Female directors and firm performance in Italian and Spanish listed firms

Does masculinity matter?

Directoras y desempeño de empresas en empresas cotizadas italianas y españolas

¿Importa la masculinidad?

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Abstract

Purpose – The purpose of this paper is to examine the relationship between women on the board of directors and firm performance in a comparative analysis between Italy and Spain.

Design/methodology/approach – The generalized method of moment is employed to examine this relationship in a sample of 1,393 firm-year observations.

Findings – The results show that the presence of women on the board has a positive impact on the performance of Italian and Spanish firms. However, when the whole sample is divided into Italy and Spain, some results are remarkable. For Spain, the presence of women on the board has a positive influence on firm performance, whereas for Italy the authors find a negative and significant effect on firm performance. This study also finds that the "masculinity" dimension has a negative impact on firm performance.

Practical implications – The results of this study have several practical implications. First, masculinity differences within the countries can have a large impact on firm performance and can explain some differences between similar countries. Second, the legal system of countries might not explain adequately some differences in the decision-making process. Third, cultural values and thinking styles, in terms of masculinity, might better explain why the results on the relationship between female directors and firm performance are mixed. Fourth, the findings suggest that it is very important to promote gender equality, not only by passing laws but also taking action about the educational system.

Originality/value – To the best of the authors' knowledge, this is the first study that investigates the relationship between female directors and firm performance between Italy and Spain considering the cultural differences in term of "masculinity."

Keywords Masculinity, Firm performance, Women in the board

Paper type Research paper

JEL Classification — G30, G34, M14

Juan F. Martín-Ugedo and Antonio Mínguez-Vera acknowledge financial support from Fundación CajaMurcia and Spanish Government (Project No. RTI2018-093884-B-I00).

Resumen

Objetivo – el objetivo de este trabajo es examinar la relación entre la presencia de mujeres en el Consejo de Administración y el rendimiento de la empresa, realizando un análisis comparativo entre Italia y España.
Diseño/metodología/Enfoque – Se emplea el método generalizado de los Momentos (GMM), utilizando una muestra de 1.393 observaciones.
Resultados – los resultados muestran que la presencia de mujeres en el consejo tiene un impacto positivo en el rendimiento de las empresas italianas y españolas. Sin embargo, cuando se analizan por separado ambas submuestras se obtienen algunos resultados destacables. Para España, la presencia de mujeres en el consejo tiene un efecto positivo, mientras que para Italia la influencia resulta negativa. Este estudio también muestra que la dimensión "masculinidad" tiene un efecto negativo en la rentabilidad de la empresa.
Implicaciones prácticas – Los resultados de este estudio tienen varias implicaciones prácticas. En primer lugar, la diferencia en la masculinidad entre países puede tener un gran impacto en el rendimiento de las empresas y explicar algunas diferencias entre países de características similares. En segundo lugar, el sistema legal de los países podría no explicar adecuadamente algunas diferencias en el proceso de toma de decisiones. En tercer lugar, los valores culturales y el modo de pensar, en términos de "masculinidad" podría explicar mejor el hecho de que los resultados de la relación entre consejeras y rendimiento de la empresa no sea concluyente. En cuarto lugar, nuestros hallazgos sugieren que es muy importante promover la igualdad de género no sólo a través de la aprobación de leyes, sino también actuando sobre el sistema educativo.
Originalidad/Valor – Que tengamos conocimiento, este es el primer estudio que investiga la relación entre la presencia de consejeras y rendimiento de la empresa para Italia y España considerando las diferencias culturales en términos de "masculinidad."

Palabras clave Masculinidad, Desempeño empresarial, Mujeres en los consejos de administración
Tipo de papel Trabajo de investigación

1. Introduction

Throughout the twentieth century, women have quickly engaged in most community, social and economic activities. In developed countries, women now represent around 50 percent of the workforce as well as graduate students. However, there is still an important gap between these indicators and the access of women to top management positions. The phenomenon of women's under-representation at the top of the labor market, as well as wage gender gaps, is usually referred to as the "glass ceiling" (Bertrand *et al.*, 2018).

Academic research about women's representation in top management positions and particularly on corporate boards has focused from two different aspects, ethical and economic (Seierstad, 2016; Compton *et al.*, 2018; among others). Beyond economic arguments, female presence on the boards should be a desirable goal in itself as a low proportion of women on boards would be immoral (Campbell and Mínguez-Vera, 2008; Lucas-Pérez *et al.*, 2015).

Most evidence examining the presence of women on the board from an economic perspective has focused on corporate governance issues. However, there is an increasing literature focusing on other related topics such as corporate social responsibility (e.g. Fernandez-Feijoo *et al.*, 2014; Larrieta-Rubín de Celis *et al.*, 2015; Pucheta-Martínez *et al.*, 2018; Harjoto and Rossi, 2019; among others).

Corporate governance control mechanisms are designed to align the interests of owners and managers of firms. Control mechanisms can be either internal or external to the firm. Both, the Italian and the Spanish markets are considered to be in the continental system or civil law system, in contrast with the US market, which provides most of the available evidence (Adams and Ferreira, 2009; Carter *et al.*, 2010; among others), and which belongs to the common law or Anglo-Saxon system. There are three fundamental differences between common law and civil law systems. Countries with common law systems tend to have more dispersed ownership structures, and stronger investor protection, while the internal control mechanisms, which include the board of directors, are relatively weaker (for a more detailed discussion of the two systems, see La Porta *et al.*, 2002). Thus, board composition may be a more effective control mechanism on aligning interests of shareholders and managers in civil law countries than in common law countries.

There is a large body of research on gender composition of boards. However, previous evidence is not clear on two fundamental questions: the factors influencing the appointment of women to the board and how the number of women on the board may be improved/augmented, and the effect of more women on the board on firm performance (Kirsch, 2018). This manuscript focuses on the second line, the effect of women on the board on firm performance.

To date, the effects of board structure on performance are intertwined, making it very difficult to link board characteristics, including gender composition and firm performance. This manuscript tries to fill a gap in the literature by examining one cultural factor, Masculinity/Feminity and its relation with firm performance. We have found studies examining cultural biases in appointing women to boards (Carrasco Gallego *et al.*, 2011), and how national culture influences the composition and leadership structure of multinational manufacturing firms (Li and Harrison, 2008). However, as far as we know, there is no study examining the effect of masculinity on firm performance, which is our main contribution.

This study provides evidence on two countries, Italy and Spain. The main reason for choosing these two countries is that they have many similarities, because they are civil law countries, such as similar ownership structures, and lower shareholder protection than common law countries. But there is one important cultural difference, the "masculinity" dimension, with higher values for Italy. The goal of this manuscript is to examine the relationship between the presence of women on boards and firm performance in a sample of listed companies in a comparative analysis using data from these two countries.

Ilie and Cardoza (2018, p. 30) argue that "analyses have ignored, to a significant extent, the impact of behavior and cognitive processes on performance. Furthermore, prior investigations have systematically ignored the existing relationship between thinking styles, gender, and individual performance." Carrasco *et al.* (2015) also find significant differences between the countries when considering the relationship between female representation in the boardroom and cultural factors. In addition, according to Hofstede *et al.* (2010), there is a cultural difference on the "masculinity" dimension between Italy and Spain (higher values for Italy). Spain is a country where the keyword is consensus; polarization and excessive competitiveness are not highly regarded. In Italy, the competition among colleagues for promotion can be very strong and women can be excluded. Consequently, female directors may have more prominence in the decision process in Spain than in Italy, and this may result in skepticism in Italian equity markets.

Another contribution of the manuscript is that it confronts some methodological problems raised by the previous literature. According to Adams (2016) and Compton *et al.* (2018), the main hurdle in the empirical analysis of the relationship between gender composition of the board and firm performance is that there are serious problems related to the endogeneity of variables, i.e. omitted variables, reverse causality and measurement error. To address these potential problems, large panel data of non-financial listed companies are examined for a total of 1,393 firm-year observations during the period 2005–2011, employing the system of generalized method of moments (GMM) (Wintoki *et al.,* 2012).

The results obtained show that female directors are more effective in the Spanish boards than in Italian ones in improving the firm performance. When the masculinity factor is considered, the results show that this factor negatively impacts firm performance. That is, masculinity tends to reduce the positive impact on firm performance that the presence of women on the board may have.

The remainder of this study is organized as follows. The next section discusses the related literature and hypothesis development. Section 3 describes the sample and survey methodology. Section 4 presents the discussion of results, and Section 5 contains the conclusions and discussion.

2. Theory and hypotheses

The relationship between several characteristics of the board of directors and firm performance has been extensively studied both theoretically and empirically (e.g. Jensen and Meckling, 1976; Yermack, 1996; Coles *et al.*, 2008). For most variables, the results are heterogeneous. As an example, with board size, Jensen (1993) argued that a smaller board is more effective in carrying out monitoring activities, and Yermack (1996) found that the smallest boards have a positive impact on performance. In contrast, Coles *et al.* (2008) studied a sample of 8,165 observations and found that there is no "one size fit all."

Gender composition of boards is also a recurrent topic in the economic/management literature in recent years. Several papers have tried to synthetize the theory and the previous evidence. One of the most important surveys was published 10 years ago (Terjesen *et al.*, 2009). This paper included more than 400 studies on this topic, from different areas of research, with different theoretical perspectives, as well as with different levels of study – individual, board, firm and industry/environment. These levels and theories tend to overlap. As a consequence, most previous studies do not consider just one theory or approach. Another more recent survey, Kirsch (2018), has analyzed 310 articles from the period 1981–2016. Kirsch (2018) points to four different streams, examining: whether women directors really are different from men on boards; what factors shape board gender diversity; how board composition affects organizational outcomes and regulation of board gender composition. This manuscript focuses mainly on the third stream, how composition affects organizational outcomes, but it also benefits from arguments derived from the other streams.

As pointed out in the introduction, female presence on the board has not only economic/managerial implications, but also an ethical component, due to (possible) discrimination against women. For instance, Gabaldon *et al.* (2016) point that the low female presence on Spanish boards may be due to a demand-led problem. This situation has provoked many countries to legislate in order to get gender quotas on boards. Terjesen *et al.* (2015) distinguish two different kinds of countries/regulations: countries that establish compulsory board quotas for female representation on publicly traded or state-owned firms, and countries introducing non-binding gender quotas, enforcing a "comply or explain" principle. Given that in most countries legislation about the presence of women on boards passed recently, it is difficult to conclude if compulsory or non-binding gender quotas are better. However, Klettner *et al.* (2016, p. 395) argue that "In some circumstances carefully monitored voluntary targets may be more effective at promoting cultural and strategic change at the heart of the corporation. In summary, mandatory quotas (set through hard law usually with sanctions for noncompliance) may achieve early and significant results in terms of female board representation. However, voluntary targets for women's participation on boards and in executive ranks (proposed in soft regulation such as corporate governance codes and set as part of corporate strategy) may promote more effective cultural and practical change in support of greater representation of women in leadership."

The establishment of such quotas, mainly in the case of compulsory quotas, is an attempt to solve an ethical problem, the under-representation of women despite their equal competence. However, it may raise another ethical problem, if women are appointed as board members when they are not the best candidates. A detailed study examining board gender quotas from an ethical point of view can be found in Terjesen and Sealy (2016).

There is little evidence about how quotas work, and that is mainly from Norway, the first country to establish gender quotas. Wang and Kelan (2013, p. 449) find that gender quotas, and the increased representation of women on boards that it has caused, have created "fertile ground for women to take top leadership positions" and it is also positively related to female directors' independent status and qualifications. On the other hand, Bertrand *et al.* (2018) conclude that apart from the direct effect of increasing the number of women on the board, it has had little effect on women in business.

As previously argued, Terjesen *et al.* (2009), and some other studies, such as Kirsch (2018), adopt many different theories that have taken into consideration factors influencing the presence of women on boards, as well as the influence of women on the board on firm outcomes. Most empirical studies consider arguments of several theories simultaneously to present their hypotheses and results. Next, we very briefly summarize the theories that we consider best for this manuscript: agency, social psychological, resource dependence and institutional theory.

Focusing on the agency theory, according to Jensen and Meckling (1976), an agency relationship is a contract under which one or more persons (the principal/s) engages another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent. Agents may have different objectives from the principals. This divergence of objectives may lead to agency conflicts and agency costs.

Fama (1980) argues that a board is efficient when it provides high-quality, impartial advice, and this depends on the independence of its members. This is why a large proportion of outside and independent directors are recommended. Following this reasoning, a more diverse board may increase board independence and thus improve the monitoring and control of management (Carter *et al.*, 2003).

Theories related to social groups such as social identification and social categorization theories, which are based on social psychology, examine how individuals try to surround themselves with people with similar characteristics (demographic profiles, values, etc.) that help them reinforce intra-group communication. According to these theories, individuals divide the group members into in-groups (individuals similar to themselves) and out-groups (individuals dissimilar to themselves), and have a tendency to perceive the former positively and the latter negatively (Nielsen and Huse, 2010). Thus, a more diverse group may be less integrated and the likelihood of dissatisfaction is higher (Milliken and Martins, 1996). As a consequence, these theories predict a negative effect of diversity on group outcomes.

In addition, in most corporate boards, if there are women present, there is only one woman or a small minority of women. Thus, women on the boards are considered tokens and are easily marginalized (Kanter, 1977).

Following resource dependence theory, firms are viewed as operating in an open system, with a need to exchange resources, creating a dependency between the firm and external units. Thus, boards serve to link the firm to other external organizations in order to address environment dependencies (Pfeffer and Salancik, 1978). Resource dependence theory usually points to a positive influence of diversity on group outcomes. For example, greater diversity in working groups may imply a better knowledge of the market and a better identification with customers and employees, increasing the firm's ability to penetrate markets (Robinson and Dechant, 1997). However, women may have fewer relationships with boards of other firms.

Previous empirical evidence on the effect of female directors on firm performance is inconclusive, but a majority of studies show a positive relationship (e.g. Shrader *et al.*, 1997; Welbourne *et al.*, 2007; Adams and Ferreira 2009; in the USA; Campbell and Mínguez-Vera, 2008; Martín-Ugedo and Mínguez-Vera, 2014; in Spain; Rossi *et al.*, 2017; in Italy). Ahern and Dittmar (2012) found a negative relationship for Norway between the representation of women on boards and the performance of firms. Rose (2007) in Denmark, Marinova *et al.* (2016) in the Netherlands and Denmark, and Bianco *et al.* (2015) in Italy found no relationship between the representation of women on boards and performance.

A country's cultural characteristics may also have an important influence on firm governance structures and outcomes. There is no agreement in the social sciences on a definition of "culture" (Carrasco *et al.*, 2015), but according to Hofstede (1980), it is the set of values, beliefs and attitudes that are widely shared within a group of people. Institutional theory assumes that organizations are subject to the institutional environment, including

the culture of the country where they operate. Models are based on the institutional norms in a specific country/society (Meyer and Rowan, 1977). Thus, the legislation that many countries have implemented in order to set gender quotas on the boards is a relevant part of the institutional environment. Such norms include shared values and beliefs of a country/society (Carrasco *et al.*, 2015). Following these arguments, Terjesen and Singh (2008) identified three factors relating to social, political and economic environments influencing the presence of women on boards. They found a positive relationship between women on the board with women in senior management levels, smaller gender pays gaps and a shorter period of women's political representation. Recent publications, such as Seierstad *et al.* (2017), go beyond the institutional factors, focusing on the role of actors, examining the importance of the political games influencing the presence of women on boards.

Hofstede (1980) identifies four cultural dimensions in the characteristics of countries: Power distance, Individualism/Collectivism, Masculinity/Feminity and Uncertainty avoidance. Focusing on Masculinity/Feminity, some characteristics, such as competitiveness and ambition, are typically considered masculine values. In contrast, an emphasis on care for others is considered more feminine (Hofstede, 1980; Li and Harrison, 2008).

There is little previous evidence on Masculinity/Feminity and the presence of women on boards of directors. The papers most directly relevant to this study are by Carrasco Gallego *et al.* (2011) and Carrasco *et al.* (2015), which examine cultural biases in appointing women to boards and by Li and Harrison (2008) which studies how national culture influences the composition and leadership structure of multinational manufacturing firms of in 15 countries.

2.1 The Italian and Spanish scenarios

The Italian scenario. In Italy, the representation of women on boards is low, but it has increased over the last 10 years. One reason for the rise is that in 2011 Parliament passed a law which provides that as by 2015 a third of boards of state-owned enterprises must be women.

At the end of 2008, according to the data of Annual Consob Reports, the number of women on boards of directors of listed Italian companies amounted to 170 (5.9 percent), while in 2011 the number had risen to 193 (7.4 percent). In total, 51.7 percent of companies having at least one woman director (Commissione Nazionale per le Società e la Borsa, 2011). The Italian figures for 2011 were still lower than many non-European countries and other Eurozone countries.

In only two years, the percentage of women on boards more than doubled, from 7.4 percent in 2011, year that the Parliament passed the law, to 17.8 percent in 2013. In addition, in 83.5 percent of Italian-listed companies there was at least one woman on the board of directors by 2013 (Commissione Nazionale per le Società e la Borsa, 2014). In 2014, the female representation on boards reached 22.7 percent, surpassing many countries, including Spain, that moved from 9.3 percent in 2011 to 18.2 percent in 2013. In other words, as a result of mandatory gender quotas, Italy went from 16th to 17th place in the ranking drawn up by Catalyst (2014).

In Italy, few studies have investigated female representation in the boardroom. Our aim is to add to the literature on female representation on boards of directors by considering a different time horizon from other studies and examining the topic from a comparative perspective with Spain.

Bianco *et al.* (2015) investigated 262 Italian-listed companies in 2009 and found no relationship between the presence of women and performance. However, the authors found that the presence of women is higher when ownership is concentrated and in companies belonging to the technology sector. In addition, they found that the relationship between women and good governance, as measured by proxies such as participation and the frequency of meetings, seems to be negative, especially in family businesses.

Del Prete and Stefani (2015) examined the banking sector for the period 1995–2010. They found, except for specific cases for the ROA, no significant relationship between the presence of women on boards and firm performance. They observed, instead, that the representation of women tends to reduce exposure to risk and concluded that the presence of women in banks can be beneficial to economic performance.

Schwizer *et al.* (2012) examined 237 Italian-listed companies during the period 2007–2009, and came to the same conclusion; there is no relationship between the presence of women and performance. Instead, they observed a positive correlation between gender diversity and the number of meetings, concluding that having women on the board of directors improves monitoring activity and, as a result, the quality of corporate governance.

The Spanish scenario. In recent decades, there has been a strong move to incorporate women into the workforce in Spain. The Spanish Statistics Institute (Instituto Nacional de Estadística) shows that in 2006 approximately half the workers in Spain were women (48.6 percent of workers), whereas in the 1960s women comprised only about 21 percent of the workforce and in 1980 about 28 percent.

Although the education and labor force statistics in Spain are similar to those of the USA or Western Europe in recent years, a similar change has not occurred regarding the representation of women in positions of corporate responsibility. In 2007, in Spain, only 3.1 percent of directors were women (Corporate Women Directors International, 2007). Spanish data slightly improve when the 35 largest capitalized listed firms (IBEX 35) are excluded. In this case, the percentage of women directors rises to 6.7 percent. The larger percentage may be explained by the fact that in non-IBEX 35 firms, women represent family-shareholder interests in a larger proportion (Martín-Ugedo and Mínguez-Vera, 2014).

There are several other explanations for this low representation of women on Spanish boards. One explanation that is particularly worrying is discrimination against women. Mateos de Cabo *et al.* (2011) examined this possibility and found some signs of discrimination. They observed that there are firms that systematically underestimate the ability of women to fill board positions, a situation that tends to disappear when companies already have female directors.

To correct this situation, the Spanish Government has been taking a series of measures. In 2006, the Comisión Nacional del Mercado de Valores (CNMV) – the Spanish equivalent of the SEC in the USA – introduced the Código Unificado de Buen Gobierno (2006) (Unified Code of Good Governance). In Article 15, this Code recommends positive discrimination in boards of directors to reflect the diversity of knowledge, gender and experience required to perform their functions effectively, objectively and independently. The Ley de Igualdad (Gender Equality Act (2007) recommends – it is not mandatory unless the company is to bid for public contracts – that at least 40 percent of directors be women by 2015 in public and private firms with more than 250 employees. The Ley de Economía Sostenible of 2011 (Ley 2/2011, 2011), among its different goals, also tries to promote gender equality in public administration, in public services and in the staff of public universities. This non-mandatory legislation contrasts with binding quotas established in Spain for political elections (Verge and Lombardo, 2015; Hernández-Nicolás *et al.*, 2018).

The proportion of women on Spanish boards of directors has not reached the expected level following this non-compulsory legislation. This may be one reason why in 2015 the CNMV introduced the Código Unificado de Buen Gobierno de las Sociedades Cotizadas (2015) (Code of Good Governance of Listed Firms). Article 14 recommends that at least 30 percent of directors should be women by 2020 (a lower and probably more realistic goal than the one set by the same institution in 2006).

The evidence about the influence of gender diversity of the board on firm performance in Spain is limited but generally shows a positive relationship. For example, Campbell and

Mínguez-Vera (2008, 2010) found a positive effect of gender diversity on Tobin's *Q* and stock returns for listed firms, and Martín-Ugedo and Mínguez-Vera (2014) found a positive influence of gender diversity on accounting return measures for small and medium enterprises. Bravo *et al.* (2015) found that Spanish companies that appear to have higher reputation tend to have more female directors on their board. The positive relationship observed in the Spanish market between females on the board and firm performance could be due, at least in part, to this factor.

2.2 Cultural differences between Italy and Spain: the "masculinity" dimension

Hofstede (1980, 2001) and Hofstede *et al.* (2010) argue that the cultural values of countries affect decision-making processes and corporate values. Among these factors, the most complex and controversial measure is the masculinity/femininity dimension: "The dominant values in a masculine society are achievement and success; the dominant values in a feminine society are caring for others and quality of life" (De Mooij and Hofstede, 2001, p. 89). Heller and Gabaldon (2018) show the importance of this variable in a sample of 15 Latin American countries. According to Hofstede *et al.* (2010), Spain is a country where the keyword is consensus; polarization and excessive competitiveness are not highly regarded. Spanish children are educated to seek harmony, refusing to take sides or stand out. There is a concern for weak and needy people that generates a natural current of sympathy. Managers like to consult their subordinates to know their opinions and, on that basis, make their decisions. In politics, it is desirable to have the participation of all minorities, trying to avoid domination by just one winning party.

In Italy, competition among colleagues for promotion can be very strong and women can be excluded. Consequently, female directors may have more prominence in the decision process in Spain than in Italy, and this may result in skepticism in Italian equity markets. Italy scores 70 for "masculinity" while Spain scores only 42. In Italy, one is more likely to see individualist behavior that can exclude women from the decisions of boards of directors where they are a minority. On the other hand, in Spain, teamwork is considered to be something totally natural, and employees do not need strong motivation from management to work in this way (Hofstede *et al.*, 2010).

Based on the framework proposed by Hofstede *et al.* (2010), a growing literature in economics and finance has dealt with the role of cross-national cultural differences in decision making by individuals and organizations (Guiso *et al.*, 2009) and how culture affects different aspects of corporate governance (Licht, 2001; Licht *et al.*, 2005; Boytsun *et al.*, 2011; Griffin *et al.*, 2015). For example, Van Oostveen *et al.* (2014) found that culture affects female board representation and that the "masculinity" dimension has a positive impact on firm performance and a negative effect on the presence of women in the boardroom in European countries. In contrast with this, Frijns *et al.* (2016) found that national cultural diversity on boards negatively affects firm performance measured by Tobin's *Q*. They also found that it is mainly diversity in individualism and masculinity that affects performance. But Griffin *et al.* (2015) argued that controlling shareholders in high masculinity countries are less likely to adopt good corporate governance practices because they are less concerned about the well-being of others.

2.3 Hypotheses

Italy and Spain have many similarities, based on them being civil law countries, such as similar ownership structures, and lower shareholder protection than common law countries. However, they also have some differences. The "masculinity" dimension was presented in Section 2.2, and Italian women seem to have a weaker role in the workplace than those in Spain. In addition, most previous empirical studies in Italy show a negative relation

between the presence of women on the board and firm performance, or no relationship at all (Bianco *et al.*, 2015; Del Prete and Stefani, 2015; Schwizer *et al.*, 2012). In contrast, most evidence for the Spanish market shows a positive relationship between gender diversity and firm performance (Campbell and Mínguez-Vera, 2008, 2010; Martín-Ugedo and Mínguez-Vera, 2014). As a consequence, and considering arguments presented in Sections 2.1 and 2.2, we propose the following hypotheses:

H1. The presence of women on the board of directors is more efficient for improving the firm performance in Spanish companies than in Italian ones.

H2. The relationship between female directors and firm performance is negatively influenced by the "Masculinity" score.

3. Sample, methodology and data analysis

The sample consists of 199 non-financial companies, including 119 companies listed on the Spanish stock market and 80 listed on the Italian stock market for a total of 1,393 firm-year observations over the period 2005–2011. We exclude all financial firms (SIC Codes 6000-6999).

For the construction of the sample, the following selection criteria were used:

(1) The availability of data on the composition of the board, namely the size of the board, the number of independent directors on the board, the number of women on the board and board ownership. This information was taken from the Consob website (for Italy) and from the Report on Corporate Governance of the individual companies (for Italy and Spain);

(2) The availability of data on performance indicators (RETURN ON ASSETS, TOBIN'S *Q*) and other firm-specific indicators (debt ratio, size, age of the firm) for each company included in the sample. Data were acquired by Datastream, Bloomberg, corporate governance reports, Consob website, *Calepino dell'azionista* (Mediobanca) for Italy, and taken manually from the financial statements of the individual companies. For Spain, data were obtained from SABI (System of Analysis of Iberian Balance Sheets, provided by Bureau Van Dijk) database and Madrid Stock Exchange Reports.

Table I shows the description of the sample for Italy and Spain. To get the final sample, we have removed the financial institutions from the initial sample, given that they are supervized by financial authorities that restrain the role of their directors and because they use different accounting practices (Pucheta-Martínez and Bel-Oms, 2015). Finally, we include those firms that have data for all the years of the analysis.

We examine a panel data using a GMM system to detect any problems arising from the endogenous variables. The GMM system (Anderson and Hsiao, 1981; Arellano and Bond, 1991; Blundell and Bond, 1998) is a more powerful econometric tool that captures the two components of endogeneity attributable to the unobservable heterogeneity and the

	2005	2006	2007	2008	2009	2010	2011	No. of observations
Initial Sample of firms	392	402	432	393	413	406	398	2,836
Italy	264	263	266	252	280	277	268	1,870
Spain	128	139	166	141	133	129	130	966
Final sample of firms	199	199	199	199	199	199	199	1,393
Italy	80	80	80	80	80	80	80	560
Spain	119	119	119	119	119	119	119	833

Table I. Sample description

simultaneity of the variables, respectively (Wintoki *et al.,* 2012). The dynamic panel data including two-step GMM system manage any endogeneity problems through the use of a set of lagged variables as instruments for the explanatory variables. The Sargan test, or test for the over-identification of the instruments, is used to measure the validity of the instruments used under the null hypothesis of no correlation between the error term and the variables used. The Sargan test confirms the validity of all the instruments used. The Wald test measures the joint significance of the estimated coefficients, while AR (1) and AR (2) indicate the first- and second-order serial correlation, respectively. The model maintains its validity in the absence of second-order serial autocorrelation (Wintoki *et al.,* 2012).

This methodology has important advantages in comparison to others. For example, ordinary least squares methodology does not solve the heterogeneity bias (all the variables are included as exogenous). The estimation of fixed effects takes into consideration the problem of heterogeneity bias, but not the endogeneity. Two-stage least squares estimation considers the endogeneity bias, but it is not appropriate with samples with lower values of T (number of years) as it is the case in this study (Arellano and Bond, 1991). The system GMM methodology has been commonly used to control endogeneity (e.g. Beck *et al.* 2000; Uotila *et al.*, 2009). In addition, according to Heid *et al.* (2012), system GMM is more adequate when data show high persistence as also happens in this study.

The following equation defines the basic model specification:

$$y_{i,t} = \mu_{\mathrm{i,t}} + \alpha_1 \mathrm{BOARD\_STRUCTURE}_{i,t} + \alpha_2 \mathrm{CONTROL\_VARIABLES}_{i,t} + \eta_{i,t} + \varepsilon_{i,t}, \quad (1)$$

where $y_{i,t}$ is the dependent variable, TOBIN'S Q; $\mu_{i,t}$ is the constant; $_{\alpha 1 \text{ and } \alpha 2}$ are the coefficients; $\eta_{i,t}$ is the temporal dummy; $\varepsilon_{i,t}$ is the residual term and $t = 2005, 2006, 2007, \ldots,$ 2011, respectively.

BOARD_STRUCTURE is measured by the logarithm of board size, Log_Board_Size, Directors_Ownership_ratio, Independent_Directors_Ratio and Women_Directors_Ratio, respectively. In particular, Log_Board_Size measures the number of members on the Board of Directors (in logarithmic form), Directors_Ownership_ratio measures the share ownership of the members of the Board of Directors (number of shares owned by the directors divided by the total number of shares), Independent_Directors_Ratio indicates the proportion of non-executive independent members on the board and Women_Directors_Ratio measures the percentage of women on the board.

By increasing the number of directors, the control exercised over the management could improve, as diversity of opinions and criticisms of the management work is assumed to be greater. This could lead to higher firm performance. However, too large a board could hinder communication, coordination, information processing and, ultimately, the entire decision-making process (Hermalin and Weisbach, 2003). Most empirical evidence shows a negative effect of the number of directors on firm performance (Yermack, 1996; among others).

Directors' ownership is a relevant issue for the effectiveness of a board, but its effect is not clear *a priori*. Morck *et al.* (1988) argue that low levels of director ownership encourage them to monitor effectively (convergence hypothesis) with a positive influence on firm performance. However, once they secure control of the firm, directors can entrench themselves (entrenchment hypothesis) having a negative effect on firm performance.

It is logical to think that independent directors have greater autonomy to judge the performance of managers (Renneboog, 2000). However, the presence of independent directors poses a series of limitations when exercising their supervisory work (Fernández *et al.*, 1998), among which we can mention: the quantity and quality of the information available; less motivation; influence of the way they have been elected. On many occasions, the directors have been proposed by the management, meaning that they have less control; time available. Given that the board's supervisory work entails certain complexity, the time

restriction is a variable to consider, especially for independent directors. These circumstances may provoke a negative effect on firm performance.

Following other studies (e.g. Carter *et al.,* 2003; Rose, 2007; Campbell and Mínguez-Vera, 2008; Adams and Ferreira, 2009; Rossi *et al.,* 2017), we also consider a set of CONTROL_VARIABLES that includes some firm characteristics such as Log_Firm_Age measured as the number of years since the establishment of the firm (in logarithmic form), Debt_Ratio calculated as the ratio between total debt and total assets of the firm, the logarithm of total assets used as a proxy for firm size (Log_firm_Size), Return_On_Assets as measured by operating profit scaled by total assets, and year effects. We also include a dummy variable Italy that takes value 1 when the company is Italian and 0 otherwise, and Italian_Women_Directors_Ratio that measures the percentage of Italian directors who are female. We include a measure of "masculinity" that is invariant over time, taken from Hofstede *et al.* (2010) for Italy, with a score of 70, and Spain, with a score of 42 (Maculinity) and the difference between these two indexes (Maculinity_Difference).

We expect that younger firms will have higher levels of profitability (Lee, 2006). Based on Jensen's (1986) free cash flow theory, we predict a positive influence of debt ratio on firm performance. According to Yang and Chen (2009), smaller companies sometimes suffer less from agency problems and they have more flexible structures to adapt to change. For this reason, we expect a negative effect of the firm size on performance. We predict that the most profitable companies, measured by return on assets, will be more valueable in the market (Richard *et al.*, 2009).

Tobin's *Q* was used as a dependent variable and as an indicator of firm value. It is defined as the sum of the market value of equity plus the book value of the debt divided by the book value of the total assets (Demsetz and Villalonga, 2001). The measures of profitability that the previous studies have used as the dependent variable are very diverse. They can be divided into two groups: those that focus on accounting measures, and those that use Tobin's *Q*. There are several differences between these types of measures, the main one being that accounting variables (such as ROA and ROE) focus on events that have already taken place in the past, while *Q* focuses on future expectations. This may be the reason why most recent studies focus exclusively on Tobin's *Q*[1], as we do in this study.

We conduct a sensitivity analysis, moderating effects, using Women_Directors_Ratio × Independent_Directors_Ratio to measure any interaction between Independent_Directors_Ratio and Women_Directors_Ratio. We also analyze the interaction between the masculinity measures and the percentage of women on the board (Women_Directors_Ratio × Maculinity and Women_Directors_Ratio × Maculinity_Difference).

Table II provides a detailed description and definition of the selected variables.

In Table III, the descriptive statistics are presented. In Panel A, we show the values for the full sample. Tobin's *Q* has a mean (median) equal to 1.12 (0.91), the board size has a mean (median) equal to 9.26 (10.00). The directors' ownership has a mean (median) of 11.91 percent (0.00). The mean (median) of the independent directors is 55 percent (64 percent), while the women on board has a mean (median) of 5 percent (0.00). The age of the firms is equal to 46.96 (40.77). The debt ratio has a mean (median) equal to 39.28 (35.41), and return on assets has a mean (median) of 3 percent (2 percent).

For Italy and Spain (Panels B and C), the mean (median) of board size is 8.61 (9.00) and 9.68 (10.00), respectively. The directors' ownership is similar and equal to 11.39 percent (0.00) and 12.42 percent (0.00) for Italian and Spanish firms, respectively. Tobin's *Q* has a mean (median) of 1.24 (1.11) for Italy and 1.04 (0.52) for Spanish firms. Italian firms have a higher Tobin's *Q* than Spanish firms.

The mean (median) for women on board is 4.61 percent (0.00) for Italy and 5.43 percent (0.00) for Spain. These percentages are very similar although Spain implemented a quota system for most years of the sample. The return on assets is similar for both countries as

Variables	Measurement	Source
Tobin's *Q*	((Book value of total assets – book value of shareholder's equity + market value of shareholder's equity)/ book value total assets)	Bloomberg and hand collection from *Calepino dell'azionista for Italy. SABI database and Madrid Stock Exchange Report for Spain*
Return_On_Assets	Operating profit/Total assets	Bloomberg and Datastream and hand collection from *Calepino dell'azionista for Italy. SABI database for Spain*
Debt_Ratio	Total debt/Total assets	Bloomberg. Datastream and hand collection from *Calepino dell'azionista for Italy. SABI database for Spain*
Firm_Size	Log of total assets	Bloomberg. Datastream and hand collection from *Calepino dell'azionista for Italy. SABI database for Spain*
Independent_Directors_Ratio	% of independent members on board of directors	Hand collection from CONSOB (Italy) and Corporate Governance Reports (Italy and Spain)
Women_Directors_Ratio	% of women on board of directors	Hand collection from CONSOB (Italy) and Corporate Governance Reports (Italy and Spain)
Board_Size	Number of members on board of directors	Hand collection from CONSOB (Italy) and Corporate Governance Reports (Italy and Spain)
Directors_Ownership_ratio	% of shares owned by board of directors	Hand collection from CONSOB (Italy) and Corporate Governance Reports (Italy and Spain)
Firm_Age	Years by firm establishment	*Calepino dell'azionista* and firms' websites (Italy) and SABI database (Spain)
Masculinity	Index of "masculinity"	Hofstede *et al.* (2010) for Italy and Spain

Table II.
Definitions of the selected variables

well; it has a mean (median) equal to 2 percent (3 percent) for Italy, and 3 percent (2 percent) for Spain. The mean (median) of independent directors is higher in Spain than in Italy. Spanish firms have a mean (median) value of 70 percent (80 percent) against the 31 percent (30 percent) for Italy. Also, the debt ratio is higher in Spanish firms than in Italian firms; the mean (median) value is 47.54 (51.76) for Spain against 26.99 (27.57) for Italy.

Comparing the indicators between the two countries, in Table IV, using a *t*-test on the mean, almost all variables are statistically different. For example, Tobin's *Q* for Italian companies is significantly higher than for Spanish firms ($p < 0.01$), but there are more independent directors and women in the boardroom in Spanish firms than in Italian firms ($p < 0.001$ and $p < 0.05$, respectively).

4. Results

Table V presents the results of the main analysis. The values obtained indicate a positive relationship between women on boards and firm value for the entire sample and for Spain. For Italy, the relationship is negative and statistically significant. Overall, these results support our *H1* that women on top management position are more effective in the Spanish context than in Italian context. With the exception of Rossi *et al.* (2017) who found a positive relationship between female directors and firm performance, these results are consistent with most previous evidence for Italian-listed companies.

The results in the Spanish scenario are consistent with agency theory and resource dependency theory. In line with agency theory, the recent literature emphasizes that gender

	Mean	Median	Min.	Max.	SD
Panel A: full sample					
Dependent variables					
Tobin's *Q*	1.12	0.91	0.03	9.99	1.31
Independent variables					
Board_Size	9.26	10.00	4.00	24.00	5.18
Log_Board_Size	0.85	1.00	0.60	1.38	0.39
Directors_Ownership_ratio	11.91	0.00	0.00	99.33	22.43
Independent_Directors_Ratio	0.55	0.64	0.00	1.00	0.33
Women_Directors_Ratio	0.05	0.00	0.04	0.44	0.07
Control variables					
Firm_Age	46.96	40.77	1.00	151.00	32.47
Debt_Ratio	39.28	35.41	0.21	100.00	26.32
Firm_Size	4.27	4.74	1.22	7.96	1.97
Return_On_Assets	0.03	0.02	−1.87	1.14	0.13
Masculinity	53.25	42.00	42.00	70.00	13.73
Panel B: Italy					
Dependent variables					
Tobin's *Q*	1.24	1.11	0.45	5.21	0.55
Independent variables					
Board_Size	8.61	9.00	5.00	21.00	5.33
Log_Board_Size	0.80	0.95	0.70	1.32	0.43
Directors_Ownership_ratio	11.39	0.00	0.00	74.35	22.05
Independent_Directors_Ratio	0.31	0.30	0.00	0.88	0.22
Women_Directors_Ratio	0.046	0.00	0.05	0.33	0.07
Control variables					
Firm_Age	49.30	44.00	1.00	151.00	34.80
Debt_Ratio	26.99	27.57	0.21	100.00	15.27
Firm_Size	3.01	2.93	1.22	5.23	0.87
Return_On_Assets	0.02	0.03	−0.51	0.23	0.07
Panel C: Spain					
Dependent variables					
Tobin's *Q*	1.04	0.52	0.03	9.99	1.63
Independent variables					
Board_Size	9.68	10.00	4.00	24.00	5.03
Log_Board_Size	0.89	1.00	0.60	1.38	0.37
Directors_Ownership_ratio	12.42	0.00	0.00	99.33	22.66
Independent_Directors_Ratio	0.70	0.80	0.00	1.00	0.29
Women_Directors_Ratio	5.43	0.00	0.04	0.44	0.08
Control variables					
Firm_Age	45.39	38.97	1.89	147.55	30.73
Debt_Ratio	47.54	51.76	0.47	100.00	28.85
Firm_Size	5.13	5.60	3.04	7.96	2.04
Return_On_Assets	0.03	0.02	−1.87	1.14	0.16

Table III. Descriptive statistics for the selected variables

diversity within a board of directors can help to improve the governance of companies, extending its supervisory effectiveness (Adams and Ferreira 2009), as well as favoring the reduction of agency conflicts (Terjesen *et al.*, 2009). Carter *et al.* (2003) suggest that a more diverse board increases board independence. This is why increasing gender diversity could be a means to improve monitoring and managerial control. They also comment that women are more inclined to ask questions that would not be asked by male directors. Resource dependency theory implies that greater diversity in working groups provides better knowledge of the market and a better identification with customers and employees, thereby

Table IV.
t-Test comparing the mean of the variables between two countries

	Spain firm mean	Italy firm mean	*t*-Test
Tobin's *Q*	1.04	1.24	2.74***
Board_Size	9.68	8.61	3.79***
Log_Board_Size	0.89	0.80	3.95***
Directors_Ownership_ratio	12.24	11.39	0.68
Independent_Directors_Ratio	0.70	0.31	26.97***
Women_Directors_Ratio	5.43	4.61	1.97**
Firm_Age	45.39	49.30	2.20**
Debt_Ratio	47.54	26.99	15.46***
Firm_Size	5.13	3.01	23.16***
Return_On_Assets	0.03	0.02	0.28

Note: *,**,***Significance at 10, 5 and 1 percent levels, respectively

Table V.
Relationship between Tobin's *Q* and board composition using GMM system

Tobin's *Q*	Full sample	Italy	Spain
Women_Directors_Ratio	0.6670*** (0.2057)	−0.6412*** (0.0913)	1.0077*** (0.0930)
Independent_Directors_Ratio	−0.8447*** (0.1088)	0.1545* (0.0778)	0.3464*** (0.0706)
Log_Board_Size	0.4274*** (0.0077)	0.0190 (0.0400)	−0.4894*** (0.0544)
Directors_Ownership_ratio	0.0007*** (0.0000)	0.0003 (0.0003)	−0.0001 (0.0001)
Debt_Ratio	0.0006*** (0.0000)	0.0061*** (0.0005)	0.0002 (0.0002)
Log_Firm_Size	0.0534*** (0.0017)	−0.0969*** (0.0203)	0.1286*** (0.0056)
Return_On_Assets	1.6262*** (0.0234)	2.6091*** (0.0599)	1.5413*** (0.1142)
Log_Firm_Age	−0.1626*** (0.0045)	−0.1826*** (0.0367)	−0.2739*** (0.0172)
Year	Yes	Yes	Yes
Constant	1.6137*** (0.0108)	1.7785*** (0.0709)	1.4793*** (0.0436)
Sargan test	734.7	802.53	629.41
Wald test	9,319.26	2,829.74	655.47
AR (1)	(0.03)	(0.17)	(0.05)
AR (2)	(0.31)	(0.31)	(0.17)
No. of obs	1,393	560	833

Notes: Standard errors are given in parentheses. *,**,***Significant at 10, 5 and 1 percent levels, respectively

increasing the group's ability to penetrate markets. Similarly, the more diverse a group is, the more different views and perspectives its members will have, as well as more alternative solutions to a problem, leading to more realistic decisions being adopted. So, diversity may increase creativity and innovation and may improve problem solving (Robinson and Dechant, 1997).

The results for Italy support the identification and social categorization theories. According to these theories, individuals divide the group members into in-groups (individuals similar to themselves) and out-groups (individuals dissimilar to themselves), and have a tendency to perceive the former positively and the latter negatively (Nielsen and Huse, 2010). Consequently, more diverse groups may be less integrated and the likelihood of dissatisfaction and turnover is higher (Milliken and Martins, 1996). In addition, heterogeneous groups are more likely to have communication and coordination difficulties that reduce the effective use of knowledge and skills and, as a consequence, there is less cohesion and interpersonal attraction and fewer mutually satisfying interactions among members (Forbes and Milliken, 1999).

The presence of independent directors (Independent_Directors_Ratio) does not seem to increase the firm value, even though the results show a significant difference between the two countries examined separately and the entire sample. For both Italy and Spain, we find

a positive relationship between this ratio and Tobin's *Q*. This relationship is supported by the majority of previous studies and it shows that independent directors improve the efficiency of the board (Renneboog, 2000). The size of the board also seems to increase the value of the firm in the entire sample. However, whereas for Spain the relationship between board size and firm value is negative and significant, according to the findings of Yermack (1996), for Italy the value is positive but not significant. This result may be due to the different size of the board in the two both countries (smaller in Italy). The sign of the Directors_Ownership_Ratio coefficient is positive and statistically significant for the whole sample, but it is not significant for either Italy or Spain on their own. The result for the full sample matches the arguments of Morck *et al.* (1988) about the convergence hypothesis and directors' ownership.

Table VI presents the results of the relationship between Tobin's *Q* and Women_Directors_Ratio which includes the sensitivity analysis. Both for the entire sample and for Spain the relationship is positive and significant, in line with agency theory and resource dependence theory. For Italy, the coefficient is negative but not significant. These results show that the presence of female directors is more effective in Spanish-listed firm than Italian-listed firms (*H1*).

The Independent_Directors_Ratio coefficient has the same sign as in the previous analysis for the entire sample and for Spain, while for Italy it is positive but not significant. The interaction between Women_Directors_Ratio and Independent_Directors_Ratio (Women_Directors_Ratio × Independent_Directors_Ratio) produces negative results in all three cases, but is statistically significant only for the entire sample and for Spain. This could mean that Women_Directors_Ratio and Independent_Directors_Ratio have a controlling and substitutive role, and not a complementary role. This result is supported by the evidence produced by Lucas-Pérez *et al.* (2015) for the Spanish market. Both Log_Board_Size and Directors_Ownership_Ratio coefficients are unchanged from the previous analysis, with the difference that for Spain the sign of the Directors_Ownership_Ratio coefficient is negative but also significant (showing an entrenchment effect, Morck *et al.*, 1988).

Table VII shows the results of the analysis which includes two other variables, Italy and Italian_Women_Directors_Ratio, respectively. The first is a dummy variable equal to 1 if

Tobin's *Q*	Full sample	Italy	Spain
Women_Directors_Ratio	1.4982*** (0.2211)	−0.4176 (0.2901)	7.9569*** (0.5700)
Independent_Directors_Ratio	−0.8255*** (0.0179)	0.0984 (0.0860)	0.8441*** (0.1059)
Women_Directors_Ratio * Independent_Directors_Ratio	−1.5393*** (0.2929)	−0.9060 (0.7242)	−9.2409*** (0.7579)
Log_Board_Size	0.4443*** (0.0146)	0.0365 (0.0435)	−0.7719*** (0.0814)
Directors_Ownership_ratio	0.0002** (0.0000)	0.0004 (0.0003)	−0.0008*** (0.0002)
Debt_Ratio	0.0002*** (0.0000)	0.0067*** (0.0007)	−0.0009*** (0.0002)
Log_Firm_Size	0.0710*** (0.0019)	−0.00961*** (0.0221)	0.1525*** (0.0053)
Return_On_Assets	1.6169*** (0.0309)	2.6719*** (0.0860)	1.6428*** (0.1285)
Log_Firm_Age	−0.01868*** (0.0048)	−0.1898*** (0.0339)	−0.02770*** (0.0189)
Year	Yes	Yes	Yes
Constant	1.5727*** (0.0130)	1.7785*** (0.0697)	1.3177*** (0.0430)
Sargan test	825.23	804.68	773.90
Wald test	3,320.52	3,347.76	292.54
AR (1)	(0.03)	(0.17)	(0.04)
AR (2)	(0.28)	(0.32)	(0.10)
N. Obs	1,393	560	833

Notes: Standard errors are given in parentheses. *,**,***Significant at 10, 5 and 1 percent levels, respectively

Table VI. Relationship between Tobin's *Q* and board composition including moderating effects and using GMM system

Tobin's Q	Full sample	Full sample	Full sample
Women_Directors_Ratio	0.5827*** (0.0253)	0.7560*** (0.1464)	0.6834*** (0.0316)
Independent_Directors_Ratio	0.1419*** (0.0107)	0.1188*** (0.0144)	0.0997*** (0.0111)
Log_Board_Size	−0.1864*** (0.0073)	−0.1502*** (0.0091)	−0.1630*** (0.0088)
Directors_Ownership_ratio	0.0016*** (0.0001)	0.0012*** (0.0001)	0.0017*** (0.0001)
Women_Directors_Ratio × Independent_Directors_Ratio	−0.5365*** (0.2010)		
Debt_Ratio	0.0010*** (0.0000)	0.0007*** (0.0000)	0.0008*** (0.0000)
Log_Firm_Size	0.0903*** (0.0028)	0.1072*** (0.0031)	0.0913*** (0.0019)
Return_On_Assets	1.5956*** (0.0395)	1.5626*** (0.0375)	1.6066*** (0.0385)
Log_Firm_Age	−0.2179*** (0.0052)	−0.2481*** (0.0055)	−0.2315*** (0.0050)
Italy	0.7325*** (0.0111)	0.7048*** (0.0157)	0.7150*** (0.0152)
Italian_Women_Directors_Ratio			−0.3397*** (0.0963)
Year	Yes	Yes	Yes
Constant	1.1453*** (0.0171)	1.1382*** (0.0140)	1.2063*** (0.0124)
Sargan test	704.90	803.34	735.12
Wald test	3,188.55	7,416.26	4,309.31
AR (1)	(0.03)	(0.03)	(0.03)
AR (2)	(0.21)	(0.22)	(0.23)
No. of obs	1,393	1,393	1,393

Notes: Standard errors are given in parentheses. *,**,***Significant at 10, 5 and 1 percent levels, respectively

Table VII. Relationship between Tobin's Q and board composition and including moderating effects and a dummy variable for Italy, using GMM system

the country is Italy and 0 otherwise, while the second measures the percentage of Italian women in boardrooms.

The results provide evidence of a positive and highly significant relationship between Women_Directors_Ratio and Tobin's Q. The presence of women, considering the entire sample, has a positive impact on the value of the firm. This is in line with agency theory and the resource dependence theory. The Independent_Directors_Ratio coefficient is positive and statistically significant, supporting the arguments of Renneboog (2000). In this case as well, however, Women_Directors_Ratio and Independent_Directors_Ratio seem to have a substitutive rather than a complementary role, as was previously shown in Table VI. Indeed, the sign of the coefficient of interaction between the two variables (Women_Directors_Ratio × Independent_Directors_Ratio) is negative and significant.

The presence of independent directors is a positive influence on the company's value as the independents can provide effective control, monitoring and prompting for managers. The results of this study are consistent with the theoretical arguments of Jensen and Meckling (1976), and the empirical evidence of Coles *et al.* (2008), and Bhagat and Bolton (2013).

The Log_Board_Size coefficient, however, contrary to the preceding analyses, assumes a negative and statistically significant sign in all three models. A larger board has a negative impact on the value of the firm, and these results are consistent both with the theoretical arguments of Jensen (1993) and with the empirical evidence of Yermack (1996).

Directors_Ownership_Ratio has a positive impact on the value of firms, in line with the theoretical arguments of Jensen and Meckling (1976) and the convergence hypothesis of Morck *et al.* (1988). The fact that in Spain and Italy board members have lower share thresholds than other countries, such as the USA and UK, could better align the interests of shareholders with other stakeholders and represent an element of reconciliation in the conflict between majority and minority shareholders. In the presence of a concentrated ownership structure, with a board that owns insufficient shares to control the company (11.39 percent on average for Italy and 12.42 percent for Spain), the directors could play an effective monitoring and controlling role.

In this analysis, also, the negative relationship between women on the boards of Italian companies and Tobin's *Q* is confirmed. The sign of the Italian_Women_Directors_Ratio coefficient is negative and significant, which is in line with the identification and social categorization theories. The results clearly indicate that more women in the boardroom does not persuade investors and does not increase the value of Italian companies, unlike the case of Independent_Directors_Ratio, whose sign is always positive. The Italy variable is positive and always significant. This seems to indicate that, overall, Italian firms are performing better than Spanish firms.

For Italy, our results are consistent with the empirical evidence of Bianco *et al.* (2015), Del Prete and Stefani (2015), Schwizer *et al.* (2012), and in line with the international literature (Adams and Ferreira, 2009; Ahern and Dittmar, 2012; Matsa and Miller, 2013). The results for Spain and for the entire sample, by contrast, are consistent with the empirical evidence of Erhardt *et al.* (2003), Carter *et al.* (2003), Campbell and Mínguez-Vera (2008, 2010) and Luckerath-Rovers (2013).

Regarding the control variables, both the Return_On_Assets and Log_Firm-Age coefficients have the same sign for both countries. The Return_On_Assets coefficient has the expected effect (positive and statistically significant) both in the entire sample and when Italy and Spain are examined separately. This is in line with the work of Richard *et al.* (2009). The Log_Firm_Age coefficient is always negative and significant, which suggests that more mature companies have fewer opportunities for growth than younger ones (Lee, 2006). The Debt_Ratio and the Log_Firm_Size always have a positive sign. The result for the percentage of debt supports Jensen's (1986) free cash flow theory. However, the effect of firm size is contrary to our expectation. In this connection, Berger and Di Patti (2006) and Mule *et al.* (2015) posit that size is an important positive determinant of firm's performance, arguing that larger firms are usually more diverse, better managed and have higher risk tolerance.

In Table VIII, we present the analysis that considers the masculinity dimension.

Tobin's *Q*	Full sample	Full sample	Full sample
Debt_Ratio	0.0018*** (0.0000)	0.0015*** (0.0000)	0.0168*** (0.0008)
Log_Firm_Size	0.3421*** (0.0043)	0.3548*** (0.0031)	0.3385*** (0.0040)
Return_On_Assets	0.7657*** (0.0199)	0.6905*** (0.0296)	0.7493*** (0.0194)
Log_Firm_Age	−0.2986*** (0.0068)	−0.2891*** (0.0064)	−0.2618*** (0.0063)
Year	Yes	Yes	Yes
Women_Directors_Ratio	0.0618* (0.0351)	1.5877*** (0.1962)	0.5761*** (0.0369)
Independent_Directors_Ratio	0.5876*** (0.0211)	0.3938*** (0.0191)	0.6200*** (0.0150)
Log_Board_Size	−0.3999*** (0.0161)	−0.3071*** (0.0119)	−0.4416*** (0.0250)
Directors_Ownership_ratio	0.0035*** (0.0001)	0.0038*** (0.0001)	0.0034*** (0.0011)
Masculinity	−0.0800*** (0.0008)	−0.0829*** (0.0010)	
Women_Directors_Ratio*Masculinity		−0.0278*** (0.0037)	
Italy		−0.1987*** (0.0205)	
Masculinity_Difference			−0.7709*** (0.0009)
Women_Directors_Ratio × Masculinity_Difference			−0.0308*** (0.0019)
Constant	4.7386*** (0.0374)	4.9330*** (0.0505)	1.3275*** (0.0116)
Sargan test	193.52	187.46	185.23
Wald test	7,041.72	4,944.85	6,959.70
AR (1)	(0.02)	(0.02)	(0.02)
AR (2)	(0.14)	(0.15)	(0.13)
No. of obs	1,386	1,386	1,386

Notes: Standard errors are given in parentheses. *,**,***Significant at 10, 5 and 1 percent levels, respectively

Table VIII. Relationship between Tobin's *Q* and board composition including masculinity dimension and moderating effects, using GMM system

While the sign of control variables is similar to the previous analysis, the masculinity score affects firm performance. This finding is in line with institutional theory. According to this theory, firms are influenced by the institutional environment (the culture of the country) (Meyer and Rowan, 1977). In Columns 1 and 2, the results show that the masculinity factor negatively impacts firm performance. While the coefficient Women_Directors_Ratio is positive and statistically significant, the indirect effect (Women_Directors_Ratio × Masculinity) is negative. In a high "Masculinity" environment, the presence of women has a less positive impact on firm performance. The result is not only statistically significant but also economically large. A one standard deviation increase in women in the boardroom results in a decrease in firm performance of 11.37 percent, which is about 10.15 percent of the mean of Tobin's *Q*.

Column 3 suggests an interesting result. Masculinity score differences between Spain and Italy strongly affect firm performance. The difference between the masculinity dimension for Spain and Italy (Masculinity_Difference) is negative and statistically significant. The percentage of women on the board of directors for Spain and Italy has a negative impact on firm performance when the variable interacts with the difference of masculinity score between Italy and Spain (Women_Directors_Ratio × Masculinity_Difference). Again, we find that the effect is not only statistically significant but also economically large. A one standard deviation increase in women in the boardroom results in a decrease in firm performance of 15.03 percent, which is about 13.42 percent of the mean of Tobin's *Q*. This value also means that a bigger difference between the scores of the two countries is linked with lower Tobin's *Q*. Therefore, the negative (positive) impact of female directors on firm performance could be guided by a higher (lower) masculinity score. Indeed, comparing the coefficients of Table V (Column 1) and Table VIII (Column 1), we find that including the Masculinity variable in the regression the positive impact of women on the board on firm performance decreases from 0.67 to 0.06, which is about 4.28 and 0.40 percent of the mean of Tobin's *Q*, respectively.

The results provide evidence that differences in the masculinity dimension matter and that they may explain the differences in decision-making processes between civil law countries. These results also could explain the mixed results in the empirical literature on female directors. Finally, the results fully support our two hypotheses (*H1* and *H2*) and are consistent with the finding of Frijns *et al.* (2016) and Griffin *et al.* (2015) but inconsistent with the findings of Van Oostveen *et al.* (2014).

We constructed the covariance matrix (Table AI) to test possible multicollinearity problems. According to Archambeault and De Zoort (2001) and Pucheta-Martínez and Bel-Oms (2015), we do not find any correlation coefficients higher than 0.8, so our analysis does not suffer from this bias. The maximum variance inflation factor is 3.42, and it can also be concluded that collinearity is not a serious problem in this analysis (Greene 2012)[2].

5. Conclusions

This study examines the effect that the presence of women on the board has on firm performance in two countries (Italy and Spain). The results show that the presence of women on the board is more effective in Spain than in Italy for improving firm performance.

A possible explanation is the "masculine" culture (of Italy) as argued by Hofstede *et al.* (2010). Testing this insight, the results show that "masculine" culture really affects the relationship between female directors and firm performance.

The results of this study have several practical implications. First, cultural differences, like masculinity, can have a large impact on firm performance and can explain some differences between similar countries. Academicians, practitioners, managers and investors should be cognizant that a masculine environment can destroy value and that this indicator could be a determinant that has been ignored in several studies. The masculinity factor could push the

board of directors to take decisions that are not optimal but driven only by excessive and "destructive" competition among its members. Second, the legal system of countries might not explain adequately some differences in the decision-making processes. It has been noticed in this study that female directors on the board of directors in two similar civil law countries have a different impact on firm value. Third, cultural values, styles and thinking, like masculinity, might better explain why the relationship between female directors and firm performance is mixed. Future research should investigate, not only the legal system of countries, but, above all, the cultural differences between countries that can reveal results that are as yet unknown. Forth, our findings suggest that it is very important to promote gender equality, not only by passing laws, but also by acting in the educational system. Education about equality as a social value can break the cultural barriers that reduce the decision-making capacity of women in senior management. It seems that Spanish female directors are largely taken into account, maybe for cultural reasons. So, it would be desirable to reduce the masculinity index for equality and economic reasons.

This work makes several contributions. First, to our knowledge, it is the only research that compares the effect of gender equality on firm performance in a comparative analysis between Spain and Italy. Second, we introduce the masculinity difference between these two countries to explain the different effect of female directors on firm performance in Italy and Spain. Third, we use a powerful methodology that allows us to control for endogenity and heterogeneity.

This manuscript has some limitations. These limitations lead to future lines of research. One limitation is that only one cultural factor is examined (masculinity), but the cultural system also comprises several other items such as power distance, and individualism. These items could be examined in future studies. Another limitation is the fact that it focuses on only two countries. A future line of research would be to consider a larger number of countries. It would probably be interesting to include both civil law and common law countries in order to examine if Masculinity/Feminity exerts a larger or smaller influence than the legal system. The period of analysis, 2005–2011, is also a limitation. By that date neither the Italian nor the Spanish codes had come completely into force. In both cases, the deadline that firms had to reach the quota was the end of 2015. Examining results comparing pre- and post-quota periods would be another future line of research. Related to this, and considering post quota periods, it would be interesting to compare results for countries with compulsory quotas and those with non-binding gender quotas.

This manuscript focuses exclusively on listed firms. However, non-listed firms are more important in terms of number and number of employees. This is another limitation of the study. It would be desirable to carry out a separate analysis of non-listed firms. In addition, it would be interesting to analyze the influence of masculinity on the effect of women directors on the efficiency of financial institutions, given their importance in the economic crisis. Finally, it would also be important to analyze the moderating effect of the cultural system in the relationship between female directors and other variables, such as firm leverage and remuneration.

Notes

1. For more detail on the differences between these measures see Demsetz and Villalonga (2001).
2. For robustness, the different analysis has been repeated for several subsamples taking into account the firm value, firm age, firm size and capital structure. The results obtained are very similar. We also obtain the same results when the dependent variable included is the return on assets (see Scafarto *et al.*, 2017) instead Tobin's *Q*.

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Appendix

	2	3	4	5	6	7	8	9	10	11
1. Tobin's *Q*	−0.194	0.054	−0.060	0.009	−0.102	−0.043	0.100	0.307	−0.327	0.075
2. Log_Board_Size		0.173	0.723	0.267	0.123	0.175	0.315	0.042	0.188	−0.104
3. Directors_Ownership_ratio			0.126	0.204	−0.016	0.020	−0.027	0.017	0.017	−0.019
4. Independent_Directors_Ratio				0.205	0.077	0.333	0.520	−0.012	0.511	0.586
5. Women_Directors_Ratio					−0.011	−0.004	0.043	0.044	0.022	−0.052
6. Log_Firm_Age						0.140	0.133	0.024	0.076	0.022
7. Debt_Ratio							0.658	−0.113	0.534	−0.381
8. Log_Firm_Size								0.102	0.678	−0.526
9. Return_On_Assets									−0.134	−0.008
10. Masculinity										−0.671
11. Italy										

Table AI.
Correlation matrix

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