

Female board appointments and firm valuation: short and long-term effects

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Abstract The presence of women on boards of directors has become a high profile issue in recent years. Several studies, based largely on data from countries with Anglo-Saxon corporate governance systems, have investigated the influence of female board appointments on firm performance. This study focuses on the impact of female directors in Spain, where debate about this topic has been intense for two reasons: the recommendation in 2006 by Spain's *Unified Good Governance Code* of positive discrimination in favour of female board appointments and the passing in 2007 of a *Gender Equality Act* by the Spanish parliament. Our paper analyses the short and long term effect of the appointment of female directors prior to these events. We use an event study to analyze the short term stock market reaction to the appointment of female directors and a multiple regression approach, using the system GMM estimation procedure, to assess the long term influence on firm value of female boardroom appointments. We find that the stock market reacts positively in the short term to the announcement of female board appointments, suggesting that investors on average believe that female directors add value. This belief appears to be confirmed by our regression results which show that female board appointments are positively associated with firm value over a sustained period. These results suggest that the legislative changes in Spain make economic sense as well as advancing the cause of women in Spanish boardrooms.

Keywords Women · Board of directors · Market reaction

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1 Introduction

The board of directors acts as an internal governance mechanism via its appointment, supervision and remuneration of senior managers, as well as its framing of corporate strategy. Many studies have investigated the influence of board composition on the value of the firm, focusing, among others, on the percentage of inside directors (Agrawal and Knoeber 1996), the tenure of directors and managers (Hermalin and Weisbach 1991), directors' share ownership (Weisbach 1988), the size of the board of directors (Kini et al. 1995) and the frequency of board meetings (Vafeas 1999; Brick and Chidambaran 2007). More recently, researchers have investigated the effect of board diversity, which may be defined as the variety inherent in the board's composition. In this study we focus on a specific aspect of diversity, namely the composition of the board of directors in terms of gender.

The gender diversity of the board has generated debate about the influence of women on boardroom dynamics and on firm performance. On one hand, board gender diversity can bring additional perspectives to board decision-making. On the other hand, women may have a negative impact if the decision to appoint them to the board is motivated by societal pressure for greater equality between the sexes. Recent empirical evidence links gender diversity on boards with improved financial performance (e.g., Carter et al. 2003; Erhardt et al. 2003) although other evidence points to a negative association (e.g., Jehn and Bezrukova, 2003; Böhren and Ström 2005) while other studies are inconclusive on the link (e.g., Farrell and Hersch 2005; Smith et al. 2006; Rose 2007). The objective of this paper is to examine both the short and long term effects of gender diversity on firm value. We begin with an event study that analyses the impact of the announcement of female board appointments on stock returns, following the approach of Rosenstein and Wyatt (1990), Block (1999) and Farrell and Hersch (2005). We then analyse the longer term effect of womens' continuing boardroom presence on firm value using a panel date regression framework that incorporates board attributes and other firm characteristics that may also impact firm value.

This paper makes a number of contributions to the literature. First, it adds to the scarce empirical evidence on the valuation consequences of female directors. Most existing studies use data from countries with Anglo-Saxon corporate governance systems and legal systems based on common law. This paper provides evidence from Spain, which has a civil law system, as do most other European countries. Second, an increased role for women on company boards has been the subject of intense political debate in Spain and is now positively promoted to redress what is perceived to be an under-representation of women in business, and in society more generally; in this context it is of interest to determine whether the financial markets encourage or punish gender diversity, at the time of board appointments and in the longer term, and thus whether there is also an economic case for greater female participation in the boardroom.

Our results lead us to conclude that female board members are positively associated with the value of the firm. The event study indicates that announcements of female board appointments affect the market value of the firm. Although the nature of this relationship is inconclusive when a parametric test is employed, we detect a positive influence when using a non-parametric test, which we believe to be the more appropriate test because of the size of our sample. Our panel data regression analysis of the longer term impact of female boardroom appointments points to a positive and significant effect on firm value.

The remainder of the paper is organised as follows. The following section explains why the issue of gender diversity is particularly worthy of study in the Spanish context, while section three reviews the literature on the corporate impact of board gender diversity and specifies the hypotheses to be tested. Section four describes the data selection process and the characteristics of the sample, while section five explains the methodology. Section six reports the results, while section seven concludes.

2 Gender diversity in the boardroom and the Spanish context

During the 1980s and 1990s female participation in labour markets worldwide grew substantially, although this was not always matched by improvements in the quality of employment (ILO 2007). In most European countries the participation of women in the labour force is lower than that of men (Curdová 2005). This is also true of Spain: compared to other OECD countries the proportion of women in the Spanish workforce is low. In 2005 46.4% of Spanish women participated in the workforce compared to an OECD average of 50.3%, giving Spain a ranking of 24 out of 30 OECD countries (OECD 2006a). Unemployment is also higher for Spanish women than for their male counterparts and is higher than the OECD average among women (OECD 2006b). However, the unemployment gender gap in Spain is smallest for those women attaining advanced tertiary qualifications. Spanish women attaining this level of education had an unemployment rate of 8.8% in 2005 (OECD average 4.3%) compared to 5.3% of males (OECD average 3.5%).

For women to be able to serve on company boards it is necessary for them to have the educational opportunities and skills necessary to compete with male counterparts. This would appear to be the case in the US, where there is no gender gap in tertiary education. Catalyst—a research and advisory services organization working to expand opportunities for women at work—has monitored the progress of women in US boardrooms since 1995. It reports that women earned more than one-half of all bachelor's and master's degrees (57.3 and 58.5%, respectively) and nearly one-half of all doctorates and law degrees (44.9 and 47.3%, respectively) awarded in 2002 (Catalyst 2004). This may help to explain why the number of women on US boards has increased over the past decade or so. In its 2005 *Census of Women Board Directors of the Fortune 500*, Catalyst reports that women held 9.6% of all Fortune 500 board seats in 1995 and that this representation increased to 13.6% in 2003 and to 14.7% in 2005 (Catalyst 2006). However, the rate of growth over the 1995–2005 period was, on average, one-half of one percentage point per

year—a rate characterised by Catalyst as “sluggish”. The 2006 Census revealed a “stagnant” situation, with women holding 14.6% of all *Fortune* 500 board seats, a decline of 0.1% compared to the previous year (Catalyst 2007). Based on interviews with CEOs, women directors and company secretaries at *Fortune* 1000 companies, Konrad and Kramer (2006) contend that women have a greater impact on board decision-making if boards possess three or more female members. However, in 2006 only 84 of the *Fortune* 500 companies had achieved this critical mass of women on their boards, although this represented a slight increase from 76 in 2005 (Catalyst 2007).

In Europe the average number of women in boardrooms has increased in recent years, from 5.0% in 2001 to 8.4% in 2007 (Heidrick and Struggles 2007) as shown in Table 1. However, this is still low in comparison to the US and masks a high degree of variation across countries. Sweden had the highest proportion of female directors (21.0%) while Portugal had the lowest proportion (0.7%). Spanish boards had an average of only 3.1% female directors.

Women have traditionally been poorly represented in the Spanish workforce, reflecting deep-rooted societal attitudes towards women. While the women’s rights movement gained momentum in Europe and the US in the 1960s, this was not true of Spain, then ruled by a conservative military dictatorship. When General Franco died in 1975, after almost four decades in power, it was illegal for women to work, own property, open a bank account or to travel without their husband’s permission (Catan 2006). The gender ideology of the dictatorship was summarized in Article 47 of the Spanish Civil Code, which stated that “husbands must protect their wives and wives must obey their husbands” (Carrera et al. 2001).

Franco’s death led to a growth of female emancipation, known in Spain as the “destape”—literally “taking the lid off”. For the first time, women began to enter the workforce in large numbers. The women’s rights movement received a boost in 2004 when a new Socialist Prime Minister José Luis Rodríguez Zapatero promised to make gender equality one of his Government’s top priorities. He appointed women to half of the positions in his 16-member Cabinet and announced a series of policies aimed at changing “machista” behaviour. His Party was re-elected in March 2008.

Women comprised about 48% of the workforce in 2006, up from 28% in 1980, and the majority of Spanish university graduates are now female (Catan 2006). Despite catching up with the US in terms of the proportion of female graduates, women are seldom represented at senior levels in Spanish boardrooms. A recent study of the boards of Spain’s top 1,085 companies which aimed to understand why women are so scarce found that companies with homogeneous boards considered diversity to be a hindrance (Mateos de Cabo et al. 2007). The authors conclude that such companies tend to systematically underestimate the abilities of women for board positions, a situation that does not prevail for those companies with gender diverse boards.

To tackle this underrepresentation, and also to provide more opportunities for Spanish women to achieve elected office, the Spanish Parliament approved a new *Gender Equality Act* (Ley de Igualdad) in March 2007. It requires that 40% of candidates filed on political party ballots be female and it encourages greater

Table 1 Representation of women in European boardrooms by country

2001 European average		5.0%
2003 European average		6.1%
2005 European average		7.3%
2007 European average		8.4%
Portugal		0.7%
Italy		2.3%
Spain		3.1%
Belgium		5.3%
Switzerland		7.2%
France		7.5%
Netherlands		9.0%
Germany		12.4%
UK		15.2%
Sweden		21.3%

Source: Heidrick and Struggles (2007). Corporate governance in Europe 2007 report: raising the bar, Paris

employment of women by giving companies with higher ratios of female to male employees preferential treatment when bidding for government contracts (Wools 2007). It also demands, but does not require, firms negotiating for public contracts to have 40% of the least represented gender on their boards by 2015 (McSmith 2008).

The Spanish government's *Gender Equality Act* is a weaker imitation of a law passed by the Norwegian government in January 2003 which required publicly listed firms to achieve a 40% quota of female board members within 5 years, backed by the threat of non-compliant firms being closed down. At the expiry of the deadline 5 years later virtually all companies listed on the Oslo stock exchange had complied with the law, resulting in almost 38% of the board members of such firms being female—a quadrupling of the number over this period (Holmes 2008). By January 2008 Norway had thus attained European leadership in terms of women's representation on the board, with Sweden in second place with almost 20% of female board membership among companies listed on the Stockholm stock exchange. However, support for the change in Norway was not universal, with some of the country's small listed companies altering their status to avoid complying with the law. One of the consequences of the Norwegian law has been the acquisition of multiple directorships by the best qualified women, resulting in the creation of a small cadre of highly influential women, which could have negative consequences for firm performance if their efforts are overly diluted. The Norwegian economy could also suffer, at least in the short term, as a result of leaking of female talent that has occurred from the public to the private sector.

The campaign to promote women as board members also features in Spain's code of corporate governance. Like companies listed on most European stock markets, Spanish listed companies are required to report the extent to which they “comply or explain” with best corporate governance practice. Best practice is embodied in Spain's *Unified Good Governance Code*, approved in May 2006 by the Spanish Securities and Exchange Commission, the Comisión Nacional del Mercado de Valores (CNMV). This unified code merged and updated previous Spanish guidelines on corporate governance—the 1998 Olivencia Report and the 2003 Aldama Report—as well as incorporating recommendations made by the European Commission and the OECD. It was used for the first time by Spanish companies publishing their 2007 Annual Governance Reports.

A unique aspect of Spain's 2006 *Unified Good Governance Code* is that it recommends positive discrimination in favour of female board appointments for those firms with low or zero women directors. Principle 15 of the code states that:

When women directors are few or non-existent, the board should state the reasons for this situation and the initiatives taken to correct it; in particular, the Nomination Committee should take steps to ensure that:

- a) The process of filling board vacancies has no hidden bias against women candidates;
- b) The company makes a conscious effort to include women with the target profile among the candidates for board places.

In justifying this new requirement, the CNMV invokes the business case for female board appointments by arguing that a good gender balance on the board is not only a matter of ethics or social justice but is also “an efficiency objective” and represents “economically rational conduct” (CNMV 2006).

3 Gender diversity in the boardroom and firm value

Arguments for greater female representation on the board can be divided into two categories: ethical and economic. The former argue that it is immoral for women to be excluded from company boards on the grounds of their gender and that companies should hire more women directors to achieve a more equitable outcome for society. Accordingly, these arguments suggest that companies should regard greater female board representation as a desirable end in itself and not simply as a means to an end (Brammer et al. 2007). Economic arguments, on the other hand, are based on the notion that firms which do not select the best candidates for the board will suffer lower financial performance. We now consider the theory that lies behind this “business case” for greater gender diversity on the board.

The arguments that lie behind the idea that increased board diversity improves a firm’s competitive advantage are based largely on intuitive reasoning and are articulated by Robinson and Dechant (1997). While they focus on workplace diversity in general and consider diversity in terms of age and ethnicity as well as gender, we consider their arguments as they apply to board gender diversity. First, it is argued that more diversity promotes a better understanding of consumer preferences by matching the diversity of a firm’s directors to the diversity of its potential customers and employees. Therefore, one would expect board composition to vary systematically across industry sectors according to cross-sector variations in the demographic composition of customers and employees. This accords with the finding of Brammer et al. (2007) that the highest rates of female directors on UK boards are associated with retailing, banking, the media and utilities—all sectors associated with close proximity to final consumers—while producer-oriented sectors such as resources, engineering and business services—characterised by isolation from final consumers and predominantly male-dominated workforces—have significantly fewer female directors.

Second, it is argued that diversity increases creativity and innovation because these characteristics are not randomly distributed among the population but tend to vary systematically with demographic variables such as gender. Third, it is argued that diversity can enhance the capacity for problem-solving as the variety of perspectives that emerge from a more diverse board allow more alternatives to be evaluated. A broader perspective will enhance understanding of the complexities of the business environment and thus improve decision-making. A more gender diverse board may also improve a firm’s competitive advantage by improving the image of the firm and thus customers’ behaviour and firm performance (Smith et al. 2006).

Singh et al. (2008) explore whether the human capital of 144 new board appointees in the top 100 UK companies from 2001 to 2004 differs by gender. Their evidence supports the view that new women directors, although slightly younger than their male counterparts, have fairly similar and sometimes additional human capital to their male peers in terms of education, reputation, board experience and career experience. Carter et al. (2003) consider the link between board diversity and firm value in the context of agency theory, as outlined by Fama and Jensen (1983), and consider whether gender diversity enhances the board’s ability to control and monitor managers. They suggest that greater diversity may increase board

independence as women are more inclined to ask questions that would not be asked by male directors. However, they also point out that the female perspective may not necessarily result in more effective monitoring if women directors are marginalized and conclude that there is no reason a priori to expect greater gender diversity to enhance board monitoring.

One potential problem confronting firms that wish to increase the gender diversity of their boards is sourcing the appropriate talent. The *Tyson Report on the Recruitment and Development of Non-Executive Directors* in the UK (Tyson 2003) called on companies to draw their directors from a more diverse pool, including women with experience in the public sector, the voluntary sector and professional services firms. The report also encouraged companies to develop their internal pipeline of female managers just below main board director level—the so-called “marzipan layer”—as a means of achieving this aim.

There are also arguments that greater gender diversity may reduce firm performance. Earley and Mosakowski (2000) suggest that members of homogeneous groups communicate more frequently as they are more likely to share the same opinions. Similarly, Tajfel and Turner (1985) and Williams and O’Reilly (1998) argue that homogeneous groups are more cooperative and have less emotional conflicts. Moreover, if greater gender diversity among board members generates more conflicting opinions, decision-making will be more time-consuming and less effective (Lau and Murnighan 1998). It has been suggested, however, by Nowell and Tinkler (1994) that women are more cooperative than men, although Brown-Kruse and Hummels (1993) argue that the converse is true. Conflict in the boardroom may also be partly determined by the extent of altruism inherent in male and female behaviour: Andreoni and Vesterlund (2001) argue that men are more altruistic than women when the cost of altruism is low and that the converse is true when this cost is high. A further argument supporting the view that greater gender diversity is associated with lower firm performance can be found in the observation of Jianakoplos and Bernasek (1998) that women are more risk-averse than men, while Cox and Blake (1991) argue that women increase the costs of the firm as a result of higher turnover and absenteeism.

Increased gender diversity may adversely affect a firm’s performance if women directors are appointed as “tokens” rather than for their intrinsic business skills. In this respect, Rosabeth Moss Kanter’s theory of tokenism in her 1977 book *Men and Women of the Corporation* is highly pertinent. In her attempt to better understand gender discrimination in the workplace, she interviewed twenty saleswomen working within a male-dominated Fortune 500 firm to explore how the numerical composition of groups affected group processes, concluding that “the life of women in the corporation is influenced by the proportions in which they find themselves” (Kanter 1977, p. 207). She went on to define a ratio of 85:15 as a theoretical benchmark where members of the majority (85% or more) were “dominants” while the remaining minorities (15% or less) were “tokens”. However, women who are appointed as “tokens” may not necessarily have an adverse impact on firm performance. Kanter points out that such appointments may find themselves under more pressure to prove their professional worth compared to their dominant counterparts and they may also have to work harder to receive recognition for their achievements. Further, women directors who perceive themselves to be “tokens”,

and thus to be representing their gender, may be motivated to perform well not just for themselves but because of the symbolic consequences of their activities.

A problem that may confront women in business, whether their status is “token” or not, is an invisible barrier known as a “glass ceiling” which prevents promotion beyond a certain level. A study by Williams (1992) found that males working in the female-dominated occupations of nursing, teaching, librarianship, and social work did not face discrimination as “tokens” and in fact had structural advantages that enhanced their careers, enabling them to rise on a “glass escalator” to the top. Another problem potentially faced by women is the so-called “glass cliff” that they may be confronted with when they achieve high profile positions. Archival evidence suggests that women are more likely to be appointed to leadership positions after a period of poor company performance, diminishing their prospects of achieving future success (Ryan and Haslam 2005).

Irrespective of the possible presence of invisible (“glass”) ceilings, escalators or cliffs, boards with high degrees of gender diversity may encourage directors of the same gender to more strongly identify themselves with each other’s opinions, thus increasing the chance of conflict (Richard et al. 2004). This can be especially problematic if a firm competes in a highly competitive industry where the ability to react quickly to changes in the marketplace is an important issue (Williams and O’Reilly 1998). Although the decisions of a more gender diverse board may be of a higher quality, this may be outweighed by the negative effects of a slow decision-making process if the market demands quick responses (Hambrick et al. 1996).

The foregoing arguments encompass both positive and negative associations between female board appointments and firm performance. The extant empirical evidence is also inconclusive and is mostly based on studies that utilise US data and employ diverse methodologies and proxies. For example, Rosenstein and Wyatt (1990), Block (1999), Carter et al. (2003), Erhardt et al. (2003) and Catalyst (2004) find that gender diversity has a positive effect, while Jehn and Bezrukova (2003) and Böhren and Ström (2005) conclude the opposite. Finally, the studies of Watson et al. (1993), Shrader et al. (1997), Du Rietz and Henrekson (2000), Richard (2000), Farrell and Hersch (2005), Randøy et al. (2006), Smith et al. (2006) and Rose (2007) are inconclusive on the issue. Nevertheless, given the very low representation of females on Spanish boards relative to other countries and the legislative pressure in Spain for increased female participation, and also the positive economic spin-offs for legally compliant firms in terms of preferential access to public contracts, we hypothesise that the stock market will react positively to female board appointments (Hypothesis 1, H1). Consistent with this, we also expect a positive sign for the coefficients of the diversity variables in our multiple regression models (Hypothesis 2, H2).

4 Data and variables

4.1 Event study

To carry out the event study we collected all announcements of board appointments by quoted Spanish firms that occurred from January 1989 to December 2001. The dates of

the announcements were obtained from the “previous communications” section of CNMV. The numbers of appointments are reported in Table 2 on a year-by-year basis. We can observe that the total number of appointments over this period was 4050, of which only 105 (2.59%) correspond to the appointment of women.

The relative stability of the number of female board appointments each year by Spanish firms is also evident from Table 2. In contrast, Farrell and Hersch (2005) report that the percentage of women appointed to US boards grew every year from 1990 to 1999.

When analysing the 105 announcements of female appointments in the event period we also identified other announcements occurring at the same time (such as dividends, capital issues, capital reductions, splits and mergers) that might contaminate our sample. This process identified a total of 47 such announcements, affecting 29 different firms. The distribution per year of the final sample is shown in Table 3.

Table 4 reports the distribution of female appointments by sector, based on the classification of the Madrid Stock Exchange. We can observe that the majority of firms appointing women belong to the ‘consumption goods’ sector and the ‘financial services and state agents’ sector. This is logical given that these the two sectors contain a greater number of companies.

Finally, we used daily price data to calculate stock returns. These prices, adjusted for dividend payments, were obtained from the Madrid Stock Exchange database.

4.2 Regression analysis

The sample for the regression analysis is comprised of non-financial firms listed on Spain’s Continuous Market (Mercado Continuo) during the period January 1995 to

Table 2 Appointment of directors to Spanish quoted firms 1989–2001

Year	Women		Men		Total	
	Number	(%)	Number	(%)	Number	Annual (%)
1989	15	1.87	786	98.13	801	19.78
1990	3	1.60	185	98.40	188	4.64
1991	4	2.26	173	97.74	177	4.37
1992	9	3.61	240	96.39	249	6.15
1993	7	3.04	223	96.96	230	5.68
1994	9	3.31	263	96.69	272	6.72
1995	9	4.48	192	95.52	201	4.96
1996	10	3.50	276	96.50	286	7.06
1997	6	1.83	322	98.17	328	8.10
1998	10	3.72	259	96.28	269	6.64
1999	7	1.97	349	98.03	356	8.79
2000	9	1.98	445	98.02	454	11.21
2001	7	2.93	232	97.07	239	5.90
Total	105	2.59	3945	97.41	4050	100.00

Table 3 Final sample of female appointments

Year	Number	(%)
1989	12	25.53
1990	1	2.13
1991	4	8.51
1992	3	6.38
1993	3	6.38
1994	2	4.26
1995	4	8.51
1996	9	19.15
1997	1	2.13
1998	1	2.13
1999	2	4.26
2000	2	4.26
2001	3	6.38
Total	47	100.00

Table 4 Announcements of female appointments to boards of directors by sector (following the classification of the Madrid stock exchange)

Sector	Number of announcements	Number of firms
Consumption goods	12	8
Basic materials, industry and building	2	2
Technology and telecommunications	3	2
Consumption services	5	3
Petroleum and energy	5	4
Financial services and state agents	20	10
Total	47	29

December 2000. The firms traded on this market are simultaneously listed on the four Spanish stock exchanges (Barcelona, Bilbao, Madrid and Valencia) by means of an electronic system that continuously produces a single price for each asset, with the bulk of the trading carried out on the Madrid stock exchange (Leech and Manjón 2002). Due to some limitations in the availability of the data for the variables included in our regression model, the final sample comprises a balanced panel comprising 68 companies and a total of 408 observations. The identities of the directors, and the dates of their appointments, were obtained from the “register of directors” of the CNMV which provides details of the dates of appointment and termination of the posts of each member of the board of directors of listed companies. From this register we also calculated the number of board members. Information on the shareholdings of directors comes from the “register of significant equity shareholdings” of the CNMV. The identities of the chairman and CEO and the dates of their appointments were obtained from the databases DICODI (Directorio de Consejeros y Directivos), Duns, Nueva Empresa, and Who’s

Who in Spain. The accounting data were obtained from the SABI database.¹ Finally, the number of shares and the share prices were obtained from the annual editions of the Madrid stock exchange list.

We measure firm value using an approximation of Tobin's Q (Q), defined as the sum of the market value of stock and the book value of debt divided by the book value of total assets. We use two variables to measure the gender diversity of the board of directors: a dummy variable, *DWOMAN*, that takes a value of one when at least one woman is present on the board, and zero otherwise; and the percentage of women on the board, *PWOMEN*, calculated as the number of female directors divided by the total number of directors.

We also include several variables that capture board characteristics: the percentage of the directors' shareholdings in the firm (*PEDIROW*), the number of board members (*NDIR*) and whether the chairman and CEO positions are vested in the same person (*CEOCHA*) measured as a dummy variable taking a value of 1 when the positions are coincident, and zero otherwise. We also use a number of common control variables: the debt level (*LEVE*) calculated as the ratio of total debt to total assets; the age of the firm since its foundation, in years (*AGE*), the return on assets (*ROA*) and the size of the firm (*SIZE*) approximated by the natural logarithm of total assets.²

In Table 5 we report the descriptive statistics for all of the variables. We can observe that the mean percentage of women on Spanish boards, *PWOMEN*, is 3.3%. This is lower than the numbers reported for the US market. For example, Carter et al. (2003) report a value of 9.6%, Farrell and Hersch (2005) a value of 6.9% and Catalyst (2004) a value of 10.2%. However, the greatest difference between Spain and the US is apparent when we observe the percentage of firms with one or more women on the board, *DWOMAN*. Only 23.7% of Spanish quoted firms have one or more women on their board, while the comparative value for US firms is 70% (Farrell and Hersch 2005). The slower incorporation of women into the workplace in Spain compared to other developed countries is reflected in our results.

5 Methodology

5.1 Event study

We examine the stock market reaction to the announcement of female board appointments using the event study methodology.³ The valuation effect of firm i on day t is measured by the abnormal returns, $AR_{i,t}$, calculated as the actual returns, $R_{i,t}$ minus expected returns:

¹ System of analysis of Iberian balance sheets, provided by Bureau Van Dijk.

² These control variables are based on the work of Morck et al. (1988), Yermack (1996), Himmelberg et al. (1999), and Adams et al. (2005).

³ For more information about the event study methodology see Dyckman et al. (1984), Brown and Warner (1985), Peterson (1989) and Campbell et al. (1997).

Table 5 Definitions of board measures and their main statistical properties

	Mean	Median	SD	Minimum	Maximum
Q	1.642	1.287	1.220	0.3318	10.763
DWOMAN	0.237	–	–	0.000	1.000
PWOMEN	3.283	0.000	7.157	0.000	40.000
PDIROW	11.624	0.711	19.483	0.000	90.210
NDIR	10.750	10.000	4.518	2.000	26.000
CEOCHAT	0.400	–	–	0.000	1.000
LEV	0.384	0.383	0.214	0.000	0.9830
AGE	46.615	43.4151	20.103	6.510	100.760
ROA	5.482	4.450	7.594	–19.420	38.120
SIZE	5.535	5.447	0.667	3.778	7.680

Non-financial firms on Spain’s continuous market 1995–2000

Variables Q, approximation of Tobin’s Q; DWOMAN, binary variable that takes a value of 1 when there is at least one woman on the board of directors, and 0 otherwise; PWOMEN, percentage of women on the board of directors; PDIROW, percentage of directors’ ownership; NDIR, number of directors on the board; CEOCHAT, dummy taking a value of 1 when the chairman and CEO positions are the same person; LEV, total debt over total assets; AGE, number of years since the firm’s foundation, in years; ROA, return on assets %; SIZE, logarithm of the book value of the total assets of the firm

For the binary variables (DWOMAN and CEOCHAT) the mean indicates the proportion of firm observations for which the variable equals 1

$$AR_{i,t} = R_{i,t} - E(R_{i,t}) \tag{1}$$

We use the Ordinary Least Square (OLS) Market Model to calculate expected returns. In common with many other event studies we use a 100 day estimation window (–120, –20) and a 21 day event window (–10, 10), with 0 representing the event day.⁴

The following expression is used to estimate the average abnormal return during day *t*, AAR_{*t*}:

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{i,t}, \tag{2}$$

where *N* is the size of the sample.

We sum the average abnormal returns across days to calculate the cumulative average abnormal returns, CAAR_(T₁,T₂), where T₁ and T₂ are the actual days in the event period. The expression is the following:

$$CAAR_{(T_1,T_2)} = \sum_{t=T_1}^{T_2} AAR_t \tag{3}$$

⁴ A variety of estimation period lengths have been used in prior studies, typically ranging from 100 to 300 days, with typical event period lengths ranging from 21 to 121 days (Peterson 1989).

Two tests are used to analyze the abnormal returns' statistical significance. The first is a parametric test (Share Time Series method) and the second is a non-parametric test (Corrado 1989).

The Share Time Series method standardises each share's abnormal return by its estimation period standard error. The test statistic for the average abnormal return in day t is the following:

$$\frac{ASE_t}{s(SE)/\sqrt{N}} = \frac{\sum_{i=1}^N SE_{i,t}}{\sqrt{N}}, \quad (4)$$

where $SE_{i,t}$ is the standardised error of the abnormal return, ASE_t represents the average standardised error for time t , $s(SE)$ is the standard deviation of the SEs. Finally, \sqrt{N} indicates the square root of the size of the sample.

The Corrado (1989) non-parametric test does not rely on normality assumptions and is also more suitable in situations where variance increases (Seiler 2000). Friederich et al. (2002) show that this test, in several simulations, proves to be more robust than others.

To implement this test, we need to sort and transform the series of abnormal returns into their respective ranks, for both the estimation period and event window. In this way, $k_{i,t} = \text{rank}(\text{AR}_{i,t})$, where $t = t_1, \dots, t_2$. If $\text{AR}_{i,t} > \text{AR}_{i,j}$ then, $k_{i,t} > k_{i,j}$. The median rank of the share i is $\bar{k}_i = \frac{t_1+t_2+1}{2}$. The rank statistic is calculated using the following formula:

$$Z = \frac{\frac{1}{N} \sum_{i=1}^N (k_{i,t} - \bar{k}_i)}{\hat{s}(k)}, \quad (5)$$

where $\hat{s}(k)$ is the estimated standard deviation of the portfolio mean abnormal return rank over the estimation and event windows. The expression used is the following:

$$\hat{s}(k) = \sqrt{\frac{1}{t_1 + t_2} \sum_{t=1}^T \left(\frac{1}{N} \sum_{i=1}^N (k_{i,t} - \bar{k}_i) \right)^2} \quad (6)$$

Finally, the Corrado (1989) statistic (Z) is asymptotically unit normally distributed.

5.2 Regression analysis

To determine the nature of the relationship between female board membership and firm performance we estimate the following model:

$$Q_{it} = \beta_0 + \beta_1 \text{DIVERSITY}_{it} + \sum_{j=2}^4 \beta_j \text{BC}_{jit} + \sum_{j=5}^8 \beta_j \text{CV}_{jit} + \psi_t + \eta_i + \varepsilon_{it}, \quad (7)$$

where Q represents firm value (our proxy for Tobin's Q). DIVERSITY is represented by two alternative variables: a dummy variable that takes a value of one

when one or more women are present on the board, and zero otherwise (DWOMAN) and the percentage of women on the board of directors (PWOMEN). BC includes other board of director characteristics (the percentage of directors' ownership, board size and whether the post of CEO and Chairman is vested in the same person). CV represents the control variables (the debt ratio, firm age, ROA and firm size). Finally, the expressions ψ_i , η_i and ε_{it} refer to time effects, individual effects and random disturbances, respectively.

In order to control for individual heterogeneity (highlighted by Himmelberg et al. 1999, among others), we employ a panel data estimation methodology that includes individual effects, η_i . In addition, time dummy variables are included in our model to control for any possible macroeconomic effects on the dependent variable. We apply the System Generalized Method of Moments (GMM) technique proposed by Arellano and Bover (1995) and Blundell and Bond (1998). This technique involves the estimation of a system of two simultaneous equations, one equation in levels and the other in first differences, estimated with lagged levels and first differences instruments. As well as controlling for individual effects, the system GMM technique also solves the endogeneity problem which arises when the right-hand side variables could be determined simultaneously with the dependent variable.

A positive sign is expected for the diversity variables (Hypothesis 2, H2). Consistent with agency theory (Jensen and Meckling 1976) we expect the percentage of directors' share ownership to be positively related to firm value due to the alignment of their interests with those of outside shareholders (Demsetz and Villalonga 2001). A negative relationship between board size and firm value is consistent with the view that larger boards hinder coordination and the decision-making process. A larger board is also more likely to suffer from a "free rider" problem in the sense that board members may rely on other members to monitor management. Although a number of empirical studies have documented a negative effect of board size on firm performance (Yermack 1996 and Eisenberg et al. 1998) a competing view is that larger boards allow members to specialize and thus to be more effective monitors. For example, Klein (2002) finds that audit committee independence is positively related to board size. We anticipate that where the roles of CEO and chairman are combined firm performance will be adversely affected (Rechner and Dalton 1991). As the CEO is monitored by the board of directors it is in the CEO's interest to present information to the board that makes the firm's results look good. This conflict of interest is likely to result in a dilution of the monitoring role of the board of directors.

The first of the control variables we employ, the debt ratio, may be either positively or negatively associated with firm value. Since higher levels of debt increase the threat of bankruptcy, managers are motivated to avoid value-decreasing decisions that may result in a loss of control (Grossman and Hart 1982). Higher leverage also decreases the firm's free cash flow and thus limits the potential for agency costs to erode value (Jensen 1986). When firms have more internally generated funds than positive net present value projects, debt forces managers to disgorge free cash flow that might otherwise have been invested in negative net present value projects (the over-investment problem). On the other hand, Myers (1977) suggests that firms with outstanding debt may be inclined to reject positive net present value projects if the

benefits from accepting them accrue to bondholders without also increasing shareholders' wealth. This under-investment problem can reduce firm value, especially for firms with high growth opportunities. As with the debt ratio, the relationship between firm age and firm value has not been unequivocally established. An inverse relationship between firm age and firm value has been attributed to the observation that younger firms are more likely to grow faster and to possess more intangible assets (Black et al. 2006). However, success may also depend on accumulated knowledge about the market and the firm's reputation and experience, suggesting a positive relationship between firm age and firm value.

We also include a firm's profitability, measured by return on assets (ROA), as a control variable because we expect greater profitability to be reflected in a higher market value. Our final control variable is firm size, which we expect to be negatively related to firm value because of the greater agency costs associated with monitoring larger firms (Jensen and Meckling 1976).

6 Results

6.1 Event study

We report the results of the event study analysis in Tables 6 and 7. Table 6 presents average abnormal returns and cumulative average abnormal returns for each day during the event window, while Table 7 shows the same information for a variety of time intervals.

From Table 6 we can observe a positive abnormal return on day -2 , which is significant using both the Share Time Series test (10% level) and the Corrado (1989) test (5% level).

We can also observe a positive and significant abnormal return on day $+1$, but only using the Corrado (1989) test. Given the possibility of information leakage before the event and a delayed reaction to the event, it can reasonably be concluded that the announcement of female appointments to Spanish boards is positively viewed by investors. This evidence is similar to that reported by Rosenstein and Wyatt (1990) and Block (1999) and confirms Hypothesis 1.

From Table 7, we can observe that the sample companies earn positive abnormal returns in different windows surrounding the announcement date. Specifically, for the Corrado (1989) test we can observe that the abnormal returns are significant at the 1% level in the $(-2, 2)$ window and that they are also significant in the $(-1, 1)$ and $(-3, 3)$ windows, but at the 5% level. Therefore, we can conclude that there is a positive reaction in the period immediately surrounding the event, which is also consistent with Hypothesis 1. Using the Share Time Series test, however, we find that abnormal returns are not significant in any of the time windows, which is similar to the findings reported by Farrell and Hersch (2005) for the US market. While we must therefore be cautious about drawing firm conclusions, we believe that the Corrado (1989) test is a more appropriate test because of the small sample size (Martín-Ugedo 2003) and thus lean towards the view that the stock market views positively the appointment of women to Spanish boards.

Table 6 Average abnormal returns (AARs) and cumulative average abnormal returns (CAARs) in the event period

Day	AAR (%)	CAAR _(-10,t) (%)	Statistical tests	
			Share time series	Corrado
-10	-0.20	-0.20	-0.70	0.08
-9	0.24	0.04	0.60	0.61
-8	-1.05	-1.01	-2.151**	-2.90**
-7	0.37	-0.64	0.71	0.60
-6	0.34	-0.30	1.58	0.55
-5	0.00	-0.30	-0.01	-0.46
-4	0.75	-1.05	-2.98***	-2.38**
-3	-0.51	-1.56	-1.49	-0.86
-2	0.67	-0.89	1.872*	2.21**
-1	0.13	-0.76	0.581	0.56
0	-0.03	-0.79	-0.15	0.16
1	0.25	-0.54	1.41	1.35*
2	-0.22	-0.76	-0.87	-1.17
3	-0.38	-1.14	-1.18	-0.57
4	-0.13	-1.27	-0.48	-0.60
5	-0.22	-1.49	-0.81	0.08
6	-0.04	-1.53	-0.12	-0.39
7	0.13	-1.40	0.51	0.83
8	0.37	-1.03	1.979*	1.10
9	0.08	-0.95	0.46	0.77
10	-0.22	-1.17	-0.98	-1.63

Date of communication to the CNMV

*, **, *** Significance at the 1, 5 and 10% levels, respectively

The CNMV is the Spanish institution that is equivalent to the SEC in the US

Table 7 Cumulative average abnormal returns (CAARs) for different periods

Period	CAAR _(t1, t2) (%)	Statistical tests	
		Share time series	Corrado
(0, 1)	0.219	0.769	1.499*
(-1, 0)	0.102	0.325	0.712
(-1, 1)	0.350	0.894	2.055**
(-2, 2)	0.800	1.212	-3.092***
(-3, 3)	-0.089	-0.156	1.664**
(-7, 7)	-0.403	-0.483	-0.098
(-9, 9)	-0.767	-0.875	-0.520
(0,10)	-0.415	-0.668	-0.084
(4,10)	-0.039	-0.066	0.115

*, **, *** Significance at the 1, 5 and 10% levels, respectively

6.2 Regression analysis

The results from Eq. 7 are reported in Table 8. We can observe that the presence of women on the board (DWOMAN) is positively and significantly related to long term performance (Q). Therefore, it seems that the positive stock market reaction to the appointment of female directors is also reflected in an improvement in the firm's competitive advantage. It appears to be the case that any negative aspects of greater female board representation are outweighed by positive aspects. This is consistent with Hypothesis 2. This result is similar to those obtained by Erhardt et al. (2003) and Carter et al. (2003) in the US market.

As far as the other board attributes are concerned, we find that higher share ownership by directors (PDIROW) seems to align directors' interests with those of outside shareholders, increasing firm value. The negative coefficient for board size

Table 8 System GMM panel data estimation of the influence of female boardroom presence on firm value

Dependent variable Q				
Variable	SE	Coefficient	SE	Coefficient
Constant	0.353	3.884***	0.446	3.801***
DWOMAN	0.058	0.383***		
PWOMEN			0.002	0.031***
PDIROW	0.002	0.004**	0.001	0.005***
LNDIR	0.241	-0.530**	0.217	-0.404*
CEOCHAT	0.044	-0.140***	0.027	-0.137***
LEV	0.161	-0.397**	0.154	-0.471***
AGE	0.003	0.003	0.003	0.003
ROA	0.002	0.009***	0.002	0.013***
SIZE	0.084	-0.415***	0.079	-0.436***
z_1	0.000		0.000	
z_2	0.000		0.000	
m_2	0.271		0.525	
Sargan	53.74 (137)		56.35 (137)	

Non-financial firms on Spain's continuous market 1995–2000

Variables Q , approximation of Tobin's Q ; DWOMAN, binary variable that takes a value of 1 when there is at least one woman on the board of directors, and 0 otherwise; PWOMEN, percentage of women on the board of directors; PDIROW, percentage of directors' ownership; LNDIR, logarithm of the number of directors on the board; CEOCHAT, dummy taking value 1 when chairman and CEO are the same person; LEV, total debt over total assets; AGE, logarithm of the number of years since the firm's foundation, in years; ROA, return on assets; SIZE, logarithm of the book value of the total assets of the firm; z_1 and z_2 are two Wald tests of the joint significance of the reported coefficients and the joint significance of the time dummy variables, respectively (asymptotically distributed as χ^2 under the null of no relationship, probability is shown); m_2 is a second-order serial correlation test using residuals in first differences, asymptotically distributed as $N(0, 1)$ under the null of no serial correlation; Sargan is a test of the over-identifying restrictions, asymptotically distributed as χ^2 under the null of no correlation between the instruments and the error term, with degrees of freedom in parentheses

*, **, *** Significance at the 1 and 5% levels, respectively

(LNDIR) is consistent with the view that larger boards can hinder internal decision-making and increase free riding. The negative coefficient for the CEO/chairman duality variable (CEOCHA) suggests that the concentration of power enables this person to control the information available to other board members, thereby preventing them from effectively performing their monitoring role.

Turning to the control variables, we can observe that firms with greater debt (LEV) have a significantly lower value. However, the number of year's since the firm's stock was exchange-listed (AGE) is not significantly related to firm value. Finally, firms that experience greater accounting profitability (ROA) and that are smaller (SIZE) have a higher value.

When we substitute the percentage of women (PWOMEN) on the board for the presence of a woman on the board (DWOMAN) the signs and significance levels of the coefficients for each of the other possible explanatory variables are very similar. Our results thus confirm a positive effect of board gender on firm value in the long term.

The two Wald Tests (z_1 and z_2) report the joint significance of the reported coefficients and of the time dummies, respectively. To check for potential misspecification of the models, we use the m_2 statistic, which tests for lack of second-order serial correlation in the first-difference residuals. This hypothesis of second-order serial correlation is always rejected. Finally, Sargan's Test confirms the absence of correlation between the instruments and the error term in all of our models, thereby confirming the suitability of the instruments used in the estimations.

7 Conclusions

This study offers new insights into the effect of board gender diversity on stock prices using data from firms listed in Spain, a civil law country characterised by concentrated and largely family ownership, low legal protection for investors, pyramidal ownership structures and boards of directors that are not totally independent of managers. Spain is also a country which has traditionally had a low proportion of women occupying responsible positions in business, a situation which the Government has recently begun to address via legislative changes and corporate governance reforms.

Our event study analysis demonstrates that there are positive abnormal stock market returns around the announcement dates of female boardroom appointments in Spain when we use a non-parametric test. Although we do not find significant reactions when we use a parametric test, we consider the non-parametric test to be more appropriate, given the characteristics of our sample. The results of our regression analysis using the system GMM technique indicates that the presence of women on the board has a positive and significant effect on long term firm value, controlling for other possible determinants of firm value.

Overall, our result suggests, at a minimum, that increased gender diversity can be achieved without destroying shareholder value, and that the contribution made by female directors is reflected not just in a positive stock market reaction to the announcement of their appointment but by future increases in firm value. Our results suggest that pressure may build in Spain for a modification to the 2007 *Gender*

Equality Act, to move from a voluntary to a mandatory 40% quota. Given the political initiatives in Spain to increase the number of women on corporate boards, the challenge for policy-makers will be to ensure that there is a pool of sufficiently qualified women to fill board of director positions. Whether improvements in performance arising from greater female boardroom presence can be sustained is an interesting topic for future research, along with micro-level analysis of board processes and dynamics that will enable the sources of value arising from greater gender diversity to be identified.

References

- Adams, R. B., Almeida, H., & Ferreira, D. (2005). Powerful CEOs and their impact on corporate performance. *Review of Financial Studies*, 18, 1403–1432.
- Agrawal, A., & Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, 31, 377–397.
- Aldama Report (2003). *Report of the special commission for the promotion of the transparency and the security in the financial markets and in listed companies*. Madrid.
- Andreoni, J., & Vesterlund, L. (2001). Which is the fair sex? gender differences in altruism. *The Quarterly Journal of Economics*, 116, 293–312.
- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68, 29–51.
- Black, B. S., Jang, H., & Kim, W. (2006). Does corporate governance predict firms' market values? evidence from Korea. *Journal of Law, Economics, and Organization*, 22, 366–413.
- Block, S. (1999). The role of non-affiliated outside directors in monitoring the firm and the effect on shareholder wealth. *Journal of Financial and Strategic Decisions*, 12, 1–8.
- Blundell, R., & Bond, S. (1998). Initial conditions and moment conditions in dynamic panel data models. *Journal of Econometrics*, 87, 115–143.
- Böhren, O., & Ström, R. O. (2005). *Aligned, informed, and decisive: Characteristics of value-creating boards*. Oslo, September: Working Paper Norwegian School of Management BI.
- Brammer, S., Millington, A., & Pavelin, S. (2007). Gender and ethnic diversity among UK corporate boards. *Corporate Governance: An International Review*, 15(2), 393–403.
- Brick, I. E. & Chidambaram, N. K. (2007). Board meetings, committee structure, and firm performance. Available at SSRN: <http://ssrn.com/abstract=1108241>.
- Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, 14, 3–31.
- Brown-Kruse, J., & Hummels, D. (1993). Gender differences in laboratory public goods contribution: Do individuals put their money where their mouth is? *Journal of Economic Behaviour and Organization*, 22, 255–267.
- Campbell, J., Lo, A., & MacKinlay, C. (1997). *The Econometrics of financial markets*. Princeton: University Press.
- Carrera, N., Gutiérrez, I., & Salvador, C. (2001). Gender, the state and the audit profession: Evidence from Spain (1942–88). *European Accounting Review*, 10, 803–815.
- Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial Review*, 38, 33–53.
- Catalyst. (2004). *The bottom line: Connecting corporate performance and gender diversity*. New York, NY: Catalyst.
- Catalyst. (2006). *2005 Census of women board directors of the fortune 500*. New York, NY: Catalyst.
- Catalyst. (2007). *2006 Census of women board directors of the fortune 500*. New York, NY: Catalyst.
- Catan, T. (2006). In the dark heart of machismo shines a beacon of sexual equality. *The Times*, November 29.
- Comisión Nacional del Mercado de Valores. (2006). *Report of the special working group on the good governance of listed companies*. Madrid: CNMV. 19 May.

- Corrado, C. J. (1989). A nonparametric test for abnormal security-price performance in event studies. *Journal of Financial Economics*, 23, 385–395.
- Cox, T. H., & Blake, S. (1991). Managing cultural diversity: Implication for organizational competitiveness. *Academy of Management Executive*, 5, 45–56.
- Curdová, A. (2005). Discrimination against women in the workforce and the workplace. *Committee on Equal Opportunities for Women and Men, Spanish Parliamentary Assembly*, Doc. 10484.
- Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of Corporate Finance*, 7, 209–233.
- Du Rietz, A., & Henrekson, M. (2000). Testing the female underperformance hypothesis. *Small Business Economics*, 14(1), 1–10.
- Dyckman, T. R., Philbrick, D., & Stephan, J. (1984). A comparison of event study methodologies using daily stock returns: A simulation approach. *Journal of Accounting Research*, 22, 1–30.
- Earley, P. C., & Mosakowski, E. (2000). Creating hybrid team cultures: An empirical test of transnational team functioning. *Academy of Management Journal*, 43, 26–49.
- Eisenberg, T., Sundgren, S., & Wells, M. T. (1998). Larger board size and decreasing firm value in small firms. *Journal of Financial Economics*, 48, 35–54.
- Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director's diversity and firm financial performance. *Corporate Governance: An International Review*, 11, 102–111.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics*, 26, 301–325.
- Farrell, K. A., & Hersch, P. L. (2005). Additions to corporate boards: the effect of gender. *Journal of Corporate Finance*, 11, 85–206.
- Friederich, S., Gregory, A., Matatko, J., & Tonks, I. (2002). Short-run returns around the trades of corporate insiders on the London stock exchange. *European Financial Management*, 8(1), 7–32.
- Grossman, S. J., & Hart, O. (1982). Corporate financial structure and managerial incentives. In J. McCall (Ed.), *The economics of information and uncertainty* (pp. 107–140). Chicago: University of Chicago Press.
- Hambrick, D. C., Cho, T. S., & Chen, M. J. (1996). The influence of top management team heterogeneity on firms' competitive moves. *Administrative Science Quarterly*, 41, 659–684.
- Heidrick, & Struggles, (2007). *Corporate governance in Europe 2007 report*. Paris: Raising the Bar.
- Hermalin, B., & Weisbach, M. S. (1991). The effect of board composition and direct incentives on corporate performance. *Financial Management*, 20, 101–112.
- Himmelberg, C. P., Hubbard, R. G., & Palia, D. (1999). Understanding the determinants of managerial ownership and the link between ownership and performance. *Journal of Financial Economics*, 53, 353–384.
- Holmes, S. (2008). Smashing the glass ceiling. *BBC News online*, 11 January. <http://news.bbc.co.uk/1/hi/business/7176879.stm>.
- ILO. (2007). *Global employment trends for women brief*. Geneva: International Labour Organization.
- Jehn, K. A., & Bezrukova, K. (2003). *A field study of group diversity, group context, and performance, working paper*. Philadelphia: The Wharton School, University of Pennsylvania.
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance and takeovers. *American Economic Review*, 76, 323–339.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3, 305–360.
- Jianakoplos, N. A., & Bernasek, A. (1998). Are women more risk averse? *Economic Inquiry*, 36, 620–630.
- Kanter, R. M. (1977). *Men and women of the corporation*. New York: Basic Books.
- Kini, O., Kracaw, W., & Mian, S. (1995). Corporate takeovers, firm performance, and board composition. *Journal of Corporate Finance*, 1, 383–412.
- Klein, A. (2002). Economic determinants of audit committee independence. *The Accounting Review*, 77, 435–452.
- Konrad, A. M., & Kramer, V. W. (2006). How many women do boards need? *Harvard Business Review*, 84(12), 22.
- Lau, D. C., & Murnighan, J. K. (1998). Demographic diversity and faultlines: The compositional dynamics of organizational groups. *Academy of Management Review*, 23, 325–340.
- Leech, D., & Manjón, M. C. (2002). Corporate governance in Spain (with an application of the power indices approach). *European Journal of Law and Economics*, 13(2), 157–173.

- Martín-Ugedo, J. F. (2003). Equity rights in Spain: Flotation costs and wealth effects. *Journal of Business Financial and Accounting*, 30, 1277–1304.
- Mateos de Cabo, R., Gimeno, R. & Lorenzo, E. (2007). Discrimination on the Spanish Boards of Directors: Analysis and economic implications. Available at SSRN: <http://ssrn.com/abstract=1099902>.
- McSmith, A. (2008). Closing the gender gap: Why women now reign in Spain. *The Independent*, 16 April.
- Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, 20, 293–315.
- Myers, S. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5, 147–175.
- Nowell, C., & Tinkler, S. (1994). The Influence of gender on the provision of a public good. *Journal of Economic Behavior & Organization*, 25, 25–36.
- Olivencia Report (1998). *Report of the special commission to consider a code of ethics for companies boards of directors*, Madrid.
- Organisation for Economic Co-operation and Development. (2006a). *OECD labour force statistics by age and sex*. Paris: OECD.
- Organisation for Economic Co-operation and Development. (2006b). *Education at a Glance 2006*. Paris: OECD.
- Peterson, P. P. (1989). Event studies: A review of issues and methodology. *Quarterly Journal of Business and Economics*, 28(3), 36–66.
- Randøy, T., Thomsen, S., & Oxelheim, L. (2006). *A nordic perspective on corporate board diversity*. Oslo: Working Paper Nordic Innovation Centre.
- Rechner, P. L., & Dalton, D. R. (1991). CEO duality and organizational performance: A longitudinal analysis. *Strategic Management Journal*, 12, 155–160.
- Richard, O. C. (2000). Racial diversity, business strategy, and firm performance: A resource-based view. *Academy of Management Journal*, 43, 164–177.
- Richard, O. C., Barnett, T., Dwyer, S., & Chadwick, K. (2004). Cultural diversity in management, firm performance, and the moderating role of entrepreneurial orientation dimensions. *Academy of Management Journal*, 47, 255–266.
- Robinson, G., & Dechant, K. (1997). Building a business case for diversity. *Academy of Management Executive*, 11, 21–30.
- Rose, G. (2007). Does female board representation influence firm performance? The Danish evidence. *Corporate Governance: An International Review*, 15(2), 404–413.
- Rosenstein, S., & Wyatt, J. G. (1990). Outside directors, board independence, and shareholder wealth. *Journal of Financial Economics*, 26, 175–191.
- Ryan, M. K., & Haslam, S. A. (2005). The glass cliff: Implicit theories of leadership and gender and the precariousness of women's leadership positions. In B. Schyns & J. R. Meindl (Eds.), *Implicit leadership theories: Essays and explorations*. Greenwich, CT: Information Age Publishing.
- Seiler, M. J. (2000). The efficacy of event study methodologies: Measuring EREIT abnormal performance under conditions of induced variance. *Journal of Financial and Strategic Decisions*, 13, 101–112.
- Shrader, C. B., Blackburn, V. B., & Iles, J. P. (1997). Women in management and firm financial value: An exploratory study. *Journal of Managerial Issues*, 9, 355–372.
- Singh, V., Terjesen, S., & Vinnicombe, S. (2008). Newly appointed directors in the boardroom: How do women and men differ? *European Management Journal*, 26, 48–58.
- Smith, N., Smith, V., & Verner, M. (2006). Do women in top management affect firm performance? A panel study of 2,500 Danish firms. *International Journal of Productivity and Performance Management*, 55, 569–593.
- Tajfel, H., & Turner, J. (1985). The social identity of inter-group behavior. In S. Worchel & W. Austin (Eds.), *Psychology and intergroup relations* (pp. 7–24). Chicago: Nelson-Hall.
- Tyson, L. (2003). *The Tyson report on the recruitment and development of non-executive Directors*, London Business School.
- Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of Financial Economics*, 53(1), 113–142.
- Watson, W. E., Kumar, K., & Michaelsen, L. K. (1993). Cultural diversity's impact on interaction process and performance: Comparing homogeneous and diverse task groups. *Academy of Management Journal*, 36, 590–602.
- Weisbach, M. (1988). Outside directors and CEO turnover. *Journal of Financial Economics*, 20, 431–460.

- Williams, C. (1992). The glass escalator: Hidden advantages for men in the “female” professions. *Social Problems*, 39, 253–267.
- Williams, K., & O’Reilly, C. (1998). Forty years of diversity research: A review. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (pp. 77–140). Greenwich: JAI Press.
- Wools, D. (2007). *Spain lawmakers OK women’s equality law*, Associated Press, March 15.
- Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40, 185–211.

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