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Wall Street Reaction to Women in IPOs

An Examination of Gender Diversity in Top Management Teams

Theresa M. Welbourne
University of Michigan

Cynthia S. Cycyota
Claudia J. Ferrante
U.S. Air Force Academy

The authors examine the effect of having women on the top management teams of initial public offering (IPO) firms on the organizations' short- and long-term financial performance. Looking at three different samples, the authors found that trend data indicated IPO firms were gaining in the number of women they employ in their top management teams. Using data from 534 IPO firms, results suggest one reason why the trend is growing; women appear to have a positive association with the firms' short-term performance (Tobin's Q, which is market price to book value per share), 3-year stock price growth, and growth in earnings per share. Possible reasons for the positive effect of women on performance include better innovation and problem-solving processes in more diverse top management teams and the possibility that, on average, the women on these teams are higher performers than are the men on the same teams.

Keywords: *IPOs; diversity; TMT; market signaling*

Pick up any newspaper or popular press magazine and you are bound to find an article or two (or more) about women in management. *Fortune*, for example, publishes an annual listing of the 50 most powerful women

Authors' Note: The views expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the Air Force, the Department of Defense, or the U.S. government. Correspondence concerning this article should be addressed to Theresa M. Welbourne, University of Michigan, 905 W. Eisenhower Circle, Suite 110, Ann Arbor, MI 48103; e-mail: twelbour@umich.edu.

(Harrington & Stanley, 2003). *Business Week*, *Forbes*, and *Fortune* frequently publish profiles of women executives leading *Fortune* 500 firms (Brady, 2005; MacDonald & Schoenberger, 2005; Mero, Bennet, et al., 2005). These articles tend to feature successful women, tell their stories, and then leave the reader with some type of lessons learned or inspirational words for would-be women executives. Although these types of stories are popular, they say little about the real effect of women in top management on the performance of their organizations. Much of the research that has been done relating firm performance to the presence of women comes from the entrepreneurship field and seems to be focused on women as business owners rather than women as part of the overall executive team (e.g., Brush, 1992; Chaganti & Parasuraman, 1996; Hopkins & Bilimoria, 2004) or considers all women managers without regard to their strategic positions as members of the top management team (TMT).

To date, the question of how women in the TMTs of corporations affect the performance of those organizations has found limited study. Some researchers indicate that women in the upper echelons of the firm have a positive effect on firm performance (Cordeiro & Stites-Doe, 1997; Ely, 1994; Feeney, 2004), whereas others do not find significant results (Korac-Kakabadse, Korac-Kakabadse, & Myers, 1998). In addition, these studies include women managers but do not directly address inclusion of women in the TMT. And equally unknown is the effect that women in top management have on Wall Street's perception of those firms as investment opportunities in the critical stage of initial public offering (IPO). One study of female-led IPO firms did not find underpricing of IPOs in comparison to male-led firms (Mohan, 2004), but this study only included firms with women CEOs and did not consider the entire management team. Thus, the purpose of this article is to report the results of a study that begins to fill a gap in our knowledge of diversity effects on firm performance. The study empirically links the percentage of women in the TMT to firm performance within a sample of IPO firms. Although empirical research lacks the richness and detail of a good story (Eisenhardt, 1989), studies that profile successful women begin to show how women may be perceived by the investment community. Although the business case for diversity (Robinson & Dechant, 1997) appears to be rational, it is important that we obtain empirical evidence at all levels of the organization. Thus, using a longitudinal methodology, our research examines the relationship between having women in the TMT and a firm's longer term performance. The relationship of women on the TMT with initial stock performance is, of course, interesting from a financial perspective as organizations want a higher stock price when they go public. In addition, from a social

perspective, it recognizes the importance of organizational demography or the composition of an organization in terms of member attributes (Pfeffer, 1983, p. 303) in both the short-term IPO pricing and in longer-term firm performance. We first explore literature on upper echelons research and signaling theory as a basis for our study. We then present the methodology and results of the study, concluding with discussion and implications for future research.

TMT Research

Organizational scholars long have been interested in factors that contribute to outstanding firm performance. Hambrick and Mason (1984) introduced the “upper echelons” perspective in 1984, arguing that executives make choices based on their experiences, values, and training. Following Pfeffer’s (1983) suggestion that demographic characteristics—objective, accessible, and easily measured—can represent executives’ differences along important psychological constructs, Hambrick and Mason advocated viewing top managers as a team (i.e., the TMT) and examining team issues via demographic indicators. Researchers using this approach have found positive relationships between executive or TMT demographic indicators and firm outcomes, including firm performance (e.g., Bantel & Jackson, 1989; Eisenhardt & Schoonhoven, 1990; Finkelstein & Hambrick, 1990; Keck, 1997; Michel & Hambrick, 1992; Murray, 1989; Norburn, 1986; Norburn & Birley, 1988; Wiersema & Bantel, 1992). These studies show quite clearly that top managers do indeed matter to firm outcomes (Child, 1972; Hambrick & Mason, 1984). The assumption underlying demographic theory is that demographic characteristics influence social dynamics of the firm, which influence organizational outcomes (Pfeffer, 1983; Stinchcombe, 1965). The demographic indicators studied in relation to positive firm performance have included firm tenure (Finkelstein & Hambrick, 1990; Keck, 1997), team diversity (Hambrick, Cho, & Chen, 1996; Richard, 2000), and team size (Eisenhardt & Schoonhoven, 1990). The majority of this work was done with established public companies and did not include the particular nuances important in the examination of younger firms without well-established traditions such as those included in entrepreneurial research.

Entrepreneurship researchers have found that although the “myth of the entrepreneurial hero” (Reich, 1987, p. 82) has its attraction, a truer picture of new firm operations is the entrepreneurial team (Francis & Sandberg, 2000; Kamm, Shuman, Seeger, & Nurick, 1990). The myth of the entrepreneurial

hero refers to an individual with a single good idea willing to risk fame and fortune to achieve success. However, in reality, the innovation or idea in development likely was purchased from someone else and is now the responsibility of the entrepreneurial team to take the innovation to market (Roberts, 1999). The characteristics of TMTs in entrepreneurial firms that distinguish strong from weak firms include longer industry experience for team members and presence of the founder as a working member of the team (Virany & Tushman, 1986). However, the effects of gender in these analyses have not been examined. Our study is an attempt to explore the issue of gender composition of the TMT members and its relationship to performance of the firm in its pivotal IPO stage.

Women as leaders and managers is not a new topic. A number of studies have examined women in leadership roles and found an overall increase in the number of women (Eagly & Carli, 2003) and an advantage to more feminine affiliative leadership styles (Adler, 2002; Fisher & Nelson, 1996). In a meta-analysis of 136 on studies women in leadership, Eagly, Johannesen-Schmidt, and Van Engen (2003) found that women use more transformational leadership styles and more contingent reward behaviors, which resulted in greater organizational effectiveness. Cordeiro and Stites-Doe (1997) found that the percentage of women managers in a firm is positively related to firm performance. However, these studies have not measured the effect that having women in the upper echelons of the organization has on firm initial market perceptions (IPO pricing) or longer-term firm performance. That is to say, does the percentage of women on the TMT send a specific signal to the market about the performance potential of the firm?

Market Signaling

When a company goes public, its initial stock price is set based on a number of things, including some that may have nothing to do with its current financial performance. For example, IPOs with prestigious board members have higher initial stock prices (Certo, Daily, & Dalton, 2001). These nonfinancial signals are additional means to communicate overall value of the firm to potential initial investors. Signaling relates to the process used by decision makers in situations of information asymmetry to make judgments based on observable characteristics (Spence, 1973). Information asymmetry occurs because the managers and owners of the firm have access to information about the firm and its potential for future performance unavailable to outsiders. Firms in the IPO stage are often unknown to the investing

community and have limited histories for potential investors to analyze and review. This creates a general uncertainty about the firm to the market, which must be overcome for the firm to achieve its goal of raising the highest amount of capital in the open market.

A primary means to relieve the uncertainty and liability of newness (Certo, 2003; Stinchcombe, 1965) is to establish legitimacy, social acceptance, and desirability (D'Aveni, 1990; Higgins & Gulati, 2003; Zimmerman & Zeitz, 2002). One way to acquire this legitimacy is through social capital and ties to highly regarded individuals and institutions. Prior researchers have found various ways that IPO firms have communicated to the markets in IPOs that they have value and legitimacy. These signals related to higher initial stock prices include board member reputation and larger board size (Certo et al., 2001), prestigious auditor selection (Michaely & Shaw, 1995), prestigious underwriters (R. B. Carter, Dark, & Singh, 1998; R. B. Carter & Manaster, 1990), and venture capitalist certification (Megginson & Weiss, 1991). These signals or perceptions of positive organizational characteristics communicate to investors that the organization has the potential to access key resources critical to organizational success and enhance future strategic decisions made in the organization (Zimmerman & Zeitz, 2002).

Another signal of organizational value is the diversity of the organization. Researchers have suggested that diversity in organizational team members can increase cost savings from lower turnover and absenteeism (Eisenberger, Fasolo, & Davis-LaMastro, 1990), attract top talent to the organization (Hitt & Barr, 1989), and drive organizational growth through innovation (Bantel & Jackson, 1989; Eisenhardt & Tabrizi, 1995), enhanced leadership effectiveness (Eisenhardt & Schoonhoven, 1990), and market understanding (Jackson, May, & Whitney, 1995). Roberson, Kulik, and Pepper (2003) suggest that many organizational leaders are attempting to tap these benefits by providing diversity training in their organizations. In addition, diversity has symbolic value for the organization and may be a signal to the market of positive organizational practices. Diversity on the TMT indicates that personnel decisions are based on merit rather than homogenous characteristics (Ibarra, 1995). It also indicates that the TMT has larger, more diverse social networks, which can aid firm performance because of the benefits of embeddedness for linking firms to needed resources in the environment (Uzzi, 1996). Therefore, we suggest that:

Hypothesis 1: The percentage of women on the TMT of IPO firms will be positively related to initial pricing for the IPO.

The percentage of women in TMTs has also been associated with higher firm performance (Richard, Barnett, Dwyer, & Chadwick, 2004). Other studies suggest that the presence of women on the TMT has a positive effect on decision making (N. Carter, Williams, & Reynolds, 1997). Wright, Ferris, Hiller, and Kroll (1995) found that firms with exemplary diversity practices have higher stock price performance, and Frink and colleagues (2003) found that gender diversity contributed to higher market performance. A Catalyst (2004) study in 2004 found “companies with the highest representation of women on their top management teams experienced 35% higher return on equity and 34% higher total return to shareholders than companies with the lowest women’s representation” (p. 12). However, in a large-scale field study specifically designed to determine the effects of diversity on business performance, Kochan and his team of researchers (2003) found few positive or negative direct effects of race or gender diversity. Other researchers also found negative or no effect of diversity on group performance (Webber & Donahue, 2001; Williams & O’Reilly, 1998). Thus, there are conflicting views on the issue of women in management and their effect on firm performance.

We were interested in trying to assess how Wall Street and/or the investment banking community evaluated women as members of an IPO firm’s TMT in the longer term. Even though prior research is mixed, in the unique case of the IPO where the organization is still in early stages of development, the benefits of women in a diverse TMT include the ability to appeal to broader markets and make more innovative business decisions. We believe that this business case for diversity (Robinson & Dechant, 1997) suggests a positive relationship between the presence of women on the TMT and organizational performance. Therefore, we suggest that:

Hypothesis 2: The percentage of women on the TMT of IPO firms will be positively related to long-term firm performance.

The research presented in this article examines the effect of having women on the TMT (measured as the percentage of women in the top team) on both short-term (IPO pricing) and longer-term firm performance (3 years or more). The effects on short-term performance should be an indicator of how investors evaluate the percentage of women on TMTs, and the effects on long-term performance demonstrate whether investors are making informed decisions (e.g., whether the assessments at Time 1, when the firm goes public, are accurate in the long run). The long-term results show the relationship between the percentage of women on the top team

and both stock price growth and growth in earnings per share during a 3-year period (from the IPO in 1993 to year-end 1996).

Method

Background

As part of a large-scale study of large cohorts of IPOs from 1988 to 2002, the research team found an interesting pattern. In 1988, only 4% of the TMT members were women. However, in 1993, we found that 27% of the firms in the sample (534 companies) had women in their TMTs. And in a later study (Vogus & Welbourne, 2003), researchers showed that 41% of the companies that went public in 1996 had women in the top management ranks. This trend, not examined to date according to our review of the management literature, was the basis of our intellectual curiosity on this topic. But beyond the trend data, we were interested in understanding the effects of this gender diversity on firm performance. To more adequately examine the possible causal argument, we focused not on the trend data but on understanding one given year or cohort of IPO firms.

Thus, the research strategy used for this work involved selecting a specific cohort of IPO firms that went public in 1993. We studied the performance of those firms over time to examine the effects of their early decisions regarding management structure on their subsequent firm performance. For the analysis relating the percentage of women with firm performance, using the 1993 sample allowed us to study both short-term IPO performance and long-term firm performance (e.g., performance from 1993 to year-end 1996). The number of firms that went public in 1993 and that produced a good or service (real estate trusts and financial groups with no employees were included) was 593; of those companies, we were able to obtain the prospectuses (which are one of our primary data sources) for 534 firms.

As of December 1996, 59 firms had changed form so that the financial data needed were no longer available, thus reducing our sample. Of the 59 firms that no longer reported stock price (or earnings), 50 had engaged in a merger or acquisition, 2 filed for bankruptcy, and 1 went private, and there was no information available for 6 firms. To examine potential survival bias (the firms that dropped out were in some way inferior performers), we conducted an ANOVA to determine how those firms for which we did not have complete data (the 59 that dropped out of the sample) differed from the overall sample.

We found that there were no significant differences in any of the variables used in the analyses for this research (e.g., percentage of women on the TMT, risk factors at time of IPO, age of firm, size measured by sales and number of employees, and net profitability; results available on request). The lack of significant differences could be because of the fact that mergers may be conducted for healthy and financially troubled firms, and most of the firms for which we could no longer find data had engaged in a merger or acquisition.

Data Collection and Coding

The primary data source was the prospectus of each firm. The prospectus is the document provided to the Securities and Exchange Commission (SEC) prior to the public offering, and it is also the document circulated by the underwriter to assess demand for the firm's stock. The SEC requires that firms follow strict guidelines in the format. In fact, the firm is legally liable for any information that might mislead investors (O'Flaherty, 1984). As noted by Beatty and Zajac (1994), top management is accountable to the SEC and to stockholders regarding the contents of the prospectus. The Securities Act of 1933 set the requirements for the prospectus, thus assuring consistency in the type of information that is included in the document. The typical prospectus-writing process involves at least three lawyers (one for the company and one for each of the investment bankers), two investment banking firms, and at least one certified public accountant. Each party has a vested interest in providing the public with an honest view of the company. Thus, we can be reasonably assured that the prospectus is a useful data source (Higgins & Gulati, 2003; Marino, Castaldi, & Dollinger, 1989; Sanders & Boivie, 2004).

The coding strategy was developed and refined based on earlier research on IPO firms (see method used by Welbourne & Andrews, 1996). Code sheets and a coding handbook were given to each coder after each individual attended an initial training session. A total of 5 coders worked on the data. In addition, weekly meetings were held with coders to go over problems and/or inconsistencies in the prospectuses. Finally, we randomly cross-coded prospectuses (every 10th prospectus). For the variables used in this study, agreement was 90% or higher among the coders (suggested as acceptable by Zegers, 1991). Financial data were also obtained from COMPUSTAT, Going Public: The IPO Reporter (for financial data at the time of the IPO) and from a database obtained from the Securities Data Corporation.

Sample Characteristics

At the time of its IPO, the average firm in the sample was 7.06 years old ($SD = 7.07$). The median firm, however, was 6 years old, and the range was

from 1 to 47 years old, with most of the firms (80%) being less than 10 years old. Given that the age data were skewed, the variable used in the analysis was logged. The average firm in the sample employed 951 people ($SD = 2,998$). On average, net profit per share was \$0.18 ($SD = \0.60), and the adjusted initial offering price per share was \$10.36 ($SD = \6.73). Using the classification scheme reported by the Small Business Administration to determine industry, the sample's highest concentration of firms was in manufacturing (47.9%). A total of 18.5% of the firms were in service industries, whereas 5.2% were in wholesale trade, 8.4% in transportation and/or communications, and 8.6% in retail trade. Other industries included 0.2% in agriculture, 3.0% in mining, 1.7% in construction, and 3.9% in finance, investing, and real estate services.

Independent Variables

The number of women on the TMT was coded by reading through the management section of the prospectus. Companies are required by the SEC to list the names (in addition to other data such as compensation and ownership) of members of the top executive team and members of the board. The TMT includes at a minimum the CEO, CFO, other officers with financial reporting responsibility, and "significant others" responsible for primary firm functions such as manufacturing or sales. Thus, the management members reported in the prospectus are reasonably assumed to be the primary decision makers in the firm, although the specific number of officers reported varied by firm (which is why we chose to use the percentage of women in the TMT rather than a total number of women). In addition, because our focus was on primary decision makers, we chose not to measure the percentage of women on the board. Although board membership is important, the position is designed to advise and approve decisions, not make them. Thus, the perceived influence on performance is less apparent. The reliance on data in the prospectus is well documented (Higgins, & Gulati, 2003; Sanders & Boivie, 2004). The name of the executive was examined to indicate whether the individual was male or female; when in doubt (because of a name that could be either male or female), coders read the description of the manager's duties and searched for a reference to *him* or *her* or *he* or *she*. The percentage was calculated by taking the number of women as a percentage of the number of people in the total management team (as reported in the firm's prospectus). Only full-time executives were included; members of the board who were not employees were not included in the total count. The average percentage of women in the TMT is 6%, with

a standard deviation of 13% (the maximum is 86%). In 1993, 1% of the firms reported more than 50% of the team having women, 9% reported between 20% and 50%, 17% reported between 8% and 20% women on the TMT, and 73% of the sample reported no women on the TMT.

Dependent Variables

Initial pricing for the IPO. Short-term performance was measured as Tobin's Q, which is market price divided by book value per share (book value is the stated value of all firm assets). Tobin's Q is preferred to absolute stock price because it reflects the market's reaction to the firm. The mean Tobin's Q is 3.40, with a standard deviation of 29.73. The natural log of the value was used for the data analyses ($M = 0.66$, $SD = 0.24$). Tobin's Q reflects the investment community's expectations about the potential of the organization.

Stock price in 1996. Given that the primary reason investors choose to put money into an IPO is to make money when the firm's stock price increases over time, we examined measures related to stock price growth. After controlling for initial stock price (adjusted for splits), the analysis that predicted 1996 performance reflects the increase in value of the firm in the first 3 years following the IPO.

Earnings per share in 1996. To supplement our study, we added year-end 1996 earnings per share as a dependent variable. Earnings per share, the net income of the company divided by the number of shares, is a measure of internal performance that is often used by analysts and investors to assess future value of the firm. In the analyses, we included net profit per share at the time of the IPO as a control variable. By conducting the analyses in this way, we eliminated measurement issues surrounding the use of change scores.

Control Variables

Several additional control variables, selected based on a review of the IPO literature, were used in the analyses. In addition, we included a code for whether the firm was unionized or not (0 = not unionized, 1 = unionized). Union presence is an important control because a union presence may affect hiring practices within the firm. In addition, we included the percentage of the company owned by the CEO prior to the IPO as a control variable. This was done because a CEO with high ownership may be able to exert more pressure in the hiring process (particularly of the TMT). Ten industry classifications, based on categories reported by the Small Business Administration, were used

for the analyses. The 10 categories that were coded as dummy variables (0 = no, 1 = yes) were (a) agriculture, (b) mining, (c) construction, (d) transportation, (e) wholesale trade, (f) retail trade, (f) finance, investing, and real estate, (g) services, (h) high technology, and (i) manufacturing (the reference category in the analyses).

Although the sample of IPO firms consisted of companies that are considered to be higher risk investments than companies currently in the public market (because of their having no prior stock price history), we expected that each firm would be subject to varying degrees of risk. Therefore, an additional control variable indicated the level of risk faced by each firm. Each prospectus contains a section listing all risk factors faced by the firm. These risk factors must be disclosed to meet the requirements of the SEC. The total number of paragraphs in the risk section of the prospectus was coded as a measure of firm-level risk. Prior research on IPO firms found that this measure was a useful way to code risk (Beatty & Zajac, 1994; Rasheed & Datta, 1997).

Lastly, we included a series of dummy variables for geographic region. Because of the number of high tech firms concentrated in given geographic areas and the fact that firms in close proximity may share management practices, this control variable was added. The 10 categories (0 = no, 1 = yes) were: (a) northeast, (b) middle Atlantic, (c) east north central, (d) west north central, (e) south Atlantic, (f) east south central, (g) west south central, (h) mountain, (i) Pacific, and (j) foreign country (the reference category in the analyses).

Results

The means, standard deviations, and correlations of the variables used in the analyses are found in Table 1. The percentage of women on the TMT is significantly correlated with initial valuation of the firm as indicated by Tobin's Q ($r = .13, p < .01$) at the time of the IPO but is not correlated with stock price or earnings per share in 1996.

Hypotheses 1 and 2 were tested using hierarchical linear regression analysis. Hypothesis 1 predicted that the percentage of women on the TMT would positively affect the firm's initial pricing for the IPO. The results are reported in Table 2. Only the control variables were included in Step 1 of the regression equation to predict initial pricing for the IPO. The firm's number of employees ($\beta = -.25, p < .001$), CEO ownership ($\beta = -.08, p < .10$), presence in the mining ($\beta = -.12, p < .05$) or high technology ($\beta = -.09, p < .10$) industries, and location in the middle Atlantic ($\beta = -.09, p < .10$) or west

Table 1
Means, Standard Deviations, and Correlations

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Age of firm (at IPO; log)	15.94	18.05										
2. Number of employees	951.14	2,998.35	.10*									
3. Net income per share (at IPO)	0.18	0.60	.18***	.09*								
4. Union presence ^a	0.20	0.40	.27***	.25***	.20***							
5. CEO ownership percentage (at IPO)	25.89	27.94	-.01	-.02	.09	-.08						
6. Risk (number of paragraphs)	15.93	5.01	-.22***	-.19***	-.40***	-.25***	.08					
7. Adjusted stock price (at IPO)	10.36	6.73	.10*	.16***	.20***	.24***	-.12**	-.28***				
8. Percentage of women (on TMT)	0.06	0.13	-.05	-.04	.04	-.11*	.10*	.05	-.02			
9. Tobin's Q (log)	0.66	0.24	.00	-.21***	-.10*	-.01	-.08	.08	-.02	.13**		
10. 1996 stock price	12.04	10.70	.12**	.21***	.26***	.22***	-.13**	-.37***	.13**	-.04	-.03	
11. 1996 earnings per share	-0.07	1.56	.20***	.15**	.31***	.21***	-.03	-.28***	-.08	.01	-.04	.35***

Note: *N* = 534. IPO = initial public offering; TMT = top management team.

a. 0 = not mentioned, 1 = mentioned.

p* < .05, two-tailed. *p* < .01, two-tailed. ****p* < .001, two-tailed.

Table 2
Hierarchical Regression Analysis for Variables Predicting Initial Pricing for the IPO (Tobin's Q)

Variables	β^a	β^a	R^2	ΔR^2
Step 1			.14****	
Age of firm (at IPO; log)	.03	.03		
Number of employees	-.25****	-.24****		
Net income per share (at IPO)	-.03	-.05		
Union presence	.04	.05		
CEO ownership percentage (at IPO)	-.08*	-.09**		
Risk (number of paragraphs)	.03	.02		
Adjusted stock price (at IPO)	.04	.02		
Industry—agriculture	.00	.00		
Industry—mining	-.12**	-.12**		
Industry—construction	-.05	-.05		
Industry—manufacturing	-.02	-.04		
Industry—wholesale trade	-.05	-.05		
Industry—retail trade	.00	-.02		
Industry—finance, investing, and real estate	-.11	-.12*		
Industry—services	.17**	.15**		
Industry—high technology	-.09*	-.09*		
Geographic region—northeast	.00	.00		
Geographic region—middle Atlantic	-.09*	-.10*		
Geographic region—east north central	-.05	-.04		
Geographic region—west north central	-.06	-.05		
Geographic region—south Atlantic	-.07	-.07		
Geographic region—east south central	-.02	-.02		
Geographic region—west south central	-.10*	-.10*		
Geographic region—mountain	.07	.08		
Geographic region—Pacific	-.08	-.09		
Step 2			.16****	.02***
Percentage of women (on TMT)		.12***		

Note: $N = 534$. IPO = initial public offering; TMT = top management team.

a. Standardized beta coefficients.

* $p < .10$. ** $p < .05$ *** $p < .01$. **** $p < .001$.

south central ($\beta = -.10$, $p < .10$) geographic regions were negatively related to Tobin's Q. Only a presence in the services industry ($\beta = .17$, $p < .05$) enhanced Tobin's Q. The overall R^2 at Step 1 was .14 ($p < .001$).

In Step 2, the percentage of women on the TMT was added to the equation. The percentage of women on the TMT was positively and significantly related to initial pricing for the IPO ($\beta = .12$, $p < .01$). Thus, Hypothesis 1

Table 3
Hierarchical Regression Analysis for Variables
Predicting Long-Term Performance (Stock Price)

Variables	β^a	β^a	R^2	ΔR^2
Step 1			.43****	
Age of firm (at IPO; log)	-.05	-.05		
Number of employees	.18****	.18****		
Net income per share (at IPO)	.03	.02		
Union presence	.12***	.12***		
CEO ownership percentage (at IPO)	-.12***	-.13***		
Risk (number of paragraphs)	-.42****	-.43****		
Adjusted stock price (at IPO)	-.39****	-.40****		
Industry—agriculture	-.01	-.01		
Industry—mining	.07	.07		
Industry—construction	-.09**	-.09**		
Industry—manufacturing	-.18***	-.19***		
Industry—wholesale trade	-.10**	-.10**		
Industry—retail trade	-.23****	-.24****		
Industry—finance, investing, and real estate	.18***	.18***		
Industry—services	-.17***	-.18***		
Industry—high technology	.07	.07*		
Geographic region—northeast	-.11***	-.11***		
Geographic region—middle Atlantic	-.12***	-.12***		
Geographic region—east north central	-.05	-.05		
Geographic region—west north central	-.09**	-.08*		
Geographic region—south Atlantic	-.14***	-.14***		
Geographic region—east south central	-.05	-.05		
Geographic region—west south central	-.08	-.08		
Geographic region—mountain	-.05	-.04		
Geographic region—Pacific	-.12**	-.12**		
Step 2			.44****	.01*
Percentage of women (on TMT)		.07*		

Note: $N = 534$. IPO = initial public offering; TMT = top management team.

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

a. Standardized beta coefficients.

is supported. Results for the control variables were similar to those found in Step 1. The overall R^2 at Step 2 was .16 ($p < .001$), and the change in R^2 was .02 ($p < .01$).

Hypothesis 2 predicted that the percentage of women on the TMT of IPO firms would positively affect long-term firm performance. Tables 3 and 4 show the results for stock price and earnings per share, respectively. Although marginally significant, the percentage of women on the TMT was positively

Table 4
Hierarchical Regression Analysis for Variables
Predicting Long-Term Performance (Earnings per Share)

Variables	β^a	β^a	R^2	ΔR^2
Step 1			.37****	
Age of firm (at IPO; log)	.05	.05		
Number of employees	.12***	.12***		
Net income per share (at IPO)	-.01	-.01		
Union presence	.17***	.17****		
CEO ownership percentage (at IPO)	-.03	-.03		
Risk (number of paragraphs)	-.34****	-.35****		
Adjusted stock price (at IPO)	-.44****	-.45****		
Industry—agriculture	-.02	-.02		
Industry—mining	.13***	.13***		
Industry—construction	.07*	-.07		
Industry—manufacturing	.17**	.16**		
Industry—wholesale trade	.02	.02		
Industry—retail trade	.03	.02		
Industry—finance, investing, and real estate	.43****	.43****		
Industry—services	.06	.05		
Industry—high technology	.02	.02		
Geographic region—northeast	-.09**	-.09**		
Geographic region—middle Atlantic	-.10**	-.10**		
Geographic region—east north central	-.07	-.07		
Geographic region—west north central	-.03	-.03		
Geographic region—south Atlantic	-.18****	-.19****		
Geographic region—east south central	-.01	-.01		
Geographic region—west south central	-.06	-.06		
Geographic region—mountain	-.03	-.03		
Geographic region—Pacific	-.07	-.07		
Step 2			.38****	.01*
Percentage of women (on TMT)		.07*		

Note: $N = 534$. IPO = initial public offering; TMT = top management team.

* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

a. Standardized beta coefficients.

related to both stock price ($\beta = .07$, $p < .10$; see Table 3) and earnings per share ($\beta = .07$, $p < .10$; see Table 4). Thus, Hypothesis 2 is also supported.

A firm's stock price was also positively associated with the number of employees ($\beta = .18$, $p < .001$), union presence ($\beta = .12$, $p < .01$), and presence in the finance, investing, and real estate ($\beta = .18$, $p < .01$) or high technology industries ($\beta = .07$, $p < .10$), CEO ownership ($\beta = -.13$, $p < .01$), risk

($\beta = -.43, p < .001$), adjusted stock price at IPO ($\beta = .40, p < .001$), presence in the construction ($\beta = -.09, p < .05$), manufacturing ($\beta = -.19, p < .01$), wholesale trade ($\beta = -.10, p < .05$), retail trade ($\beta = -.24, p < .001$), or services ($\beta = -.18, p < .01$) industries, and location in the northeast ($\beta = -.11, p < .01$), middle Atlantic ($\beta = -.12, p < .01$), west north central ($\beta = -.08, p < .10$), south Atlantic ($\beta = -.14, p < .01$), or Pacific ($\beta = -.12, p < .05$) geographic region. The overall R^2 at Step 2 in the stock price equation was .44 ($p < .001$), and the change in R^2 was .01 ($p < .10$).

Earnings per share was enhanced by the number of employees ($\beta = .12, p < .01$), union presence ($\beta = .17, p < .001$), and presence in the mining ($\beta = .13, p < .01$), manufacturing ($\beta = .16, p < .05$) or finance, investing, and real estate ($\beta = .43, p < .001$) industries. Risk ($\beta = -.35, p < .001$), adjusted stock price at IPO ($\beta = -.45, p < .001$), and location in the northeast ($\beta = -.09, p < .05$), middle Atlantic ($\beta = -.10, p < .05$), or south Atlantic ($\beta = -.19, p < .001$) geographic region negatively affected earnings per share. The overall R^2 at Step 2 in the earnings per share equation was .38 ($p < .001$), and the change in R^2 was .01 ($p < .10$).

Discussion

The strongest results (in terms of statistical significance) were obtained for the effect of the percentage of women on the TMT on Tobin's Q for initial pricing of the IPO (results for longer-term performance, although positive, showed only a nonsignificant tendency and so were a bit weaker). Given the lack of women in earlier IPO samples (e.g., 1988) that we studied, the positive reaction by Wall Street and the investment community to women on the management teams is somewhat surprising. To further explore the findings, we looked at the types of firms that had a higher percentage of women. We were interested to learn if there may be something about the firms that employ women (they may be in "women friendly" businesses that happened to be hot in 1993) that would explain the findings but that were not included in the analysis.

We examined data for those firms that employed 20% or more women in their TMTs. Of the 73 firms that were listed, only 4 were in what may be considered female-related businesses: A Pea in the Pod, Mothers Work, Cygne Designs, Inc., and Chiro's (all sold womens clothing, although Chiro's sells both mens and womens clothing). In addition, there was one business that catered to children (Gymboree, which sells childrens clothing). The other

firms were in multiple industries, including telecommunications, financing services, publishing, specialty teas, software, manufacturing, hotels and casinos, water treatment services, fast food restaurants, banking, and so on. There was no discernable pattern in terms of type of business or industry.

Do Women in Management Signal Something?

But the question remains: Do investors notice women on the TMT and then take those data into consideration when deciding whether or not to buy a company's stock? Given that the topic of women in executive management has been so popular, not only within the academic realm but in the popular press, it is quite possible that investors perceive having women in top management as a benefit to a firm. Academic scholars have found positive relationships between women managers and more effective organizations (Adler, 2002; Cordeiro & Stites-Doe, 1997; Eagly et al., 2003; Fisher & Nelson, 1996). In the popular press, a study reported in *USA Today*, for example, showed that when women and men were rated on leadership skills, women took "top honors" in 28 of the 31 categories studied (Neuborne, 1996). Those categories included ability to meet deadlines, ability to generate ideas, and productivity. A Catalyst study reported in *Workforce Management* found that in a "four year study of 353 companies in the Fortune 500, companies with the most women in top leadership . . . had a 35.1% higher return on equity . . . than those in the bottom quarter of companies" (Feeney & Lewis, 2004, p. 24) top quarter 20% women, bottom quarter 2% women). Those kinds of reports may have lasting impressions on investors, although there is no research to verify that fact.

In addition, we cannot forget the fact that many investors today are women, and it is quite possible that women are a bit biased toward firms with TMTs that employ women. Or, hot companies (those that are getting higher levels of market, book, or Tobin's Q at the IPO) may be the types of firms that can attract women executives. Alternatively, faster growing, less established firms may not be able to discriminate against women in personnel selection, whereas longer established firms have existing hierarchies where women are not yet included. Unfortunately, this possibility is not borne out in our data, which show no correlation between firm age and percentage of women of women on the TMT.

To further examine this issue, a variety of research studies and designs (in-depth interviews with investors, surveys sent to investors, reactions from women who attend the road show, etc.) are warranted. It would be interesting

to know whether it is the percentage of women in general or women in certain types of jobs that may hold appeal to investors. And what are the internal dynamics of the management teams that have women versus those that do not? Particularly for IPO firms, where the firm faces high levels of risk and where the IPO process itself can be so draining to a firm, studies that consider the effects of diverse management teams (considering both women and other minority groups) on the top team's dynamics would be useful.

Do Women Really Make a Difference?

Of course, the long-term results may help us understand the short-term results. We know that in the world of investing, profits and stock price growth matter. Investors put their money into a firm's stock in hopes that their wealth will increase. The results from the long-term study indicate that having women on the TMT results in higher earnings and greater shareholder wealth. Investors learn by experience, and it is quite possible that they know something about the dynamics of women in the TMT that leads them to value their presence.

But what is happening in the TMT that can be affecting long-term firm performance? It is important to remember that the maximum percentage of women in the TMTs of the firms in the study was 86% (with only 1% of the firms having more than 50% women). Therefore, it is not women per se that make the difference; it is the increase in magnitude of women on the TMT that results in greater long-term firm performance.

There has been considerable research examining the differences between women-owned and men-owned businesses, generally indicating that there were discernable differences in things such as performance, business strategy, performance goals, and management practices (Fischer, Reuber, & Dyke, 1993; Frink et al., 2003; Hisrich & Brush, 1984). A study conducted by Chaganti and Parasuraman (1996) found significant differences between performance of women-owned businesses (WOBs) and men-owned businesses, with the WOBs obtaining lower sales (no differences in employment growth or Return on Assets, ROA). Although results are not conclusive, this research stream seems to suggest that WOBs may use different strategies, which achieve different results. Alternatively, it also could suggest that WOBs have fewer resources available to them as they enact their strategies. Further study of the use of resources by WOBs may yield insights.

It would be interesting to know how many WOBs have men on their TMTs. Given the results of this study, we would suggest that WOBs would also benefit (we say also because all of the IPO firms had men in the CEO or

founder job) from having a diverse gender mix on the TMT. Given that the maximum percentage of women on the TMT in the IPO sample is 86%, this means that firms benefiting from women on the top team are actually benefiting from diversity in the executive ranks. Because most of the firms in our sample had TMTs constituted of 50% women or less, our findings are consistent with those of Frink et al. (2003), who found a curvilinear relationship between percentage of women employed by an organization and firm performance, with maximum performance observed when there were roughly equal numbers of women and men.

Limitations of the Study

The study reported in this article is exploratory in nature, and as a result, the findings should be viewed with caution. Theories of how women contribute to decision making, particularly for younger and riskier firms such as those in the IPO sample, should be expanded to help explain these research findings. In addition, we suggest that researchers undertake in-depth, qualitative studies documenting the links between representation of women and group decision-making dynamics in TMTs to ascertain the roots of these findings. Only then, with a merging of theory and additional qualitative and quantitative data analyses, can we begin to untangle the meaning of these results.

In addition, the study was done with a sample of IPO firms. The degree to which these results can be generalized to other organizations is unknown. Given that most larger organizations have multiple business units and some that would proxy the environment of an IPO firm, it is quite possible that similar results may be found in those groups. Again, this is an opportunity for future studies.

In addition, causation is unknown, particularly for the analysis with Tobin's Q. This is because the data for the Tobin's Q analysis were all obtained at one period. As noted earlier, the presence of women may be a cause of higher Tobin's Q, or it may be that firms with higher Tobin's Q are better able to attract (and pay) women who are qualified to be in the top executive team. We can have more confidence in causation for the long-term analyses because the data on TMT were obtained at Time 1 (time of IPO) and the performance data were from Time 1 through Time 2 (time of IPO in 1993 through year-end 1996). But at the same time, there may have been changes in the firm from IPO to year-end 1996 that affected performance and that were not included in my study. Unfortunately, we do not know what the stability of the team composition was after the IPO. Further

research is needed to explore stability and changes in the TMT (women leaving, being added to the team, etc.).

Lastly, and perhaps most importantly, the presence of women on the TMT and their relationship to firm performance is subject to the “black box” critique of demography (Lawrence, 1997; Priem, Lyons, & Dess, 1999). The demographic gender variable serves as a proxy for underlying constructs we were unable to explore, such as feminine leadership styles, the effects of diversity, and other important antecedent conditions. In addition, although the direct relationship between gender and performance is interesting, the intervening process variables may provide more promising explanations of why such a relationship exists (Pelled, Eisenhardt, & Xin, 1999).

Conclusion

Although there are indeed some limitations in this study, the results are consistent for both short-term and long-term firm performance, which suggests that this is a topic worthy of future research. It appears that Wall Street does value women (at least when they are on the TMT of IPO firms), and in this case, Wall Street seems to know its business. The percentage of women on the TMT of IPO firms is growing, and that may result in better performance of IPO firms and more opportunities for skilled female executives.

In fact, the results of this study may say more about the exodus of highly qualified women from larger firms to smaller organizations than anything else. Although only speculative, the results may be the result of very highly qualified women (perhaps more qualified than the level of men who can be attracted to these firms) working for IPOs. If a smaller, riskier company has the choice of a very qualified woman and a less qualified male employee, the choice of the female should help the organization. As noted in the popular press articles, women seem to agree that a glass ceiling of some sort still exists in large corporations. Perhaps highly talented women are leaving the firms with such a ceiling, moving to more entrepreneurial firms and helping these organizations in ways that benefit the firm in both the short and long run.

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Theresa M. Welbourne is the president and CEO of eePulse, Inc. and an adjunct professor at the Ross School of Business, University of Michigan. Her specialization is HR strategy in high-growth and high-change organizations. She has more than 25 years experience in HRM and is published in both academic and practitioner outlets.

Cynthia S. Cycyota is an associate professor of management in the Management Department at the U.S. Air Force Academy in Colorado Springs, Colorado. Her work has been published in top management journals including *Strategic Management Journal* and *Journal of Management* and includes research in business strategies, executive decision making, and research methods.

Claudia J. Ferrante is an associate professor of management in the Management Department at the U.S. Air Force Academy in Colorado Springs, Colorado. Her work has been published in top management journals including *Trends in Organizational Behavior*, *Journal of Engineering and Technology Management*, and *Journal of Management Education*. Her current research interests include open-book management (sharing financial information with employees), transparency in the workplace, organizational justice, international management, and compensation.