

THE DIVERSITY OF CORPORATE BOARD COMMITTEES AND FINANCIAL PERFORMANCE

David A. Carter
Oklahoma State University

Frank D'Souza
Loyola College of Maryland

Betty J. Simkins
Oklahoma State University

W. Gary Simpson
Oklahoma State University

Abstract

We examine the relationship between the gender and ethnic minority diversity of the board of directors and the financial performance of the firm, in other words, the economic case for a diverse board of directors. The research is unique because we analyze both the diversity of the board and the diversity of important board committees to gain greater insight into the way diversity affects board functions and, ultimately, shareholder value. Our sample consists of all firms listed on the Fortune 500 over the period 1998-2002 yielding a panel of data with approximately 2,000 firm years. The results of three-stage least-squares estimation support the conclusion that board diversity has a positive effect on financial performance as measured by Tobin's q . The evidence on board committees indicates that gender diversity has a positive effect on financial performance primarily through the audit function of the board and ethnic diversity impacts financial performance through all three functions of the board we investigated, audit, executive compensation, and director nomination.

* Corresponding author. Tel: +1-405-744-8636; fax +1-405-744-5190.
E-mail address: simpson@okstate.edu (W. Gary Simpson)

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I. Introduction

The case for board diversity based on equity and fairness is normative and is generally accepted by the U. S. legal system and culture. Corporations, organizations, and individuals seldom publicly or directly dispute the proposition that women and ethnic minorities deserve equitable opportunities to serve on boards and in upper management positions.¹ American corporations are making some progress toward the inclusion of more women and minorities on corporate boards, albeit the extent of the progress is subject to interpretation. Women held 14.7% of the board seats of the Fortune 500 companies in 2005, an increase from 13.6% in 2003 and 9.6% in 1995 (Catalyst Inc. 2006).² Sixteen percent of the directors are women and 15% are minorities for the top 200 companies of the *S & P 500* (Pomeroy 2006). One hundred and sixty-two black directors serve on the boards of the top 200 companies of the *S & P 500* which is double the number in 1987 (Crockett 2006). However, 46% of the U. S. labor force is female, 50.6% of management, professional, and related occupations are women, and 32 % of all M.B.A. degree holders are women (Catalyst Inc. 2006).

The economic case for a diverse board is that board diversity causes a business to be more profitable and creates value for shareholders. This argument implies that diverse directors are not perfect substitutes with identical ability and talents but diverse directors have unique characteristics that create additional value. The economic or

¹ Evidence suggests that discrimination is a complex social and human phenomenon with many subtleties *e.g.* see Levitt (2004).

² Catalyst is an independent, nonprofit membership organization that conducts research on issues related to women in the business organizations.

business case for board diversity is a positive statement which is more difficult to assess than the normative equity case. A debate over a positive statement can sometimes be resolved by analysis of the data. Board diversity can be observed and the implications potentially tested empirically but the facts in this case are difficult to untangle and determine causation. The validity of the normative case for board diversity is not dependent on the economic case but certainly it would be attractive from various perspectives if including qualified women and minorities on the board because it is the equitable and just thing to do resulted in value creation for shareholders. If board diversity has a neutral influence on financial performance, the normative case is still solid but a negative influence creates significant dissonance and the economic costs of fairness become an issue.

Empirical investigation is problematical for several reasons (Hermalin and Weisbach 2003). First, the theoretical link between board composition, including diversity, and firm performance is not well developed. Why should we expect board diversity to produce a beneficial impact on board process which in turn improves board performance? Furthermore, how does board performance translate into increased profitability and shareholder value? Second, empirical tests of the link between board composition and firm performance may be subject to the problem of joint-endogeneity of board characteristics, board process, board actions, and firm performance (Hermalin and Weisbach 2003). Joint-endogeneity creates both econometric estimation difficulties and confusion in interpreting the results of the empirical analysis (Hermalin and Weisbach 2003). If one finds a simple positive empirical relationship between board diversity and firm performance, what does this imply about causation? One possibility is that more diverse boards create value for shareholders but another possibility is that successful

companies have the economic resources to encourage diversity based on equity and fairness. Third, data on board diversity, especially ethnic minorities, is not readily available causing much of the previous evidence to be based on limited time frames or small samples. Previous empirical tests of the economic case for diversity are equivocal.³ The mixed results are not unexpected because the link between board diversity and firm financial performance is both theoretically and empirically complicated.

The purpose of this research is to empirically investigate the economic case for board diversity, both gender and ethnic. Our approach is unique because we investigate the composition of important board committees, in addition to board composition, to delve deeper into the nature of board process. We reason that women and ethnic minority directors who serve on influential board committees are more likely to substantially impact actions of the board and management. As a result, a comparison of the percentage of women and ethnic minorities on important board committees to firm performance is a more sensitive test of the impact that board diversity can have on firm performance because board committees are more likely to actually affect firm performance.⁴ The issue of causation can be addressed better by examining board committees because corporations are less likely to place “token” directors on important board committees that make critical firm decisions. In other words, the direction of causation is more likely to go from the diversity of board committees to financial

³ A significant body of evidence on diversity in the work place exists in the organizational behavior literature. Westphal and Milton (2000) state “While the presence of demographic minorities on boards is typically viewed favorably by corporate stakeholders, the academic literature on organizational demography and social conformity is more pessimistic about the extent to which demographic minorities can successfully influence group decisions making.” Westphal and Milton (2000) go on to present evidence that demographic minorities may have more influence than once thought. However, the overall body of evidence appears to be equivocal. A consortium of major university researchers known as the Diversity Research Network states that their analysis “suggests a more nuanced view of the ‘business case’ for diversity may be appropriate.” (Kochan, et. al. 2003). We review the evidence linking financial performance and diversity in a later section of this paper.

⁴ Klein (1998) uses similar logic in an analysis of independent directors on board committees and Adams, Almeida, and Ferreira (2005) make a somewhat related argument in their analysis of powerful managers.

performance than the diversity of the board of directors to firm performance. We develop a system of simultaneous equations and test the fundamental proposition of the economic case for diversity with an extensive and unique five year panel of data for *Fortune 500* companies. The increasing proportion of females and minorities on U. S. boards over time indicates that panel data is appropriate for this question. We use a three-stage least squares regression to estimate the system of equations that links Tobin's q to board committee diversity.

The paper is organized as follows: In the next section, we review the theoretical arguments supporting the economic case for board diversity. Section 3 reviews the evidence on board diversity and financial performance. In Section 4, we discuss the sample, data, descriptive statistics, and statistical methods. We present the results of the statistical analysis in Section 5 and conclude the paper in Section 6.

II. Theoretical Foundations of the Economic Case for Board Diversity

The essence of the economic case for board diversity is as follows: board diversity enhances the effectiveness of board actions which increases the productivity and performance of the corporation resulting in increased profitability and shareholder value (Van der Walt and Ingley 2003, Stephenson 2004, Robinson and Dechant 1997, and Catalyst 2004). Board performance is enhanced because some functions of the board are enhanced if the board has a more diverse membership according to the proponents of the economic case. The economic case does not argue that diverse directors are perfect substitutes for other board members but diverse directors are individuals with unique characteristics that create additional value for shareholders. The economic case is not a unified construct drawn from a single theory but more of an intuitive and pragmatic collage of propositions based on business practice, opinions, anecdotal evidence, and

empirical evidence. However, certain facets of the economic case can be explained by three theories from economics and organizational behavior: agency theory, transaction cost economics, and resource dependence theory.

The board of directors is generally believed to have at least four important functions: monitoring and controlling managers, providing information and counsel to managers, monitoring compliance with applicable laws and regulations, and linking the corporation to the external environment (Monks and Minow 2004 and Mallin 2004).

The theoretical foundation for the function of monitoring and controlling managers derives from agency theory (Jensen and Meckling 1976) and transaction cost economics (Williamson 1988). The facet of the economic case for diversity tied most closely to agency theory suggests that a more diverse board is a better monitor of managers because board diversity increases board independence. Diverse directors are less likely to be beholden to managers according to this view, *e.g.* TIAA-CREF adopts this proposition in their policy statements (Carleton, Nelson, and Weisbach 1998).

However, minority board members may be marginalized by the majority and their input not considered in group decisions.⁵ Furthermore, factors such as ownership position in the firm may have a more powerful influence on board monitoring than independence.⁶

One of the central propositions of the economic case for board diversity is that women and minority directors provide significant unique information to the board and managers which improves strategic decision making.⁷ In addition, board diversity

⁵ Westphal and Milton (2000) find that a complicated set of factors impact the probability that minority directors will be marginalized.

⁶ Jensen (1993) and Monks and Minow (2004) argue that high equity ownership by directors is a more important factor in increasing the willingness of directors to monitor than independence.

⁷ Fama and Jensen (1983) indicate 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

ostensibly encourages different and creative new perspectives on the strategic decisions of the corporation (Brancato and Patterson 1999). Diverse directors generate increased communication on topics often not addressed by the board which mitigates stagnant thinking, renews the organization, and broadens the focus of the corporation (Stephenson 2004). Supporters of the economic case reason that information flow and decision making are improved because board diversity encourages higher-level problem solving and constructive dissent (Stephenson 2004 and Robinson and Dechant 1997). Women and minority directors have unique knowledge of some consumer markets and certain customers because of their extensive participation in these markets according to proponents of the economic case (Stephenson 2004). In summary, a second proposition of the economic case for board diversity is that board diversity improves the processing of information and advice by the board plus provides new, unique, and valuable components to the information set available to the board and managers.

Pfeffer and Salancik (1978) argue that boards serve to link the corporation to other external organizations in order to address environmental dependencies. Pfeffer and Salancik (1978) suggest four primary benefits for the external linkages: provision of resources such as information and expertise, creation of channels of communication with constituents of importance to the firm, provision of commitments of support from important organizations or groups in the external environment, and creation of legitimacy for the firm in the external environment.⁸ The economic case for board diversity

Weisbach (1998) indicate that the role of boards to provide information and advice to management could be added to their model of monitoring to make their model richer. Further, Hermalin and Weisbach (1998) suggest that the role of providing information and advice is complementary to their analysis. Song and Thakor (2006) develop a governance model that considers information flows between the board and CEO. Adams and Ferreira (2006) analyze the board's dual role as advisor and monitor of management. Their model considers the flow of information between the CEO and board.

⁸ For example, 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

indicates that a diverse board helps attract and retain talented female and minority managers and employees (Stephenson 2004). The creation of this important link is crucial because over half of the pool of human capital available to the firm is composed of women and minorities. As a result, diverse organizations have access to more talent. A diverse board is believed to provide legitimacy for the firm with women and minorities in the labor market and product markets. Board diversity 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 (Brancato and Patterson 1999).

In summary, the economic case for board diversity can be reduced to the following propositions: (1) diversity improves the ability of the board to monitor managers due to increased independence, (2) diversity improves the decision making of the board due to unique new perspectives, increased creativity, and nontraditional innovative approaches, (3) diversity improves the information provided by the board to managers due to the unique information held by diverse directors, (4) diverse directors provide access to important constituencies and resources in the external environment, (5) board diversity sends important positive signals to the labor market, product market, and financial market, and (6) board diversity provides legitimacy to the corporation with both external and internal constituencies.

III. The Evidence on Board Diversity and Firm Performance

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 the boards of companies that sell to the government or face government regulation. However, they find little evidence that women directors play a political role.

The analytical methods and data used in previous tests of the relationship between board diversity and financial performance are highly varied, as are the results and conclusions of the research.⁹

Some investigations provide support for the proposition that board diversity is positively related to financial performance.¹⁰ Adams and Ferreira (2002) and Carter, Simkins, and Simpson (2003) both find that Tobin's q is positively related to the percentage of female directors on the board. Adams and Ferreira (2002) use a sample of 1,066 publicly traded firms for the year 1998 and Carter, Simkins, and Simpson (2003) employ a sample of 638 firms from the *Fortune* 1,000 for the year 1997. Carter, Simkins, and Simpson (2003) also find that the percentage of ethnic minority directors is positively related to Tobin's q . Erhardt, Werbel, and Shrader (2003) find that the percentage of Caucasian females plus ethnic minority directors on the board is positively related to ROE and ROA for a 1998 sample of 117 *Fortune* 1000 firms.¹¹

Other analyses find no relationship between board diversity and firm performance. Farrell and Hersch (2005) use Poisson regression and an event study to investigate the addition of females to the board. They find no evidence that addition of a female to the board affects ROA or market returns to shareholders. Shrader, Blackburn and Iles (1997) find no relationship between the percentage of female directors on the board and profit margin, ROA, or ROE. Zahra and Stanton (1988) conduct a canonical

⁹ Limitations of the evidence include: (1) measurement of financial performance with metrics that do not capture the market return to shareholders, (2) statistical analyses that do not address the joint endogeneity of important variables, and (3) data limited to one or two cross-sections.

¹⁰ Catalyst (2004) finds that the percentage of corporate officers that are women is positively related to the ROE and cumulative return to stockholders for a sample of 353 Fortune 500 firms over the period 1996-2000. The Catalyst (2004) investigation does not consider board membership.

¹¹ Adams and Ferreira (2002) did not find a relationship between the percentage of female directors and ROA. Adams and Ferreira (2002) conduct a probit analysis of 6,961 individual directors and find a negative relationship between a dichotomous variable which equals 1 if a director is female and 0 if male and ROA but a positive relationship between the dichotomous director gender variable and Tobin's q .

correlation analysis and find no relationship between the percentage of females plus ethnic minorities on the board and ROA, profit margin, sales to equity, EPS, or dividends. Ellis and Keys (2003) conduct an event study and find significant positive two-day CAR's when a firm is recognized as one of Fortune's top diversity promoting firms but board diversity was not related to the positive CAR's in a regression analysis.

All of the aforementioned studies used data from U. S. firms. Smith, Smith, and Verner (2006) analyze the financial effect of female officers and directors with a sample of approximately 2,400 Danish firms over the period 1993-2001 for 18,800 firm-year observations. Smith, Smith, and Verner (2006) employ several statistical approaches with mixed results that appear to be sensitive to the statistical method used. They conclude that female directors elected by staff have a positive effect on performance but other female directors actually have a negative effect. Smith, Smith and Verner (2006) explain the negative impact may result because most of the women on boards not elected by staff have family ties to the owners. Ultimately, Smith, Smith, and Verner (2006) conclude that there is a positive relationship between the proportion of women on boards and financial performance and that causation runs from board diversity to firm performance.

While some investigations find a positive relationship between board diversity and financial performance and some do not find any relationship, almost none find a negative relationship.

IV. Statistical Method and Hypotheses

A. Statistical Model of the Economic Case for Board Diversity

Hermalin and Weisbach (2003) argue that the relationship of most board characteristics and firm performance are jointly endogenous which implies that a system

of equations is the most appropriate statistical model. The following structural simultaneous equations are used to test the economic case for board diversity:

$$q_{i,t} = \beta_0 + \beta_1 d_{i,t} + \beta_2 r_{i,t-1} + \beta_3 w_{i,t-1} + \beta_n \Gamma_{i,t-1} + \beta_m \Phi_{i,t} + \beta_p \Omega_{i,t} + e_{i,t} \quad (1)$$

$$d_{i,t} = \gamma_0 + \gamma_1 q_{i,t} + \gamma_2 r_{i,t-1} + \gamma_3 w_{i,t-1} + \gamma_j X_{i,t-1} + \gamma_u \Phi_{i,t} + \gamma_v \Omega_{i,t} + \varepsilon_{i,t} \quad (2)$$

where q equals a measure of financial performance, for example Tobin's q , d represents a measure of board diversity, for example the percentage of females on the board, r equals the return on assets, w equals the log of total assets, Γ is a vector of governance variables hypothesized to affect financial performance, X is a vector of governance variables hypothesized to affect diversity, Φ is a vector of dummy variables that represent the years in the panel data, Ω is a vector of dummy variables that represent the industry of the firm, β 's and γ 's denote equation parameters, t is the calendar year in the panel of data, i is a specific firm in the panel data, and e and ε error terms. Board diversity and financial performance are endogenous variables and the other variables that are not fixed effect dummy variables are predetermined variables.¹² We estimate the system of simultaneous equations with the three-stage least squares (3SLS) procedure instead of two-stage least squares because 3SLS accounts for cross-equation correlation (Pindyck and Rubinfeld 1998).

B. Measurement of board diversity and financial performance

One of the standard approaches to the measurement of board diversity is to calculate the percentage of female (or minority) directors on the board by dividing the number of female (or minority) directors by the total number of directors on the board. We calculate the percentage of female directors on the board and the percentage of

¹² The predetermined variables are all lagged endogenous variables. We believe that it is unlikely that any of the variables we include in the equations are truly exogenous.

minority directors on the board in a similar manner. Minority directors are defined as any member of the following ethnic groups: Asians, Hispanics, and Blacks. More importantly, we create additional measures of diversity based on female and minority membership on major board committees, that is audit, nomination, and compensation. We calculate the percentages of women on each of the audit, nomination, and compensation committees and similar percentages for ethnic minorities for use as additional measures of board diversity.

Klein (1998) concludes that membership on board committees provides a more accurate picture of each director's role on the board which should lead to a more accurate test of the relationship between board composition and board effectiveness. Klein (1998) considers committee membership to be a proxy for the duties or functions of a director on the board.¹³ Directors have a stronger and more direct impact on executive compensation, new director selection, strategic managerial decisions, and other actions that significantly affect corporate performance if they serve on board committees with primary responsibility for these functions. Any unique advantages or disadvantages that might exist for women and minorities relative to board process should have a more direct effect through committee assignments.

We use Tobin's q to measure firm financial performance as calculated by Chung and Pruitt (1994). Tobin's q is the ratio of the market value of a firm divided by the replacement cost of its assets and is often used to measure firm financial performance,

¹³ Klein (1998) did not find any relationship between firm financial performance and the percentage of insiders on the board but did find a positive significant relationship between firm financial performance and the percentage of inside directors on the finance committee and long term investment committee. Klein(1998) did not find any relationship between the percentage of outside directors on the audit committee and firm performance and found a significant negative relationship between the percentage of outside directors on the compensation committee and financial performance.

particularly in corporate governance research.¹⁴ Chung and Pruitt (1994) find that their approximation explains 96.6 percent of the variability in the more theoretically correct measure calculated by Lindenberg and Ross (1981).

C. Predetermined Variables for the Financial Performance Equation

We include two variables designed to hold constant the operating and financial characteristics of the firm: return on assets and the natural logarithm of total assets. Return on assets is an accounting measure of firm performance that indicates the bottom line net income from all of the operations of the company relative to the average book value of all assets and has shown to be predictive of Tobin's q (Yermack 1996 and Carter *et.al.* 2003). Size of the firm is normally used as a control variable in an analysis of financial performance and is shown to be related to market returns by Fama and French (1992), among others. Many studies show that firm size is related to Tobin's q .¹⁵

We create a second set of variables that measure various aspects of the governance structure of the firm and have been shown to be related to Tobin's q in previous investigations.

Yermack (1996) finds that board size and Tobin's q are inversely related and we include the number of directors on the board in the financial performance equation.

We hypothesize that the nature of the leadership structure of the firm will have an impact on financial performance and add a dummy variable to represent if the CEO and Chair of the Board are combined. Brickley, Coles, and Jarrell (1997) find that a combined CEO-Chair leads to lower cash flows and market value and Goyal and Park

¹⁴ For example, see Yermack (1996), Morck, Schleifer, and Vishny (1988), Prevost, Rao, and Hossain (2002), Demsetz and Villalonga (2001), and Faleye (2007).

¹⁵ For example, see Yermack (1996), Prevost, Rao, and Hossain (2002), and Faleye (2007).

(2002) find that CEO turnover after poor financial performance is lower if the CEO and Chair are the same person.

The effect of independent directors on the board is a major area of interest in the corporate governance literature. Numerous investigators have explored this issue and reach a mix of conclusions, but some find a relationship.¹⁶ We include two variables that address the effect of director independence: the percentage of independent directors and the percentage of linked directors. We use the *Investor Responsibility Research Center* (IRRC) definitions of independent and linked. Independent directors are defined by the IRRC as not an executive or employee and not linked in some other way. The IRRC has a list of conditions that create a link including being a family member of an executive or a former employee.

The ownership position of the board is hypothesized to affect financial performance but the exact nature of this relationship is subject to some debate (Demsetz and Villalonga 2001). We include the percentage of the total shares outstanding that are owned by the board in the financial performance equations.

Fich and Shivdasani (2006) find that firms with a majority of the outside directors serving on three or more boards have lower market-to-book ratios, lower profitability, and lower sensitivity of CEO turnover to firm performance. The number of additional board memberships of current directors is used as a predetermined variable in the financial performance equation.

Vafeas (1999) reports evidence that board meeting frequency and firm performance are related and concludes that board activity is an important dimension of

¹⁶ Refer to Hermalin and Weisbach (2003) and Bhagat and Black (1999) for a summary and critique of some of these studies. Hermalin and Weisbach (1988) document a complex set of board changes from insiders to outsiders, and vice versa, CEO changes, and firm performance.

board process. We hypothesize that meeting attendance by directors is an indication of the quality of board process and include the percentage of the total number of directors that attended less than seventy-five percent of board meetings in the financial performance equation.

D. Predetermined Variables for the Board Diversity Equation

We hypothesize that larger firms are more likely to have a higher percentage of female and minority directors. This may occur because larger firms are more visible and thus receive more external demands for board diversity or because they have more resources to devote to diversity goals (Farrell and Hersch 2005). Carter et. al. (2003) find that the log of total assets is positively related to the percentage of female directors and the percentage of minority directors in a 2SLS estimation. We control for the size of the board because both Adams and Ferreira (2002) and Carter et. al. (2003) find that board size influences board diversity. The return on assets is included to test if financial performance causes the firm to have a higher percentage of diverse directors. We include an accounting measure of financial performance because it captures a different dimension of performance than Tobin's q -ratio. We hypothesize that the percentage of independent directors, existence of a dual CEO-Chair, average age of the board, and average number of additional directorships held by the board will affect the percentage of female and minority board members.

E. Hypotheses

The first two empirical hypotheses follow directly from the economic case for board diversity and previous empirical tests of board diversity.

Hypothesis I: The percentage of female directors on the board is not related to the financial performance of the firm as measured by Tobin's q .

Hypothesis II: The percentage of ethnic minority directors is not related to the financial performance of the firm as measured by Tobin's q .

Hypotheses III and IV are based on the proposition that the diversity of board committees is related to financial performance because diverse directors should have more of an impact on the financial performance of the firm through their actions and influence on important board committees than normal directors. Furthermore, the direction of causation is more likely to go from diversity on board committees to financial performance because firms would be more likely to consider the economic consequences of placing directors capable of making major contributions on significant committees compared to a normal position on the board.

Hypothesis III: The percentage of female directors on the audit, nomination, or compensation committee is not related to the financial performance of the firm as measured by Tobin's q .

Hypothesis IV: The percentage of ethnic minority directors on the audit, nomination, or compensation committee is not related to the financial performance of the firm as measured by Tobin's q .

We perform a two-tailed test for all four hypotheses using equations 1 and 2.

F. Sample and Data

We obtain data on corporate directors from the *Investor Responsibility Research Center* (IRRC) and, when data was missing, from the *DEF 14A* statements available from the Securities and Exchange Commission *EDGAR* system. Standard measures of corporate governance are created from the IRRC data in addition to the diversity metrics and board committee measures. (Refer to Table 1 for a list of the variables.)

IRRC data is provided for each director. We combine the director data into firm level data by summing to get total directors per firm, total female directors per firm, total minority directors per firm, and the percentage of females and ethnic minorities on the audit committee, nomination committee, and compensation committee. The IRRC did not provide complete data on minority directors for every firm so the sample is smaller for analysis involving minority directors. The ethnicity of board members is not available in the proxy statement.

The sample includes all firms on the list of *Fortune* 500 firms at least one year in the five year period from 1998-2002. Most of the sample firms appear in the *Fortune* 500 for multiple years resulting in approximately 2,500 firm years in the sample. The original IRRC data contain information on the following number of firms: 1998 - 474 firms, 1999 - 473 firms, 2000 - 472 firms, 2001 - 472 firms, and 2002 - 487 firms. Of the firms listed by the IRRC each year, not all firms were included on the *Fortune* 500 list every year. Firms enter the data set after 1998 and drop off before 2002. To mitigate potential sample bias that may arise due to changes in the *Fortune* 500 list, we obtain information for all five years for any firm that may be on the *Fortune* 500 list at least once during the period 1998-2002. Although we obtain data from proxy statements for a number of firms, we were not able to obtain data for all missing firms. This was mainly because the firms were de-listed during the five year period due to bankruptcy, spin-offs, mergers, and takeovers. If data was not available on a firm for all five years, then the available data is used. The final data set consists of 641 unique firms and approximately 2,000 firm years. We have IRRC or proxy data for 341 firms for all five years.

Data to compute the natural logarithm of total assets, the return on assets, and Tobin's q are obtained from the *COMPUSTAT* data base.

The variables were winsorized to avoid the influence of extreme values.

V. Discussion of the Empirical Results

Table 1 presents the descriptive statistics for the diversity variables, board structure variables, and financial variables.

The average board in the sample of 2,563 firm years is comprised of 11.377 percent women.¹⁷ The audit committee of the average board is 14.833 percent female, the nomination committee is 11.066 percent female, and the compensation committee is 10.336 percent female. So, the participation rates for females on important committees are not drastically different from the female percentage composition of total board membership. The same is true of ethnic minorities. The average board in the sample of 1,040 firm years is comprised of 10.416 percent ethnic minority members. The audit committee of the average board consists of 13.815 percent minority directors, the nomination committee is 9.407 percent minority directors, and the compensation committee is 8.636 percent minority directors. The overall participation rates of ethnic minority directors are somewhat lower than female directors but not drastically so.

The boards in the sample have an average of 11.213 total directors. The average age of a board in the sample is 59.35 years and each director on the average board in the sample sits on 1.363 additional boards. Seventy-one percent of the firms in the sample have a combined CEO-COB. The average board in the sample owns 5.845 percent of the outstanding stock of the firm. Only 2.289 percent of the directors of the average board missed 75 percent or more of the board meetings in a year. Independent directors comprised 68.826 percent of the average board membership in the sample and linked directors comprised 12.882 percent of the membership of the average board. The

¹⁷ Women that were members of an ethnic minority were counted as minorities. All of the directors in the female group were Caucasian.

remaining directors (18.354 percent) of the average board were considered to be insiders. The mean values of the board structure variables are generally consistent with the values reported in other studies that used large U. S. companies in the analysis. The mean ROA for the sample firm years was 5.407 percent and the q -ratio 1.314 times, both of which are consistent with the same values reported in other investigations.

A. The Gender Diversity of Corporate Boards and Financial Performance

The 3SLS results presented in Table 2 support a positive relationship between the percentage of female directors on the board and Tobin's q . The first column of results in Table 2 reveals that the coefficient for the percentage of the board that is female is significantly different from zero at the .01 level and positive. These results support the rejection of Hypothesis I. The direction of causation appears to go from the percentage of female directors to firm performance which supports the economic case for board diversity. We reach this conclusion because the 3SLS estimation results in Table 2 show the coefficient for the percentage of females on the board is positive and significant in equation 1 when Tobin's q is the dependent variable but the coefficient for Tobin's q is not significant in the equation 2 when the percentage of female directors is the dependent variable. Furthermore, the return on assets is not significant in equation 2 which argues against the proposition that profitable firms are more likely to select females for board positions.

B. The Gender Diversity of Board Committees and Financial Performance

The results of the 3SLS analysis of the relationship between female membership on board committees and firm performance are presented in Table 3. These results give an indication of the functions performed by women directors which produced the overall increase in shareholder value observed in Table 2.

First, the coefficient for the percentage of women directors on the audit committee is significant (.05 level) and positive when Tobin's q is the dependent variable in equation 1. Causation appears to go from the percentage of women directors on the audit committee to Tobin's q because the q -ratio is not significant in equation 2 when the percentage of the audit committee that is female is the dependent variable. Furthermore, return on assets is not significantly related to the percentage of female directors on the audit committee. These results support the rejection of Hypothesis II when the measure of diversity is the percentage of women on the audit committee.

Second, the third results column of Table 3 reveals that the coefficient of the percentage of females on the compensation committee is positive and significant (.01 level) when the q -ratio is the dependent variable in equation 1. However, the fourth results column of Table 3 shows that the coefficient of the q -ratio is positive and significant when the percentage of females on the compensation committee is the dependent variable (equation 2). This bilateral causality or statistical feedback is an indication that there may be an unknown third variable causing both the q -ratio and the percentage of females on the compensation committee (Pindyck and Rubinfeld 1998). The coefficient for the return on assets is significant in both equations but positive in one and negative in the other. We are hesitant to draw any conclusions from the results of the analysis of the relationship between the percentage of female directors on the compensation committee and Tobin's q .

Third, the results from the relationship between the percentage of women on the nomination committee and Tobin's q reveal a similar statistical feedback relationship but the coefficient for the percentage of females on the nomination committee is negative and significant as is the coefficient for the q -ratio in the second equation. As was true for the

compensation committee results, we are hesitant to draw any conclusions because of the probability that an unobserved third variable is influencing both the gender diversity of the nomination committee and Tobin's q .

C. The Ethnic Minority Diversity of Corporate Boards and Financial Performance

The 3SLS results in Table 2 support the conclusion that a positive significant (.05 level) relationship exists between the percentage of minority directors on the board and firm financial performance. These results are very similar to those we report for women.

As with gender, we explore the direction of causation for the relationship between the percentage of ethnic minority directors and the q -ratio. Causation appears to go from the ethnic minority diversity of the board to financial performance because the coefficient reported in Table 2 for the percentage of minority directors is positive and significant in the equation with the q -ratio as the dependent variable but the q -ratio is not significant in the second equation when the percentage of minority directors is the dependent variable. The return on assets is not significant in equation 2 with percentage of minority directors on the board as the dependent variable which gives no indication that more profitable firms are more likely to select ethnic minorities for board seats. Once again, the results suggest that board diversity causes good financial performance which supports the rejection of Hypothesis I and the economic case for board diversity.

D. The Ethnic Minority Diversity of Board Committees and Financial Performance

The 3SLS results reported in Table 4 support rejection of Hypothesis II for the audit committee, compensation committee, and nomination committee and a positive significant relationship between the q -ratio and the percentage of ethnic minority directors on the audit committee, compensation committee, and nomination committee.

The results of the 3SLS regressions reported in Table 4 indicate to us that causation goes from committee ethnic minority diversity to firm performance in all three of the board committees investigated. In each case, the percentage of minority directors on the committee is significant in equation 1 when the q -ratio is the dependent variable but the q -ratio is not significant in any of the second equations when the percentage of minority directors on a particular committee is the dependent variable. The positive significant relationships between the ethnic minority diversity of the board committees and Tobin's q support the economic case for diversity.

The results of the 3SLS regressions for the composition of board committees are noticeably different for women and ethnic minorities. When the composition of the entire board is considered, gender diversity and ethnic minority diversity appear to lead to the same result. However, the analysis of the composition of important board committees indicates that gender diversity and ethnic minority diversity may actually affect financial performance in different ways.

VI. Conclusions

The empirical results of this investigation of a sample of Fortune 500 firms for the five year period 1998-2002 support a positive link between board diversity and firm financial performance. Our data indicate that the direction of causation goes from board diversity to firm financial performance which supports the economic case for board diversity. Gender diversity and ethnic diversity of the board of directors and board committees appear to create value for shareholders.

The research is unique because we delve deeper into the functions of the board by investigating the relationship between the gender and ethnic diversity of important board committees and financial performance as measured by Tobin's q . We find that the

gender diversity and ethnic diversity of the board committees are similar, but not identical, in the way they affect the financial performance of the firm. Gender diversity appears to primarily have a positive impact on financial performance through the audit function. Our evidence does not provide a clear indication that gender diversity affects financial performance through the executive compensation function or director nomination function of the board. Ethnic minority diversity appears to have a positive impact on financial performance through all three board functions we investigated: audit, executive compensation, and director nomination.

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TABLE 1
Descriptive Statistics and Variable Definitions

Variable	Obs.	Mean	Standard Deviation	Minimum	Maximum
<i>Diversity Variables:</i>					
% board female	2,563	11.377	7.989	0.000	60.000
% audit female	2,556	14.833	15.730	0.000	100.000
% nomination female	2,554	11.066	15.459	0.000	100.000
% compensation female	2,556	10.336	14.729	0.000	100.000
% board minority	1,040	10.416	7.917	0.000	44.440
% audit minority	1,040	13.815	15.489	0.000	66.670
% nomination minority	1,039	9.407	13.915	0.000	66.670
% compensation minority	1,039	8.636	13.773	0.000	100.000
<i>Board Structure Variables:</i>					
Number of directors	2,563	11.213	3.147	4.000	32.000
Age of board	2,562	59.350	3.239	43.330	70.385
CEO-Chair duality	2,563	0.710	0.454	0.000	1.000
Additional directorships	2,563	1.363	0.735	0.000	4.620
Meeting attendance	2,563	2.289	5.037	0.000	37.500
% board ownership	2,563	5.845	12.842	0.000	100.000
% independent directors	2,563	68.826	15.780	0.000	100.000
% linked directors	2,563	13.216	12.882	0.000	91.670
<i>Financial Variables:</i>					
Return on assets	2,060	5.407	5.156	- 3.320	16.635
Total assets	2,060	9.005	1.400	5.380	13.870
q-ratio	2,563	1.314	1.296	0.170	5.090
<p>Note.-The sample firms consist of those firms that appeared at least once in the Fortune 500 for the time period 1998-2002. Many of the firms in the sample had data for multiple years. The number of observations indicates the number of firm-years. The diversity variables and board structure variables were calculated by combining individual director data provided by the <i>Investor Responsibility Research Center (IRRC)</i> into annual firm level values. Missing data were obtained from DEF 14-A Statements from the SEC. The IRRC data indicated if a director was Asian, Hispanic, Black, or Caucasian. Asian, Hispanic, and Black directors were combined to arrive at the total for minority directors. Caucasians were considered to be an ethnic majority. IRRC data indicating if a director is an ethnic minority is not available for all directors and is not reported in proxy statements. Data for the financial variables were taken from COMPUSTAT.</p>					
<p>Variable Definitions:</p> <p>% board female = number of Caucasian female directors on the board divided by the total number of directors on the board.</p> <p>% audit female = number of Caucasian female directors on the audit committee divided by the total number of directors on the audit committee.</p> <p>% nomination female = number of Caucasian female directors on the nomination committee divided by the total number of directors on the nomination committee.</p> <p>% compensation female = number of Caucasian female directors on the compensation committee divided by the total number of directors on the compensation committee.</p>					

% board minority = number of ethnic minority directors on the board divided by the total number of directors on the board.

% audit minority = number of ethnic minority directors on the audit committee divided by the total number of directors on the audit committee.

% nomination minority = number of ethnic minority directors on the nomination committee divided by the total number of directors on the nomination committee.

% compensation minority = number of ethnic minority directors on the compensation committee divided by the total number of directors on the compensation committee.

Number of directors = total number of directors on the board as reported by the IRRC.

Age of board = average age of the board = sum of the ages of all directors divided by the total number of directors.

CEO-Chair duality = 0 if the chief executive officer and chair of the board of directors are not the same person and 1 if a single individual holds both offices.

Additional directorships = the average number of directorships held by each director on the board in addition to the sample firm directorship = sum of the number of additional directorships reported by the IRRC for all directors on the board divided by the total number of directors.

Meeting Attendance = the total number of directors that attended less than 75% of board meetings divided by the total number of directors.

% board ownership = the total number of common shares owned by all directors divided by the total common shares outstanding of the firm.

% independent directors = the number of independent directors as defined by the IRRC divided by the total number of directors on the board. (An independent director is one that is not an executive or employee of the company or linked in some other way.)

% linked directors = the number of linked directors as defined by the IRRC divided by the total number of directors on the board. (The IRRC has a list of conditions that create a link including being a family member of an executive or a former employee.)

Return on assets = net income divided by total assets as calculated by COMPUSTAT.

Total Assets = the natural logarithm of total assets.

q -ratio = the approximation of Tobin's q as calculated by Chung and Pruitt (1994).

TABLE 2				
3SLS Estimation Results: The Relationship between the Percentage of Women Board Members and Percentage of Minority Board Members and Firm Performance				
	Endogenous Dependent Variables			
	<i>q</i> -ratio (equation 1)	% board female (equation 2)	<i>q</i> -ratio (equation 1)	% board minority (equation 2)
Intercept	2.585*** (0.661)	-9.722 (19.155)	2.317*** (0.829)	28.185 (22.437)
Predetermined Variables				
Number of directors	-0.004 (0.014)	0.036 (0.087)	0.022 (0.017)	0.116 (0.192)
CEO-Chair duality	-0.212*** (0.081)	0.997 (0.924)	-0.239** (0.104)	0.495 (1.232)
Additional directorships	-0.242*** (0.083)	1.387*** (0.299)	-0.155* (0.087)	1.796*** (0.486)
% independent directors	-0.023*** (0.007)	0.124*** (0.032)	-0.014*** (0.005)	-0.043 (0.084)
Total assets	-0.146*** (0.051)	0.822*** (0.199)	-0.132* (0.073)	1.743*** (0.306)
Age of board		-0.060 (0.226)		-0.628** (0.265)
Meeting attendance	-0.009 (0.038)		-0.015* (0.008)	
% board ownership	0.002 (0.003)	-0.004 (0.025)	0.003 (0.004)	0.043 (0.041)
% linked directors	0.000 (0.003)		-0.001 (0.006)	
Return on assets	0.109*** (0.012)	-0.417 (0.775)	0.136*** (0.010)	0.994 (1.023)
Estimated Variables				
<i>q</i> -ratio		4.231 (5.592)		-6.053 (6.991)
% board female	0.174*** (0.050)			
% board minority			0.081** (0.036)	
Year Fixed Effect Dummy Variables				
1999	-0.239* (0.130)	1.337** (0.632)	-0.170 (0.149)	1.952* (1.065)
2000	-0.260** (0.133)	1.462** (0.619)	-0.310** (0.149)	1.417 (1.376)
2001	-0.263*** (0.128)	1.423** (0.694)	-0.378** (0.149)	0.521 (1.924)
2002	-0.473*** (0.148)	2.508*** (0.984)	-0.506*** (0.166)	0.935 (2.309)
Industry Fixed Effect Dummy Variables				
D2	-0.794** (0.350)	3.572 (4.148)	-0.038 (0.420)	0.862 (3.343)

D3	0.114 (0.181)	0.051 (2.703)	0.585*** (0.203)	7.135 (5.576)
D4	-0.086 (0.171)	0.530 (0.919)	0.002 (0.230)	4.837** (2.410)
D5	-0.619* (0.344)	3.502** (1.609)	0.280 (0.420)	0.762 (3.615)
D6	-0.560* (0.182)	3.464*** (1.330)	0.073 (0.284)	7.084** (3.490)
D7	-0.436** (0.293)	2.035 (1.983)	-0.018 (0.215)	-2.146 (1.986)
D8	0.714*** (0.182)	-2.993 (4.204)	0.960*** (0.243)	7.162 (7.414)
System Weighted MSE	21.360		14.297	
df	4,075		1,379	
System Weighted R ²	0.310		0.190	
<p>Note.- Estimation of Equations 1 and 2: $q_{i,t} = \beta_0 + \beta_1 d_{i,t} + \beta_2 r_{i,t-1} + \beta_3 w_{i,t-1} + \beta_n \Gamma_{i,t-1} + \beta_m \Phi_{i,t} + \beta_p \Omega_{i,t} + e_{i,t}$ $d_{i,t} = \gamma_0 + \gamma_1 q_{i,t} + \gamma_2 r_{i,t-1} + \gamma_3 w_{i,t-1} + \gamma_j X_{i,t-1} + \gamma_u \Phi_{i,t} + \gamma_v \Omega_{i,t} + \varepsilon_{i,t}$</p> <p>This table presents the results for the 3SLS solutions to the structural simultaneous equations hypothesized to explain the relationship between firm performance as measured by Tobin's q and diversity measured by the percentage of women on the board and the percentage of the board that is an ethnic minority. First stage equations are not presented, only the final stage estimates. The first number in each cell is the regression coefficient and the second, in parentheses, is the standard error for the final stage estimates. Significance levels are for a two-tailed test. ***- Significant at .01 level. **- Significant at .05 level. *- Significant at .10 level.</p>				

TABLE 3
3SLS Estimation Results: The Relationship between Women on Important Board Committees and Financial Performance

	Endogenous Variables					
	q-ratio (equation 1)	% audit female (equation 2)	q-ratio (equation 1)	% comp. female (equation 2)	q-ratio (equation 1)	% nom. female (equation 2)
Intercept	1.311** (0.602)	-67.763 (63.898)	1.167*** (0.226)	-192.740 (168.811)	0.707*** (0.238)	46.227 (90.747)
Predetermined Variables						
Number of directors	-0.063* (0.038)	0.320 (0.289)	0.042 (0.009)	-0.701 (1.515)	0.007 (0.009)	0.337 (0.430)
CEO-Chair duality	-0.347** (0.152)	4.861 (3.082)	-0.145*** (0.049)	24.194** (10.996)	-0.170*** (0.049)	-7.751* (4.505)
Additional directorships	-0.261* (0.540)	1.840* (0.997)	-0.024 (0.064)	4.083 (5.736)	-0.018 (0.034)	-0.780 (1.478)
% independent directors	-0.014*** (0.005)	0.220** (0.108)	-0.006*** (0.002)	0.917** (0.367)	-0.002 (0.002)	-0.062 (0.157)
Total assets	-0.035 (0.055)	0.435 (0.665)	-0.025 (0.022)	4.118 (3.716)	0.024 (0.022)	1.216 (0.990)
Meeting attendance	0.011 (0.012)		-0.000 (0.002)		0.000 (0.004)	
% board ownership	0.016** (0.007)	-0.172** (0.084)	0.004** (0.002)	-0.649* (0.354)	0.005*** (0.002)	0.242** (0.123)
% of linked directors	0.007 (0.007)		-0.000 (0.001)		-0.000 (0.001)	
Return on assets	0.136*** (0.011)	-3.260 (2.586)	0.138*** (0.005)	-23.124*** (6.878)	0.144*** (0.005)	6.600* (3.716)
Age of board		0.643 (0.753)		-0.035 (1.904)		-0.257 (1.049)
Estimated Variables						
q-ratio		23.776 (18.655)		167.205*** (49.372)		-45.934* (26.819)
% female on each committee	0.138** (0.064)		0.006*** (0.001)		-0.021*** (0.001)	
Year Fixed Effect Dummy Variables						
1999	-0.326 (0.226)	2.690 (2.107)	-0.021 (0.070)	3.578 (11.988)	-0.006 (0.071)	-0.269 (3.118)
2000	-0.239 (0.200)	2.104 (2.065)	-0.027 (0.069)	4.532 (11.766)	0.000 (0.069)	-0.002 (3.066)
2001	-0.255 (0.197)	2.811 (2.315)	-0.065 (0.070)	10.835 (12.135)	-0.011 (0.070)	-0.462 (3.408)
2002	-0.480** (0.238)	5.739* (3.281)	-0.145** (0.070)	24.295* (13.618)	-0.063 (0.070)	-2.840 (4.761)
Industry Fixed Effect Dummy Variables						
D2	-2.022** (0.821)	25.641* (13.837)	-0.606*** (0.213)	101.282** (48.612)	-0.589*** (0.213)	-27.059 (20.043)

D3	0.120 (0.277)	-8.540 (9.016)	0.473*** (0.088)	-79.070*** (27.285)	0.449*** (0.088)	20.397 (13.026)
D4	-0.393 (0.326)	2.359 (3.064)	0.048 (0.104)	-7.991 (17.556)	-0.019 (0.104)	-0.972 (4.555)
D5	-0.962 (0.615)	7.771 (5.367)	-0.065 (0.180)	10.895 (30.647)	-0.002 (0.181)	-0.056 (7.980)
D6	-0.364 (0.382)	0.045 (4.437)	0.180 (0.111)	-30.124 (20.399)	0.226** (0.111)	10.022 (6.474)
D7	-0.255 (0.262)	7.058 (6.614)	-0.266*** (0.105)	44.354* (23.598)	-0.377*** (0.106)	-17.800* (9.576)
D8	-0.959*** (0.281)	-18.936 (14.022)	0.823*** (0.109)	-137.649*** (40.617)	0.788*** (0.110)	35.600* (20.181)
System Weighted MSE	0.853		31.926		3.447	
df	4,075		4,075		4,073	
System Weighted R ²	0.271		0.500		0.518	
<p>Note. - Estimation of Equations 1 and 2: $q_{i,t} = \beta_0 + \beta_1 d_{i,t} + \beta_2 r_{i,t-1} + \beta_3 w_{i,t-1} + \beta_n \Gamma_{i,t-1} + \beta_m \Phi_{i,t} + \beta_p \Omega_{i,t} + e_{i,t}$ $d_{i,t} = \gamma_0 + \gamma_1 q_{i,t} + \gamma_2 r_{i,t-1} + \gamma_3 w_{i,t-1} + \gamma_j X_{i,t-1} + \gamma_u \Phi_{i,t} + \gamma_v \Omega_{i,t} + \varepsilon_{i,t}$</p> <p>This table presents the results for the 3SLS solutions to the simultaneous equations 1 and 2 hypothesized to explain the relationship between firm performance as measured by Tobin's q and the percentage of women on the audit committee, compensation committee, and nomination committee. The first number in each cell is the regression coefficient and the second in parentheses is the standard error. First stage equations are not presented, only the final stage estimates. The asterisks next to the regression coefficients indicate the significance level for a two-tailed test. Sample includes 2000 firm-years for 1998-2002. *** Significant at the .01 level. ** Significant at the .05 level. *Significance at the .10 level.</p>						

TABLE 4
3SLS Estimation Results: The Relationship between Ethnic Minorities on Important Board Committees and Financial Performance

	Endogenous Variables					
	q-ratio (equation 1)	% audit minority (equation 2)	q-ratio (equation 1)	% comp. minority (equation 2)	q-ratio (equation 1)	% nom. minority (equation 2)
Intercept	1.796*** (0.602)	61.618 (42.590)	1.168*** (0.370)	-145.520 (224.883)	1.825*** (0.396)	-35.181 (58.267)
Predetermined Variables						
Number of directors	0.004 (0.018)	0.595* (0.364)	0.022 (0.014)	-2.536 (2.082)	0.017 (0.014)	-0.354 (0.518)
CEO-Chair duality	-0.198** (0.100)	0.232 (2.338)	-0.175** (0.080)	19.716 (13.289)	-0.187** (0.080)	4.585 (3.328)
Additional directorships	-0.151* (0.540)	3.414*** (0.922)	-0.020 (0.050)	2.215 (5.436)	-0.094* (0.051)	2.733** (1.310)
% independent directors	-0.015*** (0.005)	-0.046 (0.159)	-0.011*** (0.003)	1.253 (0.888)	-0.015*** (0.003)	0.367 (0.227)
Total assets	-0.037 (0.043)	1.092* (0.580)	-0.016 (0.031)	1.768 (3.421)	-0.046 (0.031)	1.452* (0.826)
Meeting attendance	-0.014* (0.008)		-0.000 (0.006)		-0.002 (0.003)	
% board ownership	0.002 (0.007)	0.096 (0.077)	0.003** (0.003)	-0.343 (0.446)	0.002 (0.003)	-0.024 (0.110)
% of linked directors	-0.002 (0.006)		-0.000 (0.001)		0.001 (0.003)	
Return on assets	0.135*** (0.011)	1.700 (1.941)	0.147*** (0.007)	-16.657 (10.771)	0.149*** (0.007)	-3.344 (2.766)
Age of board		-1.155** (0.503)		0.238 (2.501)		-0.222 (0.660)
Estimated Variables						
q-ratio		-9.893 (13.270)		113.601 (73.573)		22.385 (18.901)
% minority on each committee	0.042** (0.019)		0.009*** (0.001)		0.033*** (0.001)	
Year Fixed Effect Dummy Variables						
1999	-0.096 (0.138)	2.041 (2.021)	-0.051 (0.110)	5.623 (11.943)	-0.115 (0.111)	3.399 (2.877)
2000	-0.217 (0.134)	0.789 (2.613)	-0.155 (0.107)	17.456 (14.973)	-0.245** (0.107)	6.373* (3.706)
2001	-0.262** (0.136)	-1.352 (3.653)	-0.244 (0.112)	27.646 (20.610)	-0.325*** (0.112)	8.042 (5.183)
2002	-0.305** (0.137)	-2.443 (4.382)	-0.314*** (0.113)	35.600 (24.576)	-0.457*** (0.113)	11.536* (6.218)
Industry Fixed Effect Dummy Variables						
D2	0.034 (0.424)	-0.071 (6.347)	-0.065 (0.349)	7.084 (37.474)	-0.187 (0.349)	5.831 (9.025)

D3	0.691*** (0.188)	9.862 (10.585)	0.739*** (0.150)	-84.115 (58.905)	0.630*** (0.150)	-12.921 (15.065)
D4	-0.076 (0.252)	10.776** (6.862)	0.203 (0.167)	-23.336 (26.122)	0.077 (0.167)	-0.343 (6.514)
D5	0.368 (0.431)	-1.056 (6.862)	0.056 (0.348)	-7.236 (40.168)	-0.004 (0.349)	1.851 (9.757)
D6	-0.073 (0.332)	16.410*** (6.625)	0.375** (0.188)	-42.827 (37.372)	0.158 (0.189)	-1.300 (9.429)
D7	-0.071 (0.215)	-2.677 (3.769)	-0.106 (0.177)	12.251 (21.856)	-0.137 (0.177)	3.159 (5.350)
D8	0.874*** (0.257)	14.049 (14.074)	1.039*** (0.198)	-117.907 (78.342)	0.983*** (0.198)	-21.569 (20.042)
System Weighted MSE	0.708		22.766		1.995	
df	1,701		1,699		1,699	
System Weighted R ²	0.377		0.534		0.548	
<p>Note.-</p> <p>Estimation of Equations 1 and 2: $q_{i,t} = \beta_0 + \beta_1 d_{i,t} + \beta_2 r_{i,t-1} + \beta_3 w_{i,t-1} + \beta_n \Gamma_{i,t-1} + \beta_m \Phi_{i,t} + \beta_p \Omega_{i,t} + e_{i,t}$ $d_{i,t} = \gamma_0 + \gamma_1 q_{i,t} + \gamma_2 r_{i,t-1} + \gamma_3 w_{i,t-1} + \gamma_j X_{i,t-1} + \gamma_u \Phi_{i,t} + \gamma_v \Omega_{i,t} + \varepsilon_{i,t}$</p> <p>This table presents the results for the 3SLS solutions to the simultaneous equations 1 and 2 hypothesized to explain the relationship between firm performance as measured by Tobin's q and the percentage of ethnic minorities on the audit committee, compensation committee, and nomination committee. The first number in each cell is the regression coefficient and the second in parentheses is the standard error. First stage equations are not presented, only the final stage estimates. The asterisks next to the regression coefficients indicate the significance level for a two-tailed test. Sample includes 800 firm-years for 1998-2002. *** Significant at the .01 level. ** Significant at the .05 level. *Significance at the .10 level.</p>						