What Do We Know About Women on Boards?

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In this article, we examine the current state of the research on firm performance and the gender diversity of firms' boards of directors. First, we present and analyze descriptive statistics for 13,000 board seats of the Standard and Poor's (S&P) 1500 companies for the years 2003-2007. Next, we review the conceptual propositions of the business case for women on boards, i.e., the link between women directors and firm financial performance. Finally, we review selected empirical evidence on the link between women directors and firm financial performance. We find the evidence on the business case for women directors is mixed, but tends to support the view that the ability of women directors to influence profitability and shareholder value is contingent on the specific circumstances of each company.

■The inclusion of women on boards is often seen as a good business decision because women directors are hypothesized to increase the value of the firm through their performance as directors. The business case for female directors implies that women are not substitutes for men directors of equal ability and qualifications, but women instead may have unique attributes that increase the performance of the board, and ultimately the performance of the firm. Additionally, the consideration of qualified women for board positions increases the talent pool for directors and increases the probability that better qualified directors will serve on the board even if women are perfectly interchangeable with men. Paradoxically, the percentage of women directors on most boards is relatively low compared to the number of women in the general population and the number that work in managerial positions in corporations. The percentage of women directors has not increased significantly over time.[1]

Given the heightened awareness of the importance of good governance in the corporate world, the ability to find competent directors is generally considered very important to the success of a corporation. If women provide an additional and/or uniquely qualified source of talent, corporations may be able to increase value for shareholders and benefit other constituencies of the firm by including competent women on the board. The topic of women directors is not a trivial question for two important reasons. First, the inclusion of women on boards may create value for shareholders and other corporate constituencies. Second, given the role of women in modern society, competent women deserve equal opportunities to serve as directors and executive managers.[2]

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[1]Our calculations, to be discussed in-depth later, for the Standard and Poor's (S&P) 1500 companies indicate approximately 11% of the board seats were held by females over the period 2003-2007.

[2]Some nations emphasize the social justice dimension of board membership. In 2003, Norway passed a law requiring that 40% of the board seats on public limited companies be held by women (Hoel 2008). Spain introduced a quota for the inclusion of women on boards and other European countries including Italy, France, and the Netherlands are moving in this direction (Economist 2010). Catalyst, an advocacy and research non-profit organization, argues that more women should serve on boards not only because it is equitable, but because it is good business (Catalyst 2009).

Over the past ten years research and analysis increased our knowledge of women directors and we address some of this body of information here, but this analysis is not a traditional literature review.

On the surface, the ability to empirically assess the benefits of women directors appears to be straightforward analysis of data. However, empirical investigation is problematical for several reasons. First, the theoretical link between board composition, board process, and board performance is not derived from a single unified theory. Why should we expect gender diversity of the board to produce better board performance? Furthermore, how does board performance translate into increased profitability and shareholder value? A sizeable body of theory from several diverse fields, including finance, economics, law, ethics, organizational behavior, and social psychology, is the basis for theoretical analysis of the gender diversity of corporate boards and firm performance. Second, board characteristics, board process, board selection, and firm performance are largely endogenous (Hermalin and Weisbach 2003; Adams, Hermalin, and Weisbach, 2010). Gender diversity is a subset of the larger issue of board composition, in some ways analogous to issues such as board independence and the number of directors on a single board. Endogeneity creates both estimation problems and confusion in interpreting the results of empirical analysis (Adams, Hermalin, and Weisbach, 2010). The available evidence indicates that rigorous statistical analysis is complicated and the results are not robust to the method of estimation employed.

The purpose of this paper is to review selected research on women directors and discuss some of the conclusions and implications. Because of the rather large number of articles on this topic, we cannot realistically cover all of them in a single article. For this reason, our focus is primarily on the research that links female directors and the financial performance of the firm (i.e. the business case for gender diversity of the board). It is our view that this is the central question in any board composition discussion, i.e., does a particular characteristic of board composition create value for shareholders? We review research from several disciplines, but rely most on research from the areas of finance and economics.[3] In the first section of the paper, we analyze descriptive statistics derived from the Investor Responsibility Research Center (IRRC) database to gain an understanding of the nature of gender diversity of US corporate boards. We present the conceptual propositions of the business case for gender diversity of the board and also the arguments that question the business case in the second section of the paper. In section two, we also review some of the theory that applies to the link between women directors and firm performance. We consider the empirical evidence on women directors and financial performance in the third section and describe the estimation challenges of this line of inquiry. In the final section, we discuss the implications of the current state of our understanding of female directors and corporate governance.

I. The Current Status of Women on Boards

In this section, we present some simple descriptive statistics using the IRRC database to provide a snapshot of the current state of women on boards. The IRRC is now affiliated with RiskMetrics and is a partner with Wharton Research Data Services (WRDS). We use data for the five-year period of 2003 through 2007. The dataset provides detailed information on over 13,000 board seats each year for the S&P 1500 companies.[4] Descriptive statistics can only provide a general idea of trends and characteristics even though we analyze a large number of observations.

A. Inclusion of Women on Corporate Boards

Table I provides the number of men and women, as well as the percentage of women, on the boards of directors of the S&P 1500 firms, over the 2003-2007 period. An examination of Table I reveals that approximately 1,500 board seats are held by women over the sample period. On average, one female is on the board of each company. The ratio of board seats held by women to total board seats is approximately 11% and ranges from 10.14% to 11.91%. The ratio edged up some, but not substantially over the five-year period. The number of board seats held by women increased by 153 seats during the sample period, a time period when boards were decreasing the number of directors slightly.

The 2009 Catalyst Census of the board seats of Fortune 500 corporations held by women indicates a female participation ratio of 15.2% (Catalyst 2009). What accounts for the difference in this ratio and the ratio we calculate for S&P 1500 companies? The answer is simple, but important. Smaller capitalization companies have fewer board seats held by women. Table II reveals about 48% of the S&P 500 large-cap companies have at least one board seat filled by a female, but only 25% of both the S&P 400 mid-cap companies and the S&P 600 small-cap companies have at least one woman on the board. In addition, while not

[3]Refer to Terjesen, Sealy, and Singh (2009) for an extensive review of the related research that appears in journals with a behavioral orientation. For more analysis with a behavioral orientation see Vinnicombe, Singh, Burke, Bilimoria, and Huse (2008).

[4]The 2003 through 2007 time period is used because it is the period after the enactment of the Sarbanes-Oxley Act and before the recent economic downturn.

Table I. The Distribution of Board Seats Classified by the Gender of the Holder for the S&P 1500 Companies

Data are derived from the Investor Responsibility Research Center (IRRC) database. The sample unit in the IRRC data is the board seat for a company, not a particular director. If a director serves on two or more boards, that individual director will be counted more than once in the computed numbers in this table. For example, 10,987 individual directors held 13,337 board seats in 2007.

	2003	2004	2005	2006	2007
Total Number of Seats	13,792	13,820	13,416	13,372	13,337
Seats Held by Men	12,356	12,295	11,888	11,779	11,748
Seats Held by Women	1,436	1,525	1,528	1,593	1,589
Percent Held by Women	10.14	11.03	11.39	11.91	11.91

Table II. The Percentage of S&P 1500 Companies with One or More Women Directors

Data are derived from the Investor Responsibility Research Center (IRRC) database.

	2003	2004	2005	2006	2007
S&P 500 Companies	49.79	49.90	48.17	48.15	46.70
S&P 400 Mid-Cap Companies	24.86	25.57	26.96	27.12	26.87
S&P 600 Small-Cap Companies	25.25	24.52	24.87	24.83	26.43

Table III. The Percentage of Board Seats Held by Women for S&P 500 Companies: A Decade of Data

Data are derived from the Investor Responsibility Research Center (IRRC) database. The sample unit in the IRRC data is the board seat for a company, not a particular director. If a director serves on two or more boards, that individual director will be counted more than once in the computed numbers in this table.

Year	Total Number of Board Seats	Number of Board Seats Held by Women	Percentage of Board Seats Held by Women
1998	5,535	577	10.42
1999	5,561	650	11.69
2000	5,407	664	12.28
2001	5,227	642	12.28
2002	5,316	680	12.79
2003	5,201	696	13.38
2004	5,307	761	14.34
2005	5,046	735	14.57
2006	5,077	767	15.11
2007	5,031	742	14.75

reported in the tables, we find that in 2007, 14.8% of board seats for the S&P 500 were held by women, 12.9% of board seats for the S & P 400 (mid-cap) firms were held by women, and only 8.9% of board seats for the S&P 600 (small-cap) were held by women. The differences in the means between each group of firms were statistically significant. This seems to suggest that smaller, less visible firms are less likely to be subjected to pressure from activist shareholders and other stakeholders to increase the diversity of their boards.

Table III reports the ratio of board seats held by women to total board seats is about 14.5% for S&P 500 companies over the five year period 2003-2007. This ratio is very close to the 2007 Catalyst number for the Fortune 500 companies of 14.8%, as we would expect (Catalyst 2007). If we take a ten year perspective for the S&P 500 companies for the decade 1998-2007, we see that the percentage of board seats held by women has increased from 10.42% in 1998 to 14.75% in 2007. However, the ratio appears to have stopped growing during the last four years of the decade.

Analysis of Tables I, II, and III yields some interesting and important information on the inclusion of women on corporate boards. First, about half of the 500 largest corporations in the US did not have any female directors over the sample period. More striking is the fact that about 75% of the S&P mid-cap and small-cap companies did not have any female directors. This last point is surprising because the S&P 400 and 600 companies are not as large as the top 500, but they are still some of the largest and most prominent companies in the US. Second, the female inclusion rate for the S&P 1500 board seats has stabilized between 11 and 12%. The observation that the percentage of women holding board seats has stabilized, i.e., stopped growing, is supported by the fact that Catalyst's 2008 inclusion ratio was 15.2%, the same as 2009 (Catalyst 2009).

B. Women Director Characteristics

Our analysis of some of the characteristics of corporate directors available in the IRRC database is presented in Table IV. The first row of Table IV reports that, on average, female directors are younger than male directors by approximately 4 to 5 years. A simple difference in means test of individual directors' ages for 2007 indicates the difference in means is significant at the 0.01 level. Furthermore, the average age of all directors increased some over time.

Table IV reveals that women and men directors serve on about the same number of additional boards. The average numbers reported for women appear to be slightly higher than men, but these differences are not statistically different from zero.[5]

For the years 2003 through 2006, the percent of women directors that were independent as defined by the IRRC was about 88% while the percent of men directors that were independent was about 68%. In 2007, the percentage of independent women directors was 91.95 and the percentage of independent men directors was 75.48. We conduct a simple difference in means test for 2007 and it suggests that the two means are significantly different at the 0.01 level. We conclude that women directors are more likely to be independent than men directors.

Table IV reports the board meeting attendance record of men and women directors. The percentage of women directors that missed 25% or more board meetings is about the same as that for men directors. Men and women directors' attendance records are not statistically different in our simple analysis. Adams and Ferreira (2009) find that fewer women than men miss 25% or more of board meetings in a regression analysis.

In summary, the only observed differences in men and women directors of the small number of characteristics we reviewed is that women are more likely to be younger than men and come from outside the firm.[6] Men and women directors appear to serve on about the same number of additional boards and have similar board attendance based on simple descriptive statistics.

C. Chief Executive Officer Positions Held by Women Directors

Table V reports chief executive officer (CEO) and board chair positions, classified by gender, over the 2003-2007 period. Table V shows that female directors are less likely to be the CEO of the company for which they serve as a director than male directors. Approximately 2% of the board seats over the sample period were filled by women that were the CEO of the company while roughly 11% of the board positions were filled by men who were the CEO. We conduct a simple difference in means test for the 2007 data and find the difference is significant at the 0.01 level.

[5]The sample unit in the IRRC data set is the board seat for a specific company not the actual individual director holding that seat. Directors that hold more than one directorship will be counted more than once. The number calculated for additional board seats in Table IV is the number of additional board seats held by that board position, not that individual director. The means test was adjusted to reflect the number of additional seats held by each individual director. We follow this same procedure in other calculations.

[6]One obvious omission in the director characteristics we review is educational background. Unfortunately, the IRRC data does not provide educational background. We overcome this limitation to some extent by considering the professional background of directors.

Table IV. The Characteristics of Directors of the S&P 1500 Companies: Classified by Gender

Data are derived from the Investor Responsibility Research Center (IRRC) database. The sample unit in the IRRC data is the board seat for a company, not a particular director. If a director serves on two or more boards, that individual director will be counted more than once in the computed numbers in this table. For example, 10,987 directors held 13,337 board positions in 2007.

	2003	2004	2005	2006	2007
Age in Years:					
Seats held by Women	55.02	55.26	55.58	57.76	57.46
Seats held by Men	59.91	60.12	60.36	62.38	61.85
Number of Additional Boards:					
Seats held by Women	1.03	1.00	0.89	0.86	0.97
Seats held by Men	0.80	0.81	0.78	0.76	0.89
Percent Independent:					
Seats held by Women	86.63	88.39	88.42	88.64	91.95
Seats held by Men	66.74	68.38	69.38	69.95	75.48
Percent that Missed 25% of Board Meetings:					
Seats held by Women	1.53	1.05	0.33	1.38	1.01
Seats held by Men	1.60	1.25	0.43	1.15	0.83

Table V. The Chief Executive Officer and Chair of the Board Positions Held by Directors of the S&P 1500 Companies: Classified by Gender

Data are derived from the Investor Responsibility Research Center (IRRC) database. The sample unit in the IRRC data is the board seat for a company, not a particular director. If a director serves on two or more boards, that individual director will be counted more than once in the computed numbers in this table. For example, 10,987 directors held 13,337 board positions in 2007. The percentages in this table are calculated as follows: Percent CEO of the Company: Seats held by Women = the total number of board seats that are held by women with the title of CEO for the same company that they are serving as a director divided by the total number of board seats that are held by women. Percentages for other categories were calculated in a similar manner.

	2003	2004	2005	2006	2007
Percent CEO of the Company:					
Seats held by Women	1.81	1.64	1.70	2.01	2.71
Seats held by Men	11.52	11.38	11.58	11.31	11.35
Percent Chair of the Board:					
Seats held by Women	0.97	1.18	0.92	1.44	1.01
Seats held by Men	9.21	9.02	8.84	8.10	6.55
Percent CEO of Another Company:					
Seats held by Women	12.40	12.92	9.56	5.46	3.21
Seats held by Men	13.78	13.51	11.15	8.91	7.02

The same result is observed when the likelihood a woman director is the chair of the board (COB) is considered. Table V also reports that about one percent of the women directors for S&P 1500 companies are the COB for the company but approximately eight percent of the men directors are the COB.

An examination of Table V reveals that a higher percentage of women directors are CEOs of another company than the CEO of the company for which they are director. However, a higher percentage of male directors are CEOs of another company than female directors. The results are less clear because the percentage of both men and women directors that are CEOs of another company decreased from 2003 to 2007. In 2007, the difference between the percentage of women directors that were CEOs of another company and the percentage of men directors that were CEOs of another was most pronounced although overall lower.

In summary, women are less likely to be the CEO or COB of the company for which they serve as a director than a man. Furthermore, women directors are less likely to be the CEO of another company than men directors. However, the percentage of women directors that are CEO of another company is much higher than the number of women directors that are the CEO of the company for which they serve as director.

D. Committee Assignments of Women Directors

Table VI presents the percentage of total women directors that serve on various board committees compared to the percentage of total men directors that serve on board committees. The results are consistent for all of the committees considered. A higher percentage of total women directors serve on all of the committees than men directors. By higher percentage of women directors, we mean the ratio of women directors that are a member of a particular committee divided by total women directors. In other words, 40.25% of all women directors for S&P 1500 companies served on the compensation committee for their company in 2003. This number is not a percentage of total directors because men largely outnumber women on boards. The absolute number of male directors on compensation committees for 2003 is approximately 4,610 compared to approximately 578 women directors on compensation committees. Table VI also reports that a lower percentage of women directors serve as the chair of both the compensation committee and the audit committee.[7] By lower percentage, we mean that the total number of women directors that serve as the chair of a particular committee divided by the total number of women directors is lower than the same ratio for men directors.

An examination of Table VI reveals the difference between the percentage of women directors on the compensation committee and the percentage of men directors on the compensation is smaller than the nomination, audit, or corporate governance committees. For example, 33.86% of women directors served on the compensation committee while 28.77% of men directors served on the compensation in 2007, but 37.44% of women directors served on the audit committee, while 29.19% of men directors served on the audit committee for 2007. The difference in women and men for the compensation committee is 5.09% compared to 8.25% for the audit committee. We interpret these differences as an indication, certainly not proof, that women are more likely to be appointed to the nomination, audit, and corporate governance committees than the compensation committee. Adams and Ferreira (2009) come to a similar conclusion based on their regression analysis.

In summary, we interpret the results in Table VI to mean that women directors are more likely than men directors to be appointed to a board committee, but less likely than men to be appointed the chair of a board committee. It appears that women directors are more likely to be appointed to the nomination, audit, or corporate governance committees than the compensation committee.

E. Professional Backgrounds of Women Directors

Table VII contains data on the professional backgrounds of both men and women directors for the S&P 1500 for the year 2007. The data was calculated from the IRRC data to reflect characteristics of the individual director, not the board seat. The results suggest that a higher percentage of women directors than men directors have academic, consulting, and medicine backgrounds. However, a higher percentage of male directors than female directors have backgrounds as executives and backgrounds in finance and real estate. A higher percentage of men directors than women directors are retired. These results support the idea that women directors are less likely to have a background in business than men.

F. Ethnicity of Women Directors

As shown in Table VIII, in 2007 a high percentage of directors, both men and women, for S&P 1500 companies are Caucasian. Almost 90% of men directors are Caucasian while about 85% of women directors are Caucasian. The

[7]We consider the chairs of these two committees because these are the only two committees in the IRRC data base with complete chair information.

Table VI. Board Committee Assignments for the S&P 1500 Companies: Classified by Gender

Data are derived from the Investor Responsibility Research Center (IRRC) database. The sample unit in the IRRC data is the board seat for a company, not a particular director. If a director serves on two or more boards, that individual director will be counted more than once in the computed numbers in this table. For example, 10,987 directors held 13,337 board positions in 2007. The percentages in this table are calculated as follows: Compensation Committee: Percent Women = the total number of board seats that are held by women who serve on the company's compensation committee divided by the total number of board seats that are held by women. Percentages for other categories were calculated in a similar manner.

	2003	2004	2005	2006	2007
Compensation Committee:					
Percent Women	40.25	40.79	41.56	31.63	33.86
Percent Men	37.31	37.60	38.12	25.69	28.77
Nominating Committee					
Percent Women	44.01	45.70	47.19	35.53	36.01
Percent Men	34.56	37.62	38.64	28.04	29.86
Audit Committee					
Percent Women	46.03	43.74	44.70	34.84	37.44
Percent Men	39.26	39.29	39.23	26.28	29.19
Corporate Governance Comm.					
Percent Women	40.18	44.72	47.32	35.97	36.00
Percent Men	29.48	35.79	37.37	27.63	29.30
Chair of Compensation Comm.					
Percent Women	5.36	6.16	7.07	8.79	7.55
Percent Men	8.92	9.65	9.93	12.82	10.29
Chair of Audit Committee					
Percent Women	6.06	6.03	6.41	8.60	6.42
Percent Men	8.51	10.16	10.45	13.18	10.75

percentage of women directors that are African-American is 9% compared to 5% for men directors. The difference in means is statistically significant. There is no difference in the percentage of women directors that are Hispanic or Asian and the percentage of men directors that are Hispanic or Asian. Note that while female directors are more likely to be African-American than male directors, neither African-American men nor women are highly represented on corporate boards. Approximately 14.5% of women directors on S&P 1500 boards are women of color in 2007.

II. The Business Case for Women on Boards

One of the most important issues concerning women on boards is referred to as the business case for board diversity. Do women on boards improve board performance and, as a result, the profitability of the firm and return to shareholders? The pros and cons of this proposition are more nuanced than appear on the surface. In this section we examine the theoretical reason why the presence of women on boards may or may not add value.

One reason to include women on boards is that women embody a large pool of human capital that is available to the corporation.[8] Women comprise 46.7% of the US labor force and 51.4% of management, professional, and related occupations in the US (Catalyst 2010). Given this large number of potential women directors, the probability is that many women have developed significant human capital through education and experience and are competent to be directors. Even if only the most qualified women are selected, the pool of potential directors is increased and possibly doubled. A counter argument to this idea is that many women have developed impressive human capital, but

[8]The work of Becker (1964) provides a theoretical foundation for this proposition.

Table VII. Professional Background of Directors on S&P 1500 Boards in 2007: Classified by Gender

Data are derived from the Investor Responsibility Research Center (IRRC) database for the year 2007. The IRRC data was adjusted to make the sample unit the director. The professional background classifications are those used by the IRRC. Not all of the directors' professional backgrounds are identified by the IRRC. The t-statistic is for a simple difference in means test.

	Women (%)	Men (%)	t-Statistic
Academic	9.5	4.6	5.72***
Accounting	0.8	0.5	0.98
Attorney	3.5	3.4	0.11
Consultant	13.7	6.5	7.15***
Executive	20.4	30.0	-7.76***
Finance	10.1	14.2	-4.36***
Medicine	2.6	1.1	3.26***
Professional Director	0.2	0.1	0.14
Real Estate	1.7	2.4	-1.67*
Retired	19.6	26.2	-5.42***
Number of Directors	1,244	9,743	

***Significant at the 0.01 level.
**Significant at the 0.05 level.
*Significant at the 0.10 level.

it is not the "right" kind of human capital to be a director of a corporation (Terjesen, Singh, and Vinnicombe, 2008). The argument suggests that women may be highly educated with experience in medicine or academics but they do not have sufficient experience in high-level business positions. Our descriptive data indicate that women directors are less likely to come from a business background and less likely to be the CEO of the company or another company. The human capital argument may be supportive of women on boards, but the view that women do not have the appropriate human capital could be a barrier to women on boards.

A second argument for including women on boards is that a more gender diverse board may be a better monitor of managers because women directors are more independent.[9] Women are possibly more independent because they are not traditional men directors with the same perspective and background as managers. Women by virtue of their gender are usually a minority on the board and thus more of an outsider less beholden to management. Adams and Ferreira (2009) find that women directors increase the ability of the board to monitor CEO performance, but they also find that additional monitoring in some well-governed companies may be detrimental. Our simple descriptive statistics indicate that women directors are more likely to be independent than men directors. However, the majority may marginalize minority directors and their input may not be considered in group decisions.[10] Furthermore, factors such as ownership position in the firm may have a more powerful influence on board monitoring than independence.[11]

[9]Agency theory (Jensen and Meckling, 1976) is the obvious theoretical basis for this proposition.

[10]Westphal and Milton (2000) indicate that a complicated set of factors impact the probability that minority directors will be marginalized. Adams and Ferreira (2009) note the theory of tokenism developed by Kanter (1977) that considers isolation of token board members which reduces their impact on the board. Kanter (1977) posits that token members of a group are more visible and under more pressure to perform. This pressure may have both positive and negative consequences. Adams and Ferreira (2009) argue, based on their evidence, that women are more than token board members and women have a positive effect that leads to better corporate governance.

[11]Jensen (1993) and Monks and Minow (2008) argue that the level of equity ownership by directors is more important in increasing the willingness of directors to monitor than independence.

Table VIII. Ethnicity of Directors on S&P 1500 Boards in 2007: Classified by Gender

Data are derived from the Investor Responsibility Research Center (IRRC) database for the year 2007. The IRRC data was adjusted to make the sample unit the director. The ethnicity classifications are those used by the IRRC. Not all of the directors' ethnicities are identified by the IRRC. The t-statistic is for a simple difference in means test.

	Women (%)	Men (%)	t-Statistic
Caucasian	85.2	89.7	-2.92***
African-American	9.0	5.2	3.11***
Hispanic	2.2	2.2	-0.02
Asian	3.5	2.9	0.74
Number of Directors	602	3,865	

***Significant at the 0.01 level.
**Significant at the 0.05 level.
*Significant at the 0.10 level.

One of the central propositions of the business case for gender diversity is that women provide unique and important information to the board and managers that results in better decisions and ultimately increased financial performance.[12] Women directors may have unique knowledge of some consumer markets and certain customers because of their participation in these markets. A related, but much more extensive, proposition follows from resource dependence theory. Pfeffer and Salancik (1978) contend that boards may serve as a link between a corporation and other external organizations to address environmental dependencies. Furthermore, Pfeffer and Salancik (1978) suggest four primary benefits of the external linkages created by boards: directors supply resources such as information and expertise, directors provide and open channels of communication with constituents of importance to the firm, directors obtain commitments of support from important organizations or groups in the external environment, and directors create and supply legitimacy for the firm in the external environment. Women directors may be able to create important and unique links to the labor and product markets. Further gender diversity on the board may send a positive message to shareholders, the public, and government that the company values and understands the nature of diverse participants in the labor and product markets.[13]

Some proponents of women on boards suggest that women change the group dynamics of communication, interpersonal interaction, and decision-making in a positive way that leads to more creative, innovative, and nontraditional decisions and better board performance (McInerney-Lacombe, Bilimoria, and Salipante, 2008). Westphal and Milton (2000) submit that some evidence indicates minority status on a board may lower social cohesion between directors and erect social barriers that hinder minority viewpoints being considered in group decisions. Lau and Murnigham (1998) contend that women on the board may create more diverse opinions and critical thinking but also may cause decision-making to be slower and less effective. The complex social psychology of boards suggests that women on boards may improve board performance, but offers the possibility of no effect, or even a negative effect.

In summary, there are conceptual arguments that support a positive link between women on the board and financial performance but there are logical reasons to expect either no relationship or even a negative relationship. Furthermore, the desirability of board gender diversity may depend on the individual circumstances of the particular company (Carter

[12]Fama and Jensen (1983) suggest that in open corporations, "Internal managers can use their knowledge of the organization to nominate outside board members with relevant complementary knowledge: for example, outsiders with expertise in capital markets, corporate law, or relevant technology who provide an important support function to top managers in dealing with specialized decision problems." Hermalin and Weisbach (1998) indicate that the role of boards to provide information and advice to management could be incorporated into their model of monitoring to make the model richer. Adams and Ferreira (2007) develop a model that includes a central role for the flow of information between the board and CEO.

[13]Booth and Deli (1999) find that the presence of a commercial banker on the board is positively related to total firm debt and they conclude that commercial bankers provide expertise on and links to the bank debt market. Agrawal and Knoeber (2001) find that outside directors with political and legal backgrounds are more likely to be on boards of companies that sell to the government or face government regulation.

et. al. 2010 and Adams and Ferreira 2009). In other words, the effect of board gender diversity on financial performance is contingent on the circumstances that exist for a particular company at a specific time.[14]

III. Women Directors and Firm Financial Performance

In this section, we discuss recent empirical evidence on the relation between women on boards and firm financial performance. We then examine some of the research issues affecting the interpretation of the evidence.

A. Recent Evidence

Unfortunately, the empirical evidence on the business case for women on boards does not provide a definitive answer. The available evidence is developed from different samples and statistical methodologies so that the results are not directly comparable. Furthermore, the results are mixed. We concentrate our discussion on four recent investigations that embody some of the methodological characteristics that are generally considered prerequisites for meaningful analysis.[15]

Carter, Simkins, and Simpson (2003) employ two-stage least squares regression and data from a sample of 638 Fortune 1000 firms for the year 1997 to test the relationship between Tobin's Q and two measures of board gender diversity. They use the percentage of women on the board as one measure of gender diversity and a dummy variable that indicates the presence of women on the board, or not, as the other. They find that both gender diversity measures are positively related to Tobin's Q. Carter, Simkins, and Simpson (2003) is the earliest investigation of the business case for women on boards that attempts to address the problem of the joint-endogeneity of firm performance and board composition. Obviously, the sample is a limitation of this research.

Farrell and Hersch (2005) pursue a unique methodology in this line of research with an investigation that employs Poisson regression to analyze a panel of data from 300 Fortune 1000 firms over the period 1990-1999 (2,974 firm-years). The dependent variable is the number of women added to the board by a company in a given year and the independent variable of primary interest is the lagged return on assets. The results indicate no relationship between the addition of women to the board and the return on assets. Farrell and Hersch (2005) also conduct an event study with 111 events where women are added to the board but the three-day cumulative average residuals are not significant supporting their previous finding of no relationship.

Carter et al. (2010) employ three-stage least squares regression to analyze panel data from 641 different firms included in the S&P's 500 index for the years 1998-2002 (2,563 firm-years). They use time and firm level fixed effects and robust standard errors. The number of women on the board and the number of women on important board committees are independent variables of primary interest and Tobin's Q and the return on assets are the dependent variables. The results show no significant relationship between any of the gender variables and performance variables. This study is unique because it explores gender diversity on board committees and financial performance. They find no significant relationship between the number of women on board committees and Tobin's Q or return on assets.

Adams and Ferreira (2009) conduct an analysis of the impact of women on boards with a sample of firms in the S&P's 1500 index companies for the years 1996-2003. They find evidence that women have better board meeting attendance than men and women directors are associated with better attendance behavior by men directors on the same board. Adams and Ferreira (2009) find that women directors are more likely to serve on committees related to board monitoring than men directors, e.g., audit, nominating, and corporate governance committees, but women directors are less likely to be a member of the compensation committee than men directors. They find evidence that boards with women directors are more likely to remove CEO's after poor stock performance and compensate directors with equity-based compensation. Adams and Ferreira (2009) conclude that women on boards have an important positive effect on board inputs. Surprisingly, they find a negative relationship between the percentage of women directors on the board and Tobin's Q in an instrumental variable two-stage least squares regression with firm fixed effects.[16] Adams and Ferreira (2009) investigate further the finding of a negative link between women on the board and financial performance and conclude that the firms in their sample with weaker shareholder rights benefit from the stronger monitoring of women on the board, but firms with stronger shareholder rights suffer detrimental effects. In other words, the desirability of women on the board is contingent on the circumstances of the individual firm.

The implications of the empirical evidence on the business

[14]Refer to Fiedler (1967) and Lawrence and Lorsch (1967) for a concept referred to as contingency theory.

[15]Refer to Carter et al. (2010) for a discussion of a larger body of evidence.

[16]The sample for the Adams and Ferreira (2009) analysis is large with 9,477 firm-year observations. They also find a negative relationship when return on assets is used as the dependent variable.

case are difficult to determine. We lean toward a contingency view of the link between women on the board and financial performance, but we are suspicious of any strong statement concerning the business case for women on boards based on empirical evidence. A careful consideration of the empirical evidence suggests that the choice of statistical methodology and sample has an important effect on the results.

B. Research Methods

Adams, Hermalin, and Weisbach (2010) point out two important issues for the interpretation of the evidence on board composition. First, there are both theoretical arguments and empirical evidence to strongly indicate that board composition is endogenous. They suggest that board composition is endogenous because economic actors make the decisions that create the board structures to solve governance problems encountered by the firm. Second, Adams, Hermalin, and Weisbach (2010) carefully develop the concept that strategic considerations may result in otherwise similar firms adopting different board compositions and other governance structures. This conclusion is based on the idea that governance is an equilibrium solution and different exogenous parameters can lead to heterogeneous solutions to the governance problem. The bottom line is that investigators may get different results because of the failure to control for endogeneity and/or the tested relationship is heterogeneous across firms.

Adams, Hermalin, and Weisbach (2010) suggest the following reasons that the empirical study of boards is difficult. First, the classification of directors is difficult. For example, a director may be a women, but she also has a unique set of other characteristics as well. Second, the joint endogeneity of most of the variables creates problems including the fact that there are no instrumental variables that will solve the problem. Because the researchers are investigating an equilibrium condition, the directors are not randomly assigned to a particular group making causality very difficult to determine. Third, researchers find evidence based on a commingling of the director selection process and the effect of directors on board actions.

Adams and Ferreira (2009) demonstrate that the results of tests of the link between women on the board and financial performance are not robust to the statistical method. They begin with a simple ordinary least squares equation with industry fixed effects, Tobin's Q as the dependent variable, and the percentage of women directors on the board as the independent variable of primary interest. The coefficient for the percentage of women directors variable is significant (0.10 level) and positive. When the industry fixed effects are replaced with firm level fixed effects in the same equation, the coefficient for the percentage of female directors variable is significant (0.10), but negative. Adams and Ferreira (2009) then estimate the relationship between the percentage of women on the board and Tobin's Q using two-stage least squares and an instrumental variable with firm level fixed effects. The coefficient for the percentage of women on the board is significant (0.05 level) and negative in these equations and the instrument is significant. Finally, they estimate another single equation with Tobin's Q as the dependent variable and the percentage of women on the board as the independent variable of primary interest, but they use an Arellano and Bond procedure with a lagged value of Tobin's Q as one of the independent variables. The coefficient for the percentage of women on the board is not different from zero in this equation. So, the nature of the link between women on the board and financial performance may be positive, negative, or zero dependent on the statistical method applied.

Investigators face some fundamental but critical research questions. How should gender diversity of the board be measured? Most investigations have used the percentage of women on the board, but the idea that a threshold or critical mass of women on the board indicates that the number of women on the board or a dummy variable may be preferable.[17] What should be the measure of financial performance? Tobin's Q is most often used in recent studies, but the accounting return on assets is also used. Carter et al. (2010) point out the differences in these two measurements. What data should be used? Many of the recent studies rely on the IRRC data that provides large panels of data. Even more fundamental is what research design should be used? Adams, Hermalin, and Weisbach (2010) argue for the use of natural experiments to solve the joint endogeneity problem and many investigators with backgrounds in the behavioral sciences believe that questionnaires and clinical case studies are the best way to understand the black box of board process (Nielsen and Huse 2010).[18] In fairness, we should add that many other investigations of corporate governance face some of the same questions. Nevertheless, interested parties are left with the challenging task of evaluating the efficacy of the research methodology for the evidence on women directors and financial performance.

[17]Refer to Erkut, Kramer, and Konrad (2008). Carter et al. (2010) use the number of women on the board as the measure of board gender diversity and the independent variable of primary interest.

[18]Questionnaires and case studies come with a set of limitations as well, including the loss of generality due to smaller samples and the need to control for nonresponse bias.

IV. Conclusion

Our review of the descriptive statistics for approximately 13,000 board seats per year for 1,500 major US corporations over a five-year period suggests several conclusions. First, the percentage of total board seats held by women is approximately 11% and this inclusion ratio is relatively static. The inclusion rate appears low relative to the number of women in the population and the number of women in managerial positions in corporations. Second, many companies have no women directors, especially medium and small capitalization companies. Our evidence suggests that slightly less than 50% of the larger capitalization S&P 500 companies have one or more women directors, but only about 25% of the 1,000 mid-cap and small-cap S&P companies have at least one women director. Third, women directors are more likely to be independent and younger than men directors, but less likely than men directors to serve as the CEO or chair of the board for the same company. Furthermore, women directors are less likely than men directors to be the CEO of another company. Fourth, a higher percentage of women directors are members of board committees, but women are less likely to be the chair of a board committee. Women appear to be more likely than men to be a member of the nomination, audit, and corporate governance committees and less likely to be a member of the compensation committee. Fifth, women are more likely than men to have backgrounds in consulting, academics, and medicine and less likely to be executives and in finance and real estate. Sixth, most directors, both men and women, are Caucasian. A higher percentage of women directors than men directors are African-American and approximately 14% of women directors are women of color.

The business case for inclusion of women on boards suggests that women directors will increase profitability and shareholder returns. Our analysis of the conceptual propositions of the business case suggests that there are several logical reasons to expect a positive link between women on the board and higher profits and shareholder returns. At the same time, logical arguments exist that predict no relationship between women directors and financial performance or a negative relationship. Finally, a contingency viewpoint offers the possibility that the underlying unique circumstances of each case will determine if the relationship between women directors and financial performance will be positive or negative.

The relevant empirical evidence on the business case for women directors is mixed because of the nature of the economic factors underlying board selection and board actions and methodological problems. Major statistical problems are caused by the joint-endogeneity of board composition, board selection, board process, and financial performance. The results of econometric tests of the business case for women directors are not robust to the methods employed. We are somewhat agnostic in our view of the evidence but a finding of no relationship is consistent with a contingency view. If exogenous factors are heterogeneous and in some cases women directors are beneficial and in other cases women directors are detrimental, then over many firms and several years the pluses and minuses may cancel out and the investigator will not find any significant empirical relationship (Carter et al. 2010). The evidence of Adams and Ferreira (2009) is also consistent with a contingency view. The complexity of the research problem causes us to be suspicious of any strong statements based on empirical evidence, either for or against the business case for women on boards. Our interpretation of the evidence on the business case for women on boards leads us to conclude that quotas for women directors mandated in some other countries are not desirable. Nevertheless, the lack of consistent evidence in support of the business case for women on boards does not negate the equity case. Women deserve a fair chance to serve as corporate directors based on their competence and qualifications.■

References

Adams, R.B. and D. Ferreira, 2007, "A Theory of Friendly Boards," *Journal of Finance* 62 (No. 1), 217-250.

Adams, R.B. and D. Ferreira, 2009, "Women in the Boardroom and Their Impact on Governance and Performance," *Journal of Financial Economics* 94 (No. 2), 291-309.

Adams, R. B., B. E. Hermalin, and M. S. Weisbach, 2010, "The Role of Boards of Directors in Corporate Governance: A Conceptual Framework and Survey," *Journal of Economic Literature* 48 (No.1), 59-108.

Agrawal, A. and C.R. Knoeber, 2001, "Do Some Outside Directors Play a Political Role?" *Journal of Law and Economics* 44 (No. 1), 179-199.

Becker, G., 1964, *Human Capital*, Chicago, IL, University of Chicago.

Booth, J.R. and D.N. Deli, 1999, "On Executives of Financial Institutions as Outside Directors," *Journal of Corporate Finance* 5 (No. 3), 227-250.

Carter, D.A., B.J. Simkins, and W.G. Simpson, 2003, "Corporate Governance, Board Diversity, and Firm Value," *The Financial Review* 38 (No. 1), 33-53.

Carter, D.A., F. D'Souza, B.J. Simkins, and W.G. Simpson, 2010, "The Gender and Ethnic Diversity of US Boards and Board Committees and Firm Financial Performance," *Corporate Governance: An International Review*, forthcoming.

Catalyst, 2007, *2007 Catalyst Census of Women Board Directors of the Fortune 500*, New York, NY, Catalyst.

Catalyst, 2009, *2009 Catalyst Census: Fortune 500 Women Board Directors*, New York, NY., Catalyst.

Catalyst, 2010, *US Women in Business*, New York, NY, Catalyst.

Erkut, S., W.W. Kramer, and A.M. Konrad, 2008, "Critical Mass: Does the Number of Women On a Corporate Board Make a Difference?" in Vinnicombe, S., V. Singh, R. J. Burke, D. Bilimoria, and M. Huse Editors, *Women on Corporate Boards of Directors: International Research and Practice*, Cheltenham, Glos, UK, Edward Elgar Publishing Limited.

Fama, E.F. and M.C. Jensen, 1983, "Separation of Ownership and Control," *Journal of Law and Economics* 26 (No. 1), 301-324.

Farrell, K.A. and P.L. Hersch, 2005, "Additions to Corporate Boards: The Effect of Gender," *Journal of Corporate Finance* 11 (No. 1-2), 85-106.

Fiedler, F.E., 1967, *A Theory of Leadership Effectiveness*, New York, NY, McGraw-Hill.

Hermalin, B.E. and M.S. Weisbach, 1998, "Endogenously Chosen Boards of Directors and Their Monitoring of the CEO," *American Economic Review* 88 (No. 1), 96-118.

Hermalin, B.E. and M.S. Weisbach, 2003, "Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature" *Federal Reserve Bank of New York Economic Policy Review* 9 (No. 1), 7-26.

Hoel, M., 2008, "The Quota Story: Fives years of Change in Norway," in Vinnicombe, S., V. Singh, R. J. Burke, D. Bilimoria, and M. Huse Editors, *Women on Corporate Boards of Directors: International Research and Practice*, Cheltenham, Glos, UK, Edward Elgar Publishing Limited.

Jensen, M.C., 1993, "The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems," *Journal of Finance* 48 (No. 3), 831-880.

Jensen, M.C. and W. Meckling, 1976, "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure," *Journal of Financial Economics* 3 (No. 4), 305-360.

Kanter, R, 1977, *Men and Women of the Corporation*, New York, NY, Basic Books.

Lawrence, P. and J. Lorsch, 1967, *Organization and Environment*, Boston, MA, Harvard University Press.

Lau, D.C. and J.K. Murnigham, 1998, "Demographic Diversity and Faultlines: The Compositional Dynamics of Organizational Groups," *Academy of Management Review* 23 (No. 2), 325-340.

McInerney-Lacombe, N., D. Bilimoria, and P.F. Salipante, 2008, "Championing the Discussion of Tough Issues: How Women Corporate Directors Contribute to Board Deliberations," in Vinnicombe, S., V. Singh, R.J. Burke, D. Bilimoria, and M. Huse Editors, *Women on Corporate Boards of Directors: International Research and Practice*, Cheltenham, Glos, UK, Edward Elgar Publishing Limited.

Monks, R.A.G. and N. Minow, 2008, *Corporate Governance*, Chichester, West Sussex, UK, John Wiley & Sons Ltd.

Nielsen, S. and M. Huse, 2010, "The Contribution of Women on Boards of Directors: Going Beyond the Surface," *Corporate Governance: An International Review* 18 (No. 2), 136-148.

Pfeffer, J. and G.R. Salancik, 1978, *The External Control of Organizations: A Resource Dependence Perspective*, New York, NY, Harper & Row.

"Skirting the Issue," *The Economist*, March 13, 2010, 71.

Terjesen, S., V. Singh, and S. Vinnicombe, 2008, "Do Women Still Lack the 'Right' Kind of Human Capital for Directorships on the FTSE 100 Corporate Boards?" in Vinnicombe, S., V. Singh, R.J. Burke, D. Bilimoria, and M. Huse Editors, *Women on Corporate Boards of Directors: International Research and Practice*, Cheltenham, Glos, UK, Edward Elgar Publishing Limited.

Terjesen, S., R. Sealy, and V. Singh, 2009, "Women Directors on Corporate Boards: A Review and Research Agenda," *Corporate Governance: An International Review* 17 (No. 3), 320-337.

Vinnicombe, S., V. Singh, R.J. Burke, D. Bilimoria, and M. Huse Editors, 2008, *Women on Corporate Boards of Directors: International Research and Practice*, Cheltenham, Glos, UK, Edward Elgar Publishing Limited.

Westphal, J.D. and L.P. Milton, 2000, "How Experience and Network Ties Affect the Influence of Demographic Minorities on Corporate Boards," *Administrative Science Quarterly* 45 (No. 2), 366-398.