otherwise
	The proportion of women directors	**PWOM**	The percentage of women on the board, calculated by the number of women directors divided by the total number of directors in the boardroom
	The number of women	**NWOM**	The number of women on the board of directors
Control variables	**Investment opportunities**	**MBVA**	The market value of assets scaled by book value of assets
	Leverage ratio	**LDME**	The ratio of the book value of financial long term debt scaled by market value of equity
	Internal growth	**GROW**	The annual rate of growth rate of assets
	Foreign ultimate owner	**UFOR**	A dummy variable that takes one when the ultimate owner is foreign investor and zero otherwise
	Board size	**BSIZ**	The total number of directors
	Firm size	**SIZE**	The book value of assets

Table 2
Gender Diversity, Risk-Taking, and Other Firm Characteristics

	Frequency	Mean	Median	Sdeviation	Max	Min	Skewness	Kurtosis
PWOM		0.034	0	0.062	0.272	0	1.618	4.648
NWOM		0.324	0	0.604	3	0	2.000	7.088
DWOM	16.40%							
CASH		1.713	1.099	2.230	14.176	0.155	3.341	15.349
SIZE		1.29E+08	5.16E+07	2.80E+08	1.49E+09	1.03E+07	3.887389	16.93913
BSIZ		9.202	10	1.945	12	4	−0.429	2.628
GROW		0.073	0.044	0.183	1.3907	−0.294	3.336	22.612
MBVA		1.511	1.195	0.900	6.641	0.136	2.300	9.862
LDME		1.483	0.573	2.712	20.270	0.001	4.161	24.025
UFOR	12.30%							

Note: **PWOM**: the proportion of women directors; **NWOM**: the number of women on the board of directors; **DWOM**: the presence of at least one woman director; **CASH:** the cash ratio; **SIZE:** the book value of assets; **BSIZ**: the number of directors on the board; **GROW:** growth rate of assets; **MBVA**: the investment opportunities; **LDME**: the leverage ratio; **UFOR**: the presence of a foreign ultimate owner.

internal funds to finance investments than to cover debts when there is at least one woman on the board. These firms are smaller than those without women on corporate boards.

Second, comparing the risk-taking policy and firms' characteristics with the number of women on the board shows the following: results on firms with one woman on the board and those with no women on the board provide evidence that women's presence influences the cash-holding policy and depends on the firm size. Firms with no women on the board are larger than firms with one woman.

Third, boards with two women are larger than firms with one woman. The presence of two women directors reduces cash holding. In addition, it seems that the presence of two women directors also reduces investment opportunities.

Finally, results show that the annual growth of firms with three women is higher than those with two women but that they have low leverage. Findings suggest that increasing the number of women on a firm's corporate board (more than two) boosts the investment policy of the firm. In that sense, board gender diversity enhances internal growth and discourages the accumulation of long-term debt.

Correlation Analysis

The cash ratio is positively and significantly correlated to lnNWOM and DWOM. Correlation coefficients between board diversity variables and leverage ratio are negative and significant (see Table 4). We detected a negative and

Table 3
Comparison Means: Risk-Taking Measure and Gender Diversity

Variables	No women	Women	Difference	No women	One women	Difference
CASH	1.447	2.467	(−1.019)**	1.447	2.738	(−1.290)***
SIZE	1.55E+8	5.75E+7	9.744E+7***	1.55E+8	6.242E+7	9.259E+7***
N	193	69		193	56	
	One	**Two**	**Difference**	**Two**	**Three**	**Difference**
CASH	2.7385	1.2215	1.5169***	1.2215	1.1485	0.073
MBVA	1.6079	1.034	0.5738***	1.034	1.1793	−0.1453
GROW	0.0587	0.0139	0.0449	0.0139	0.1421	(−0.1282)**
LMDE	2.0275	1.4344	0.5931	1.4344	0.5563	0.8780**
SIZE	6.242E+7	3.854E+7	2.387E+7***	3.854E+7	3.036E+7	0.817E+7
BSIZ	9.16	10.3	(−1.14)**	10.3	11.67	(−1.37)**
N	56	10		10	3	

Note: **CASH:** the cash ratio; **SIZE:** the book value of assets; **BSIZ**: the number of directors on the board; **GROW:** growth rate of assets; **MBVA**: the investment opportunities; **LDME**: the leverage ratio; *. **. ***denote significance level of 10%, 5%, 1%, respectively.

Table 4
Correlation Analysis

	LnGROW	LnMBVA	LnLDME	lnNWOM	PWOM	DWOM	lnSIZE	BSIZ	lnCASH	UFOR
GROW	1.0000									
LnMBVA	0.0654	1.0000								
LnLDME	−0.0520	−0.544***	1.0000							
lnNWOM	−0.0053	−0.0366	−0.0675	1.0000						
PWOM	0.0515	−0.2377**	0.0112	0.8358***	1.0000					
DWOM	−0.0056	−0.0342	−0.0696	0.9997***	0.9314***	1.0000				
lnSIZE	0.0349	0.0289	0.3005***	−0.1811***	**−0.394*****	**−0.179*****	1.0000			
BSIZ	−0.0247	0.0193	0.1573**	0.0405	−0.1406	0.0359	0.3853***	1.0000		
lnCASH	−0.1086	**0.1602*****	**−0.576*****	**0.1812*****	0.1215	**0.1834*****	−0.1978***	−0.0237	1.0000	
UFOR	0.0517	0.4545***	−0.246***	−0.0415	−0.312***	−0.0396	0.1148*	0.1769***	0.1483**	1.0000

Note. **LnGROW**: the logarithm of growth rate of assets; **LnMBVA**: the logarithm of the market to book value of assets; **LnLDME** : the logarithm of the leverage ratio; **LnCASH:** the logarithm of the cash ratio; **DWOM**: the presence of women directors; **PWOM**: the proportion of women directors; **LnNWOM**: the logarithm of the number of women directors; **LnSIZE:** the logarithm of the book value of assets; **UFOR** : the presence of a foreign ultimate owner; **BSIZ** is the number of directors on the board; *. **. ***denote significance level of 10%, 5%, 1%, respectively.

significant correlation between investment opportunities (MBVA) and the proportion of women directors. Board size and debt to equity market value are positively and significantly correlated. In addition, cash holding is positively related to investment opportunities. This leads to the following preliminary result: Firms in our sample do not use long-term debt to finance investment opportunities. One explanation is that Tunisian firms avoid increasing long-term leverage and prefer raising equity or self-financing (cash holding). Statistics and correlations matrix point out that foreign ultimate owners invest in large firms with large boards and that these boards are not gender-diverse.

Furthermore, **UFOR** is positively and significantly related to leverage ratio, which is consistent with the literature on financial corporate strategy, showing that foreign ultimate owners prefer increasing the long-term leverage. Firm size displays a negative correlation coefficient with gender diversity variables. Firms are very often forced to appoint women directors who are politically connected or appointed by the founding family to consolidate the ultimate owner's policy and decisions.

Multivariate Analysis

The impact of gender diversity on corporate liquidity risk. We considered the following model to analyze the relationship between firm risk-taking—in particular liquidity risk—and a gender-diverse board:

$$\begin{aligned} LnCASH_{it} &= c_0 + c_1 GD_{it} + c_2 LnSIZE_{it} + c_3 BSIZ_{it} \\ &\quad + c_4 LnMBVA_{it} + c_5 LnLDME_{it} \\ &\quad + c_6 lnGROW_{it} + c_7 UFOR_{it} + \varepsilon_{it} \end{aligned}$$

Where GD_{it} variable is one of the gender diversity variables (PWOM, LnNWOM, DWOM) and ε_{it} is the error term of firm i at year t. The model was estimated three times: we changed the gender-diversity variable (see Table 5).

Empirical findings show a positive and significant coefficient of the three measures of gender diversity on the liquidity risk on all estimated models. Women on corporate boards (DWOM) are more likely to prefer funding and investment policies enabling the firm to hold more cash and avoid risk. In addition, the amount of cash held by firms is positively associated with the number of women directors. Furthermore, increasing the proportion of women directors (PWOM) leads to more gender diverse boards while also decreasing liquidity risk. The Tunisian sample shows that women on corporate boards negatively affect risk-taking preferences in firms. In light of these findings, regarding liquidity policy, we confirm the risk avoidance behaviour of women, and accordingly, *H1* is not supported.

We found negative and significant investment opportunities coefficients, leverage ratio, and internal growth. These results show the interrelation between corporate cash policy and other corporate financial policies (investment opportunities, internal growth, and debt policy). Firms may accumulate liquid assets or cash to have more financial flexibility to meet unanticipated contingencies if the costs of other financing resources increase (see among others Myers & Majluf, 1984; Opler, Pinkowitz, Stulz, & Williamson, 1999). Results show nonsignificant coefficients for foreign owner. This implies that firms controlled by foreign investors adopt the same cash-holding policy as the other firms (controlled by family and state owner). The board size coefficients exhibit a nonsignificant and positive effect on cash holdings. Accordingly, we can conclude that corporate cash holdings depend on gender diversity, investment strategy, and funding policy.

Table 5
Liquidity Risk and Gender Diversity

	LnCASH	LnCASH	LnCASH
PWOM	1.330**		
Ln NWOM		0.014**	
DWOM			0.189**
lnSIZE	0.017	0.010	0.009
BSIZ	0.011	0.008	0.008
UFOR	0.325	0.312	0.312
LnMBVA	−0.727***	−0.715***	−0.715***
LnLDME	−0.457***	−0.452***	−0.452***
LnGROW	−0.142***	−0.142***	−0.142***
Constant	−0.650	−0.319	−0.498
R-squared	**0.3701**	**0.3652**	**0.3652**

Note: **LnCASH**: The logarithm of the cash ratio; **DWOM**: the presence of women directors; **PWOM**: The proportion of women directors; **LnNWOM:** The logarithm of the number of women on the board of directors; **LnLDME**: The logarithm of the leverage ratio; **LnGROW**: the logarithm of growth rate of assets; **LnSIZE**: The logarithm of the book value of assets; **UFOR**: the presence of a foreign ultimate owner; **BSIZ**: the board size; **LnMBVA**: the logarithm of the market to book value of assets; *. **. ***denote significance levels of 10%, 5%, 1%, respectively.

Additional Analysis: Other Risk-Taking Measures and Gender Diversity

Risk-taking is a multidimensional concept that cannot be captured by the financial dimension (Gilley, Walters, & Olson 2002). To test the robustness of our results, we estimated risk-taking using other proxies (both strategic and financial). Strategic risk-taking proxies are: (a) the annual growth rate of assets **GROW**; (b) the level of investment opportunities of the firm **MBVA**; and (c) R&D expenditure on assets ratio **RDEX**. In fact, R&D is a risky investment compared to capital expenditure on tangible assets (Bhagat & Welch, 1995).

In terms of financial proxies, we considered: (a) **LEVR** is the ratio of the book value of long-term debt and assets and (b) **LDME** is the ratio of the book value of long-term debt and market value of equity. We also used standard deviation of daily stock returns of the fiscal year to measure total risk **SDRT.** In the regression of total risk, we used **LEVR** and **RDEX** as control variables. Since debt policy and risk depend on the firm performance, ROA, the return on asset ratio, is used as a control variable in two regressions: total risk and leverage regressions.

The estimation of all regressions[9] reports no significant effect of gender-diversity in boards on all risk variables. Hence, neither risky investment decisions nor risky financing decisions are explained by the presence of female directors in boards. However, the presence of women directors has a positive effect on cash holding.

As a conclusion, our results provide evidence that women do not affect risk-taking behaviours. One explanation could be that governance mechanisms in Tunisia do not promote challenging activities and cannot therefore favour "positive" risk-taking. The results show that risk variables are explained by control type (UFOR) and financial constraints (BSIZE, LnCASH, LnSRDT, LnLDME, ROA). This is consistent with Atkinson et al. (2003) and Johnson and Powell (1994).

In addition, we found a significant and positive effect of board size when risk-taking was measured by R&D expenses and debt-to-market value of equity ratio (LDME) and a negative and significant effect on investment opportunities (MBVA).

The results for the relationship between risk-taking and board size are inconclusive. On one hand, this is not consistent with agency theory prediction; large boards in our sample are tempted to invest in risky investments (for instance R&D investment) and engage in risky financing tools. However,

these results are consistent with resource dependency theory findings: Large boards strongly connected to their external environment are more able to handle environment uncertainty as they can access more resources than other firms (Pfeffer & Salancik, 1978). Accordingly, large boards have access to more skills and resources to select and manage R&D investment. Similarly, firms interested in R&D very often have large but not gender diverse boards.

On the other hand, consistent with agency theory, large boards are ineffective in terms of control tools, which reduce investment opportunities. In contrast, there is no significant relation between board size and other risk-taking variables (LEVR GROW). These findings may explain why total firm risk (SDRT) does not depend on board size.

Furthermore, the presence of a foreign ultimate owner reduces R&D investment and increases the investment opportunities and leverage ratio. Long-term debt is therefore assigned to investments with less uncertainty and more stable and certain benefits. In fact, it is commonly argued that foreign owners invest less in R&D than other firms (state- and family-controlled firms). State-controlled firms invest in R&D activities to signal the quality of their governance and to enhance their reputation in the market (e.g., Molas-Gallart & Tang, 2006; Munari, Roberts, & Sobrero, 2002). From an inheritance plan, family firms represent a legacy that must be transferred from generation to generation. Consequently, they make their investment decisions based on a long-term profit maximization objective (e.g., Casson, 1999; James, 1999).

In addition, results show a negative and significant effect of corporate performance (ROA) on leverage ratios (LEVR and LDME) and total risk, which indicates that poor-performing firms are tempted to make more risky financing decisions. Indeed, such firms rely on debt to improve their performance by investing in risky projects. However, findings report a positive and significant effect of corporate performance on investment opportunities and growth assets rate. Hence, successful firms invest in asset growth and have better investment opportunities. Finally, risky investments (R&D) are positively associated with total firm risk (SDRT). Not surprisingly, high-risk investments globally induce a high-level of total risk.

Ultimate Owner Identity Effect on the Gender Diversity and Risk-Taking Relationship

In the case of Tunisian corporate boards, in particular nonfinancial corporate boards, there is only one woman who is politically connected. Among 16 family-controlled firms, six firms have appointed women on their boards. However, these women are very often wives or daughters of founding-family members. The 12 state-controlled firms in our sample are no different: six firms have appointed women directors in their boardrooms who are state bureaucrats and were political or public officers.

We focus on the affiliation of women directors in our sample and introduce the following gender-diversity variables:

WPCO: Refers to the number of women directors politically connected. A firm is considered to be politically connected if majority shareholders or one of its officers or directors is a member of parliament, a minister or government leader, or is politically connected through, for example, family/friendship ties (Boubakri, El Goul, & Saffar, 2013; Faccio, 2006).

WSTA: Refers to the number of women directors who are state bureaucrats. Women bureaucrats are state-appointed directors. In this study, we distinguished between politically connected women and state-employed women. The first group of directors represents top bureaucrats who intervene and influence more firms' decisions, while the second group of directors encompasses employees of public administration or ministers.

WFAM: Refers to the number of women directors who are founding family directors.

Regression results (see Table 6) confirm the robustness of our previous findings for total risk, leverage ratio, growth rate, and R&D expenditures. Hence, the gender-diversity variables on the affiliation of women on boards do not affect these risk-taking variables. We point out, however, a significant effect of gender diversity variables on risk-taking when it is assessed by CASH (financial dimension) or MBVA (managerial dimension). For instance, the presence of politically connected

Table 6
Gender Diversity, Women Affiliation, and Risk-Taking Measures

	LnCASH	LnMBVA
WPCO	0.400*	0.271**
WSTA	0.013**	−0.003
WFAM	0.008	−0.002
BSIZ	0.004	−0.046*
LnMBVA	−0.756***	
Lnsize	0.030	0.028
LnLDME	−0.462***	
LnGROW	−0.195***	
UFOR	0.325	0.413***
ROA		1.415***
LnCASH		0.003
Constant	−0.535	−0.002
R-squared	0.3924	0.1260

Note: **LnCASH:** The logarithm of the cash ratio; **WPCO** is Female directors who are connected politically; **WSTA** is women directors who are state bureaucrats; **WFAM** is women directors who are members of family when the ultimate owner is the family; **LnLDME**: The logarithm of the leverage ratio; **LnGROW**: the logarithm of growth rate of assets; **LnSIZE:** The logarithm of the book value of assets; **UFOR**: the presence of a foreign ultimate owner; **BSIZ**: the number of directors on board; **ROA**: return on assets ratio; *. **. ***denotes significance levels of 10%, 5%, 1%, respectively.

women on corporate boards positively and significantly affects investment opportunities. State/bureaucratic women positively influence cash holding, which is consistent with resource dependence theory; politically connected women and women state officers rely on their network and use their connections to cope with environment uncertainty. In fact, women bring more resources than firms without women on corporate boards (Pfeffer & Salancik, 1978). Hence, the presence of women on corporate boards helps firms hold more cash and have more investment opportunities. Accordingly, *H2* is supported.

We highlight that this study covers the ex-ante revolution period where the appointment of women on corporate boards is a policy tool to enhance corporate strategies and set up a favourable public policy environment (Baysinger, 1984).

In family firms, we noticed no significant effect of all risk-taking variables. This indicates the ineffectiveness of the board of directors in the presence of a dominant shareholder like a family owner. What's more, it seems that women directors have little or no ability to influence firm business or board composition. Another explanation for the non significant effect is that women are sitting on the boards for the sole aim of implementing the strategy of the controlling shareholder. Accordingly, *H3* is not supported.

The Effect of Board Gender Diversity on the Relationship between Corporate Board Characteristics and Firm Risk-Taking

We tested the indirect influence of the gender-diversified board on firm risk-taking. It's important to consider the specificity of the Tunisian context that firms are facing severe agency problems between controlling and minority shareholders (La Porta et al., 1999) and that the market is poorly regulated. Expropriation risk of minority shareholders is significant (Kim, Kitsabunnarat-Chatjuthamard, & Nofsingeret, 2007).

The presence of a dominant shareholder promoting the presence of independent directors on the board is a positive signal of maximizing shareholder wealth as it enhances information transparency and therefore deters opportunistic behaviour. On the contrary, the presence of affiliated and connected directors worsens asymmetric information and shows the presence of an entrenchment strategy of large shareholders (Dahya et al., 2008; Yeh & Woidtke, 2005).

In Tunisia, previous studies on the effectiveness of corporate boards are mixed. For instance, Khanchel (2007) argued that large boards are more effective in terms of controlling management actions. Large boards increase firm performance while the presence of outside directors and CEO split functions have no significant effect when considering the endogeneity between ownership, corporate board characteristics, and firm performance (Turki & BenSedrine, 2012). The ineffectiveness of board independence comes from interrelationships between internal and external board members in Tunisian-listed firms. In the same vein, Ben Cheikh and Loukil (2013) showed that board independence has no effect on CEO power.

In contrast, Loukil and Yousfi (2013) showed that in large boards, the split functions of executive and control can mitigate information asymmetry. As such, we divided our sample into two subsamples: firms with no women directors and firms with women directors. We regressed board characteristics on risk-taking proxies in each group. To capture board independence, we considered two additional variables:

- **INDP**: Directors are independent if they do not hold an executive position in the firm and are not affiliated in any way to the firm. From an agency perspective, independent directors are supposed to defend minority shareholders' interests. Hence, the independent directors have a commitment to undertake low risk investment/decisions.
- **SPLI**: The separation between the functions of CEO and chairman is used as the second indicator of board independence.

The subsample compositions in Tables 7 and 8 present the estimation results. The results are not significant.

Results indicate that board size and board independence affect risk-taking proxies in both subsamples. Accordingly, the presence of women on corporate boards affects some strategic and financial decisions. In firms with women directors, board size coefficient is positive and significant when risk-taking is measured by R&D expenses. In these firms, we found that board size negatively and significantly affects cash-holding. We can conclude that the presence of women on the board increases the effectiveness of large boards (BSIZ, INDP, see Table 8, panel A). In the financial literature, it is strongly argued that a large board brings more resources and more business connections along with high coordination costs (under asymmetric information). Our empirical findings show that women on boards diminish potential conflicts between directors, strengthen the relationship between directors and the board, and reduce coordination costs.

Table 7
Subsamples Composition

		Energy	Industrials	Health care	Consumer goods and services	Telecommunication	Total
Without women	**N**	5	7	1	12	1	26
With women	**N**	2	2	1	8	1	14

Table 8
Board Effectiveness, Gender Diversity, and Managerial Risk-Taking

	No women Ln RDEX	Women Ln RDEX	No women LnGROW	Women LnGROW	No women LnMBVA	No women LDME
BSIZ	0.325	**2.175*****	−0.008	−0.028	**−0.036***	**0.100****
INDP	0.373	2.811	**0.678****	**−0.417***	0.024	0.211
SPLI	**−2.820*****	−0.320	0.029	0.149	0.096	−0.064
lnSIZE	−0.787*	−0.186	0.042	0.198	0.722	0.156
LnCASH	0.299	1.985*	−0.124***	−0.012	0.040	−0.557***
LnSRDT	0.513	3.811***	0.004	0.005	0.010	0.067
UFOR	−3.655***	−8.963***	−0.022	−0.432***	0.392***	−0.415
ROA			1.554***	3.394***	1.288***	−6.331***
Constant	−0.030	−15.521	−1.942**	−4.447**	−0.761	−3.653
R-squared	0.4712	0.5776	0.1257	0.4988	0.2247	0.5360
N	189	66	167	59	189	189.000

	Women **LnCASH**	Women **lnSRDT**
BSIZ	**−0.128*****	−0.074
INDP	**−1.410*****	**−0.996*****
SPLI	0.056	0.201
lnSIZE	−0.279**	0.090
UFOR	1.185***	
ROA		−0.952
LEVR		0.024
Ln RDEX		0.014
LnMBVA	−0.695***	
LnLDME	−0.504***	
LnGROW	−0.068	
Constant	6.245**	−4.677**
R-squared	0.8537	0.2511
N	59.000	67.000

Note: **LnRDEX:** The logarithm of the ratio of R&D expenditure scaled by assets; **LnGROW**: The logarithm of growth rate of assets; **LnMBVA**: The logarithm of the market to book value of assets; **LnLDME**: The logarithm of the leverage; **LnCASH:** The logarithm of the cash ratio; **LnSDRT**: Total risk; **BSIZ**: board size; **INDEP**: % of independent directors ; **SPLI**: Separation between the functions of CEO and chairman; **ROA**: Return on assets ratio; **LnSIZE**: The logarithm of the book value of assets; **UFOR:** the presence of a foreign ultimate owner; *. **. ***denote significance levels of 10%, 5%, 1%, respectively.

Hence, the presence of women on corporate boards leads directors to engage in R&D investments and to use cash holding for investments. In firms without women directors, we detected a negative and significant effect of board size ($p < 0.1$) on investment opportunities and a positive and significant effect ($p < 0.01$) on the level of leverage (LDME). Hence, when there is no woman director, large boards are ineffective in the sense they fund low-profit investment opportunities that rely on high leverage. These findings indicate that these firms undertake risky financing decisions but not risky investment decisions. When we used assets growth as a risk-taking proxy, the proportion of independent directors coefficient is positive and significant ($p < 0.05$) in firms without women directors and negative and significant ($p < 0.1$) in firms where there are women on the board.

In addition, for firms with women directors, we found a negative and significant effect ($p < 0.01$) of the proportion of independent directors on total firm risk. These findings imply that the presence of women on boards leads independent directors to take low-risk and more conservative decisions and reduces both internal growth and total risk.

Gender diversity is considered a measure of board independence; our results highlight that the presence of women increases board independence, which consequently reduces risk-taking. In contrast, we found that firm risk-taking increases with the proportion of independent directors when there are no women on the board. This is consistent with the stewardship perspective arguing that inside directors and affiliated directors are most effective. Indeed, under asymmetric information they are well informed and closer to the management team than are outside directors. We are tempted to think that the absence of women directors worsens conflicts between insiders and independent directors. Thus, the lack of cooperation and trust between the board and management will reduce the board's effectiveness and increase the risk-taking problem. For CEO split functions, the only significant coefficient appears when we used R&D expenses and in firms without women directors. This coefficient is negative and significant ($p < 0.1$). This finding is in line with the assumption that split function reduces managerial discretion, which induces risky investment decisions.

Discussion

Summary

Despite the considerable work promoting gender diversity in Tunisia, few women are on board. Most of them are politically connected and/or members of the founding family and are small board members. The analysis of the ownership structure shows that foreign ultimate owners exclusively have male directors on board. We found the following: First, women's participation on the board increases cash holdings and under specific conditions decreases the level of leverage. This may signal a risk avoidance-behaviour. In contrast, we found no significant effect when we considered R&D investment, internal growth, investment opportunities, and total risk as measures of risk-taking. Accordingly, women on boards have no significant effect on managerial and strategic risk-taking. Second, women on boards who are politically connected state officers have a positive effect on cash holding and investment opportunities. Third, foreign investors do not invest in firms with gender-diverse boards. They prefer low-risk investments relying on long-term debt. Finally, foreign controlled firms have no women appointed in their boardrooms despite the fact that very often foreign owners come from developed countries that are more concerned with the gender-diversity issue. In addition, we show that these firms display high long-term leverage ratio and have insignificant R&D investments. In fact, they prefer relying on long-term debt to fund low-risk activities.

Our results provide evidence that women display risk avoidance behaviour when it comes to financial risk-taking. However, women do not significantly affect the propensity to take risks if other risk-taking dimensions (strategic, managerial, corporate, etc.) are considered. Only politically connected and state-affiliated women have a significant effect on corporate cash policy and investment opportunities.

Contributions to Scholarship

This study provides empirical support that increasing women's representation in top decision-making positions may lead, under specific conditions, to better decision-making within the boardroom. This could enhance the quality of corporate governance and therefore firm's performance by decreasing liquidity risk and increasing firm survival. In addition, we provide evidence that the impact of women also seems to vary depending on their affiliation and their network.

Applied Implications

The current paper provides new insights for policy-makers to support more effective gender-diversity policies. Many emerging countries, like Tunisia, Turkey, and Lebanon aim to increase the number of women in top decision-making positions, but the programs they introduce are advantageous only for women who are members of the founding family of the business and/or politically connected. For financiers and practitioners, our results show that women on boards may improve corporate governance, decrease risks, and improve firm survival, particularly in periods of crisis.

Limitations and Future Research Directions

Although this study was conducted on a small sample size, it contributes to the existing literature. Unfortunately,

we cannot generalize our results to other developing markets as little empirical evidence is provided in the financial literatures on emerging economies.

Despite the increasing number of policies on diversity promoting gender equality in particular, when it comes to practice, women continue to face barriers in their careers. In fact, Tunisian women hold 1.2% of seats in the boardrooms of Tunisia's 30 largest firms. Moreover, half of Tunisian women directors work in the financial sector (Singh, 2009). It would be interesting to analyze the reputational effects of appointing women in the board on stock liquidity. This could be more appropriate for limited-size samples such as those in emerging markets.

In addition, it would be interesting to conduct similar studies on many emerging markets and integrate political and social interference dimensions. However, addressing the same questions on a large sample encompassing many emerging countries would add significant challenges to analyzing their effects on risk-taking measures.

Notes

1 For instance, the percentage of women directors increases in countries where there is no wage gap and/or in the presence of women empowerment policies. In that sense, it stands to reason that countries such as Croatia, Czech Republic, and Slovenia are more likely to have women on boards.

2 For example, De Vita (2008) reports in *Management Today,* that "women…have a greater desire to build firm foundations that will endure." In *Woman Capital*, O'Conner (2008) argued that after Iceland bankruptcy, a government official announced that two women will rebuild the financial system and says: "Now, the women are taking over… to clean it up."

3 Maxfield, Shapiro, Gupta, and Hass (2010) highlighted that labelling women as risk-averse may incite the reverse in women and limits the positive benefits that both women and organization can gain from their risk-taking.

4 Klenke (2003) says: "the extent to which men and women behave in a manner that is consistent with the sex role stereotypes society holds for them and socially prescribed expectations for both genders" p. 1029.

5 Singh (2007) argued that women "are responding to calls for increased diversity for better governance and better use of available talent" (p. 2131).

6 See among others Boubakri et al. (2013), John et al. (2008) and Denis and McConnell (2003). The main conclusion is that firm value increases (respectively decreases) with high foreign (respectively government) ownership, which is likely a result of a more (respectively less) risky investment policy. However, foreign investors may adopt more conservative (low-risk) investment decisions than those undertaken by domestic institutional investors.

7 Despite the fact that the sample consists of 30 listed nonfinancial firms in the Tunisian Stock Exchange market, the study covers a long-term time period of 14 years (between 1997 and 2010) to check the robustness of our results econometrically speaking. In addition, the few studies conducted on the European markets show quite similar statistics when it comes to comparing conclusions on gender diversity on boards and financial risk-taking by country in France, Italy, Spain, and so forth (see among others Cosentino et al., 2012; Faccio et al., 2012). Furthermore, there are some comparable studies on similar corporate governance issues such as the affiliation of a board's members and ownership structure on the Tunisian market. More recently, Loukil and Yousfi (2013) conducted a study on a sample of 49 financial and nonfinancial firms. We highlighted that we cannot consider the financial sector in the current study as risk-taking is differently assessed and estimated (see Berger et al., 2012). The study joins the recent main stream of the literature on gender diversity in emerging markets (e.g., Mahadeo et al., 2012 conducted a study on 39 firms in Mauritius during 2007).

8 In order to overcome this problem, we considered the remaining logarithm of these variables.

9 Regression results not reported.

JEL Classifications: G30, G32, G34

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