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"Affiliated Directors:
Puppets of Management or Effective Directors?"

April Klein

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by

April Klein*

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*Leonard N. Stern School of Business
New York University
40 West 4th Street
New York, N.Y. 10012
aklein@stern.nyu.edu
(212) 998 - 0014

Abstract

This paper examines four non-mutually-exclusive hypotheses behind the inclusion of different types of directors and the impact they have on firm performance. Strong associations are found between the specific economic needs of companies and the incidence of directors most likely to fulfill these needs. In particular, theoretical and empirical evidence is presented that most affiliated directors are not puppets of management, but are placed on boards to serve specific, strategic needs of firms. In addition, no systematic relation is found between various measures of performance and director type. In total, it appears that, on average, boards of directors are constructed in a rational manner.

Affiliated Directors: Puppets of Management or Effective Directors?

I. Introduction

This paper investigates the economic and environmental factors that determine who sits on the board of directors of large U.S. corporations. It also examines whether differences in board composition are related to firm performance. Many have studied these issues by examining the extent to which outside (independent) directors mitigate the agency control problems between upper management and the company's shareholders. Generally, these studies find that in "crises" situations, outside directors intervene in ways consistent with shareholder interests (Romano (1996)).[1] The role of the outside director in all scenarios is that of the unbiased monitor.

However, boards of large U.S. companies have, on average, only 58% outside, directors (Klein (1998)). The remaining 42% are inside directors (officers of the company) and affiliated directors such as ex-CEOs, family members, directors with board interlocks, and professionals with "significant" business or financial ties with the firm.[2] Put differently, 99% of all firms listed on the S&P 500 have at least one inside director and 85% have at least one affiliated director (Klein (1998)). These numbers suggest that either management controls the board selection process (Berle and Means (1932), Mace (1986) and Jensen (1993)) or there are economic reasons behind firms' inclusion of non-

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[1] For example, see Brickley, Coles and Terry (1994), Byrd and Hickman (1992), Kosnik (1987), Rosenstein and Wyatt (1990) and Weisbach (1988).

[2] "Significant" business transactions are defined by Items 404(a) and 404(b) of Regulation S-K of the 1934 Securities and Exchange Act. Item 404(a) specifies a threshold of $60,000 for a transaction to be considered significant. Item 404(b) defines "certain business relationships" to include significant payments to the firm in return for services or property, significant indebtedness by the firm, outside legal counseling, investment banking, consulting fees and other joint ventures.

independent directors.

The purpose of this paper is to examine these issues. Unlike previous studies, I first classify directors generally into insiders, outsiders, and, affiliates, and then go deeper into board structure by classifying directors according to their occupations or their relation with the CEO. For each set of classification, I propose and test four non-mutually exclusive hypotheses.

The first hypothesis is that the CEO controls the board selection process, thereby placing "friendly faces" on the board. I call this the "CEO hegemony" hypothesis. If this hypothesis is true, then the incidence of management-friendly directors should be related directly to CEO control and firm performance should be negatively related to the percentage of management-friendly directors on the board.[3]

The next three hypotheses are placed under the umbrella of what I call the "economic needs" hypothesis. Under this hypothesis, firms include board members in direct proportion to the expertise they (or their place of employment) bring to the table. Three economic needs are identified: external monitoring (Fama and Jensen (1983)), information collection, processing and transfer of information (Coase (1937), Williamson (1975), Demsetz (1991)) and linkages between the firm and its external environments (Pfeffer and Selancik (1978)). If the economics needs hypothesis is true, then there should be a positive relation between the incidence of the type of director that best provides these services and the degree of services needed by the firm. There should also be a non-negative relation between the percentage of these types of directors and firm performance.

Using various statistical methodologies, I find positive associations between the

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[3] If all firms, however, have an equal amount of CEO-domination, there will be no relation among CEO control, the incidence of management-friendly directors and firm performance.

incidence of directors and the economic needs of the firm. In contrast, I find little evidence supporting the CEO hegemony theory with respect to affiliated directors. In fact, the results suggest that firms place affiliated directors on their boards to serve the specific, strategic needs of firms. One major exception is relatives of CEOs who most frequently are found on boards in which the CEO exerts a large amount of control over the nominating process. In addition, I find little systematic relation between various measures of firm performance and director-type. The findings hold for all types of affiliated and outside board members. In total, the evidence reported in this paper supports the hypothesis that boards, on average, are constructed in a rational manner.

Section II briefly discusses the benefits and costs of using the board as an internal corporate governance mechanism. Section III describes the data. Section IV describes the various director-types used throughout the study. Section V presents the hypotheses empirical specifications, and empirical results for the "generic" model, i.e., classifying directors as insiders, outsiders and affiliates. Section VI expands upon the results by fine-tuning director classification and hypotheses by specific director-types, e.g., attorney, ex-military officer, etc. Section VII presents the hypotheses and empirical results surrounding the association between firm performance and director-type. Concluding remarks are contained in Section VIII.

II. Boards of Directors: Benefits and Costs

By state statute, boards of directors, voted in by the firm's shareholders, manage all U.S. corporations.[4] Boards of directors are internal governance mechanisms; their fiduciary responsibilities are strictly to the shareholder. For large, U.S. firms, boards exercise dual roles. They monitor the overall actions of management and oversee the company's long range strategic investment and financing decisions (Fama and Jensen (1983)).

Boards of directors are relatively inexpensive; the average S&P 500 firm pays a total of $700,000 a year in fees to its directors.[5] Other expenses, such as the present value of future retirement payments, stock options and board meeting expenses are minuscule when compared to the overall compensation paid to the firm's management or to the firm's overall expenses for the year. Therefore, if constructed "correctly", a firm's board of directors can add value to its shareholders at a relatively low cost.

III. Data Used in the Study

The sample consists of all U.S. firms listed on the S&P 500 as of March 31, 1992 and 1993 with annual shareholder meetings between July 1, 1991 and June 30, 1993. Hard copies of the proxy statements, 10-K filings and annual reports were received from over 400 firms each year; the LEXIS-NEXIS services of Mead Data Central provided information for most of the remaining firms. Due to their unique financial and capital structures, banks are

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[4] For example, see the Revised Business Corporation Act (RMBCA) §8.01, the Delaware General Corporate Law §141 and the New York Corporate Law §701.

[5] This consists of the annual directors' fees plus the total meeting fees plus any fees paid for committee membership, attendance or chairmanships.

excluded.

Rule 14a-3(8) of the Securities Exchange Act of 1934 requires proxy statements associated with the election of directors to furnish information about all current directors and nominees. As articulated in Schedule 14A, firms must disclose each director's name, business experience during the last five years, other current directorships, family relationships between any director, nominee or executive officer, significant current or proposed transactions with management, "certain business relationships" with the firm, and current shareholdings of the firm.

All financial data are from Compustat. All returns data are from CRSP. Excluding firms with missing data resulted in a final sample consisting of 442 of the original S&P 500 firms for 1992 and 449 for 1993.

IV. Classification of Directors

Directors are classified according to their relation with the firm. Inside directors, typically the CEO, President or a Vice President, are employed presently by the firm. Outside directors have no affiliation with the firm beyond being members of the firm's board. Affiliated directors are former employees, relatives of the CEO or have significant transactions and/or business relationships with the firm as defined by Items 404(a) and (b) of Regulation S-X.[6] Directors on interlocking boards also are defined as affiliates. Consistent with Item 402(j)(3)(ii), interlocks are defined as those situations in which an inside director serves on a non-inside director's board.

For the two-year sample, 22.7% of the directors are insiders, 58.1% are outsiders

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[6] See footnote 2 for definitions of significant transactions and business relationships.

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and 19.2% are affiliates. The trend towards outsiders and affiliates and away from insiders can be seen from the data. The percentage of insiders for the 1992 firms was 23.5%; for 1993 it was 21.6%. Corresponding percentages for outside directors were 57.7% for 1992 and 58.5% for 1993.

As shown in Table 1, the majority of boards have at least one active CEO of another S&P 500 firm (53.3%), one active CEO of a non-S&P 500 firm (65.7%), an academic (57.5%) and/or a former employee of the firm (51.5%) on their board. Over one-third of the firms' boards have at least one attorney (41.4%), outside consultant (33.6%) or private investor (39.4%). For the occupations, most directors are outsiders. The one exception is attorneys; 26.1% of all boards have an attorney-director with affiliations to the firm; 18.5% of all boards have an attorney-director with no ties to the firm. Other frequent affiliated occupations are investment banker (12.4%), active CEO of S&P 500 (14.1%) or non-S&P 500 (13.6%). Relatively few academics or consultants have significant ties to the firm.

V. Determinants of Board Composition: Insiders, Outsiders and Affiliates

I propose and test empirically two hypotheses: the **CEO-hegemony** hypothesis and the **economic needs** hypothesis. In this section, board members are classified generically as insiders, outsiders, or affiliates. In the next section, I present the same hypotheses but break down board composition into types of director, for example, attorney, banker, and ex-politician.

A. Hypotheses and Empirical Measures

CEO-hegemony Hypothesis. Under the CEO-hegemony hypothesis, CEOs want to place management-friendly directors on the board. Their ability to do so, however, depends on their power over the board-selection process. Berle and Means (1932), Mace (1986) and Jensen (1993) are examples of academics who claim that CEOs have "the power to control the board" (Jensen, 1983, p. 863) but do not provide widespread evidence of this phenomenon.[7]

The alternative CEO-hegemony hypothesis predicts a positive (negative) relation between the degree of control the CEO has over the director nominating process and the incidence of management-friendly (unfriendly) directors.

Consistent with prior literature, outside directors are assumed to be relatively independent of management and are deemed to be less supportive of CEO. Inside directors are employees of the firm and are considered to be management-friendly. Relatives also are considered to be management-friendly. Other affiliated directors may or may not be supportive of management. The key determinant is the interpretation of the role that financial ties play between the director and the firm. If financial ties make the affiliated director beholden to management, then the incidence of affiliated directors on the board will be directly related to CEO-hegemony over the board selection process. If financial ties are not side payments between the firm and the director for the director's acquiescence to the CEO, then there will be a zero or negative relation between the percentage of affiliated directors and CEO-control. Thus, the relation between the incidence of affiliated directors

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[7] Berle and Means claim that "if one can determine who does actually have the power to select the directors, one has located the group of individuals who for practical purposes may be regarded as 'the control' (pp. 66-67). They then claim without evidence that "management controls the proxy system and therefore effectively controls the company." It should be noted that Berle and Means wrote their book prior to the Securities Exchange Act of 1934 which contains statutes (§ 14) and interpretive rules regulating the proxy system. Mace (1986) claims that "as was the case ten years ago, C.E.O.'s still control board membership." (p. vii.).

and CEO hegemony is an empirical question.

Two measures of the degree of CEO domination over the board are considered. The first is a dummy variable equal to one if the CEO sits on the board's nominating committee or if there is no sitting nominating committee (in which case the board as a whole acts as a nominating committee) and zero otherwise.[8] Klein (1998) provides evidence on the efficacy of this classification.[9] The second is the amount of time the CEO has been on the board, with longer tenures being indicative of more CEO control (Hermalin and Weisbach (1996)).[10,11]

Economic Needs Hypothesis. Under the economic needs hypothesis, directors are placed on the board in direct proportion to how they can fill the economic needs of the company. This hypothesis is less straightforward than the CEO-hegemony hypothesis in that I must identify the specific economic needs of firms and then properly match directors whose expertise or business connections most closely coincide with these needs.

The economic literature on the interplay between internal governance structures and

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[8] In all but one case, the CEO sits on the firm's board.

[9] Klein shows that boards in which the CEO has power over the nominating process have significantly lower percentages of outside directors on their audit, compensation and nomination committees.

[10] There are several reasons for including the CEO's tenure as a proxy for CEO control. First, the longer the CEO is on the board the more opportunities he has had to influence the selection of friendly directors. Second, Klein and Rosenfeld (1988) and Warner, Watts and Wruck (1988) provide empirical evidence that CEO involuntary-turnover rates are related to poor prior performance. Conversely, CEOs of better performing companies will be valued highly by the firm's shareholders, who want them to remain as head of their companies. Hermalin and Weisbach (1996) conjecture that this may give the CEO more bargaining power with the board over the nominating process, thereby giving the CEO more control over the board itself.

[11] A third measure, a dummy variable equal to one if the Chairman of the Board and the CEO are the same person, and zero otherwise (Ittner, Larcker and Rajan (1997)) was considered but later rejected. Brickley, Coles and Jarrell (1997) and Klein (1988) find no empirical evidence to suggest that this variable be related positively to CEO hegemony. Ittner, Larcker and Rajan, using a similar multivariate model to this paper, find a contradictory result using this variable in their definition of CEOPOWER. Examination of the data in this study reveals no connection between CEO domination and this variable.

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the economic requirements of the firm is vast. Coase (1937) contends that the firm exists as a means to economize on transaction costs. The firm turns to in-house production (or contracting) if its in-house transaction costs are less than those incurred through purchases across external markets. Symmetrically, the firm contracts outside if external transaction costs are less than those incurred internally. A key point emphasized by Coase is that the costs of carrying out exchange transactions vary considerably across firms. Coase lists several factors, such as firm size, degree of uncertainty and imperfect competition, as determinants of the firm's overall transaction costs that, in turn, influence the firm's decision to contract internally and/or externally. I call these (and other) factors the economic needs of the firm and propose that one way firms choose to minimize their associated costs is by transacting internally through their boards of directors.

Three economic needs and their associated transaction costs are identified. They are external monitoring (agency costs), information needs (costs of acquiring, processing and using information) and resource dependencies (costs of co-opting or adapting to external environments).

Agency Costs. In a world of zero transaction costs, including no agency costs, boards would be comprised solely of inside managers. Agency problems between shareholders and managers necessitate the implementation of costly contracts, compensation plans and monitoring schemes of inside managers. Agency costs are particularly high for large open firms where the separation between ownership and control is pronounced (Berle and Means (1932)). One monitoring scheme is for shareholders to elect outside directors as board members (Fama and Jensen (1983)). Agency problems also exist between shareholders and more senior claimants on the firm's assets. Creditors, the

government and employees, for example, would like to be paid in full and on time. They too may want outside directors in place to insure that shareholders do not expropriate their wealth through changes in company by-laws, charter amendments, dividend distributions or other means.

Agency theory, therefore, predicts that boards of large companies will contain outside directors. The NYSE, ASE and the NASDAQ mandate the inclusion of at least two outside directors on its member's boards, thus explicitly recognizing the monitoring benefits to its constituencies, the firms' shareholders. Prior to these listing requirements, almost all large U.S. firms included outside directors, suggesting a market demand for their monitoring services.

The alternative hypothesis under the economics need hypothesis (with respect to agency costs) is a positive (negative) relation between the firm's agency costs and the percentage of outsiders (insiders) on its board. No predictions are made for affiliated directors.

There are no direct measures of agency costs. One possible, but incomplete, proxy is past firm performance, with poorer past performance representing higher agency costs between shareholders and management (Hermalin and Weisbach (1988)) or between shareholders and debtholders (Stulz (1990) and Lang, Ofek and Stulz (1996)). Several measures of firm performance are considered. The accounting measure is past ROA, defined as net income before extraordinary items plus the after-tax interest expense over the total book assets of the firm.[12] The market-based measure is past beta-and-market-adjusted returns. A third measure is the lagged ratio of total firm value to total assets-in-

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[12] The numerator (accounting return) and the denominator (accounting assets) are three-year sums ending one full fiscal year prior to the fiscal year on the latest financial statement.

place, representing the firm's past investment opportunity set (Smith and Watts (1992) and Gaver and Gaver (1993)). [13]

Information Needs. Economic organizations, including the firm, must reflect the fact that knowledge is costly to produce, maintain and use (Demsetz (1991) p.171). The degree and type of knowledge differs according to the needs of the firm. Williamson (1975) attributes two environmental factors as major determinants of a firm's need for specialized (idiosyncratic) information: uncertainty and complexity. He argues that firms create simple, hierarchical internal governance strategies in response to their needs to obtain unbiased, expert information. Under his analysis, boards of directors serve as centers by which firms can collect, process, and transmit vital information throughout the firm. The advantages he cites to using internal structures (over market contracts) are flexibility in responding to changes, accountability among parties, and trust among parties not to use adverse information to harm each other.[14] Arrow (1975), Helfat and Teece (1987), Nelson and Winter (1982), Demsetz (1991), and Pearce and Zahra (1992), using different sets of arguments, come to similar conclusions.

The alternative hypothesis under the economics need hypothesis (with respect to knowledge) is that board composition differs systematically with the degree of environmental uncertainty and firm complexity.

Three possible proxies for firm uncertainty and/or complexity are considered. The

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[13] Following Smith and Watts, total firm value is book value of liabilities plus market value of equity. Assets-in-place is the book value of assets. Three-year lagged values are used.

[14] Williamson uses the concepts of "bounded rationality" throughout his analysis. Bounded rationality refers to "human behavior that is intendedly rational, but only limited so" (p. 21, citing Herbert Simon). Because managers are bounded rationally, they cannot specify all decision trees in advance and therefore "approximations must replace exactness in reaching a decision." (p. 23). Uncertainty and complexity exacerbate the problem by increasing the number of branches and twigs of each decision tree.

first is firm size, measured as the natural log of the book value of the firm's assets. It is hypothesized that larger firms tend to be more complex. The second is the beta of the firm's equity. Beta is the 120-day beta coefficient prior to the annual shareholder meeting date using a market-model estimation regression. High-risk firms are deemed to be more uncertain (Helfat and Teece (1987)).

The third measure is technological uncertainty, measured by the firm's three-year average of R&D expenditures over the book value of assets. Teece, Rumelt, Dosi and Winter (1994) examine the relation between technological uncertainty and the boundaries of the firm and propose that technological firms set up internal mechanisms "for the timely capture of performance feedback so that success and failures become identified and provide the foundation of learning experiences" (p. 16). Poppo and Zenger (1997) make similar predictions with respect to the firm's make-or-buy decision. The use of R&D expenditures as a surrogate for technological uncertainty is consistent with the Financial Accounting Statements Board's (FASB) approach that promulgates that R&D expenditures be expensed rather capitalized. The basis for their decision is that "[t]here is normally a high degree of <u>uncertainty</u> about the future benefits of individual research and development projects..." (my underline, FAS2, paragraph 39).

Under the information needs hypothesis, the likelihood of the board recruiting members with specific knowledge increases with the uncertainty and/or complexity of the firm. Inside directors have firm-specific knowledge (Fama and Jensen (1983) and Klein (1998)), implying a positive relation between the percentage of insiders and the firm's information needs. Clear predictions on the percentages of outside and affiliated directors and firm uncertainty are less compelling, and thus become an empirical question. If outside

directors are recruited strictly for monitoring purposes, then a zero or negative relation is predicted. If they are included for their expertise on specific areas, then a positive association will be seen. Affiliated directors have ties with the firm. If these ties facilitate a more effective transfer of information between firm and director (or the director's place of employment), then a positive relation is posited. Otherwise a zero or negative association will be seen.

Linkages between the Firm and its External Environments: Resource Dependencies. Pfeffer and Salancik (1978) define "resource dependencies" as the firm's need to construct internal organizations towards managing or strategically adapting to its external environments. Since firms are not internally self-sufficient, they must find ways to optimally contract needed resources with outside parties who, in turn, depend on the firm for their revenues. This interdependency "leads to the development of interorganizational influence attempts" (Pfeffer: p. 193 (1982)). One such attempt may be financial ties between the firm and its external board of directors.

The alternative hypothesis under the economic needs hypothesis (with respect to resource dependencies) is a positive (negative) relation between the percentage of affiliated (inside) directors and the degree to which the firm depends on its external environment.

There are no direct measures for the degree of interdependence between firms and outside organizations. Four possible proxies are external financing (firm debt), firm-specific risk, firm size, and whether the firm is in a regulated industry, that is, a utility. Firm debt is defined as the three-year sum of all debt divided by the three-year sum of book

value of assets.[15] Firm-specific risk is negatively related to past performance and to firm size (both defined earlier) and positively associated with the standard deviation of the firm's five-year return on equity and with firm debt. Utilities is a dichotomous variable equal to one if the firm is a utility and zero otherwise.

Under the resource dependencies hypothesis, the percentage of affiliated (inside) directors is positively (negatively) related to the firm's debt-to-assets ratio, firm-specific risk, size and/or to the firm being a utility. No predictions are made for outside directors.

Control Variables. Three additional variables are included in the multivariate analysis. To control for substituting internal corporate governance mechanisms, I include the percentage of common equity held by all directors. As defined by Item 403(b) of Regulation S-K, %Director Shares includes all shares which the director has the power to vote or dispose of (including family holdings and trusts) and all options, warrants or rights exercisable within sixty days of the filing. I predict a positive (negative) relation between %Director Shares and the incidence of inside (outside) directors. To control for the fact that the Exchanges and NASDAQ require listed companies to have at least two outside directors, I include the natural log of the board size (Ln (Size of Board) as an additional variable. No predictions are made for this variable. Finally, to reflect the fluidity in board composition and the movement towards more independent boards, a dummy variable for the year 1992 is included in the analysis.

B. Empirical Specifications and Findings

Univariate Results. Table 2 presents the Pearson correlations between %Inside,

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[15] Subsets of firm debt, such as short and long-term debt are also used. The results are similar and are not reported.

%Outside, %Affiliates and each of the variables detailed in the previous section. Spearman correlations yield similar results and are not reported.

Many of the predictions made in the last section are supported by the univariate results. The percentage of outsiders (insiders) is negatively (positively) related at the .01 level to whether the CEO sits on the nominating committee and to the number of years the CEO has sat on the board. Thus, CEO hegemony is related to board composition. No significant correlations are found for the percentage of affiliates, suggesting no apparent relation between CEO hegemony and this variable.[16]

The percentage of outsiders (insiders) is significantly negatively (positively) associated with each measure of prior firm performance, supporting Hermalin and Weisbach's (1988) hypothesis that agency costs influence board composition. No relation is found for the affiliated director, with the exception of the lagged opportunity set which has a weak positive correlation (p=. 06).

The percentage of insiders is marginally positively correlated with the beta risk and the degree of R&D expenditures of the firm, lending weak support to the information needs hypothesis. Similarly, the percentage of outsiders (affiliates) is significantly negatively (positively) correlated to the firm's beta risk. However, the signs between board composition and Ln (Assets) are in the opposite direction than that predicted, suggesting that firm size may not be an appropriate proxy for firm complexity.

Finally, there is little empirical support for the resource dependencies argument which predicts a positive sign between %Affiliates and Debt/Assets, Utilities Std(ROE),

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[16] The correlations between whether the CEO and Chairman are the same (or not) and board composition is .15 for %Outsiders, .08 for %Insiders, and -.25 for %Affiliates, all significant at the .02 level or better. This suggests no consistent interpretation between this dichotomous variable and board composition.

and a negative sign between %Affiliates and the lagged performance variables. In fact, the resource dependencies role may be performed by outsiders, as evidenced by the significantly positive correlations between %Outsiders and Utilities, and Debt/Assets and the significantly negative correlation between %Outsiders and the lagged performance variables.

In summary, the univariate results suggest that, in general, board composition responds to information needs, monitoring needs, and is susceptible to the degree of domination that the CEO has over board selection. In contrast, little evidence is found (yet) that board composition is influenced by the firm's needs to influence its outside environment.

Multivariate Analysis: Empirical Specifications. The univariate results reported in the last section are suggestive at best, because of potential interactions among the variables and because the individual proxies discussed above are imperfectly measured. For example, although not reported, there is evidence of clustering among the variables as well as significant but smaller correlations among other variables.

To deal with these empirical issues, I use a principal components analysis to determine the underlying constructs. Principal components is a well-established econometric procedure (Kloek and Mennes (1960) and Aigner, Hsiao, Kapteyn, and Wansbeek (1984)) designed to take into account the fact that the underlying constructs are noisy proxies of the "true" indices.[17] It reduces the dimensionality of the explanatory

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[17] To paraphrase Goldberger (1972), it is "just a generalization of the classical errors-in-the-variables model" p.992).

variables into a smaller number of distinct, linear factors, which, in principle, maximize the explanatory power of the proxies. Principal components is a useful econometric tool when more than one variable is considered to be a possible proxy for any individual factor (e.g., CEO hegemony is comprised of CEO tenure and CEO being on the Nominating Committee) or when one variable may contribute to more than one underlying construct (e.g., Ln(Assets)).

Five factors with eigenvalues greater than one were obtained preserving 68% of the total variance of the data. Appendix A contains the standardized scoring coefficients for the five factors. Generally, the signs and magnitudes of the estimated loadings are consistent with my *a priori* selection of proxies.[18] One major exception is Utilities, which does not load onto the resource dependencies factor (coefficient = -.00); instead it loads negatively onto information needs (coefficient = -.51). In addition, whereas lagged abnormal returns loads substantially onto firm-specific risk (coefficient = -.23), lagged ROA and lagged opportunity have smaller and positive coefficients.[19]

I use ordinary least squares regression equations to examine the relation between

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[18]A closer examination of the factor patterns revealed that each of the eleven original variables loads substantially onto at least one factor.

[19]Principal components is a form of factor analysis. As Brown (1989) explains, the principal components procedure has many advantages over other factor analysis techniques including conceptually simpler estimators and a unique factor structure. However, these advantages come at the cost of having certain restrictions placed on the observed covariance matrix of data. To examine the sensitivity of some of these restrictions, several sequential tests were performed. First, to determine the sensitivity of the assumption that the factors are orthogonal, the factors were also rotated obliquely using the SAS Promax option; the factor solutions and the resulting regression results were very similar to the original specification. Second, principal components assumes that the communalities of each variable is equal to one. Using the SAS SMC (squared multiple correlation) option, I allowed each individual variable to have different communalities. Again, the factor loadings and the resulting regression results with the newly scored factors were similar to those reported in this paper. The one exception is the Resource Dependencies construct that appears to be more sensitive to this assumption. Third, I used an unrestricted least squares (ULS) estimation method as an alternative method to obtain the factor loadings. The solutions with ULS are similar to those using the original principal components. Again, the Resource Dependencies factor appears to be more sensitive. Finally, to check the sample sensitivity of the factors, I estimated separately the coefficients for each year and for random subsets of data. The factors and their coefficients appear to be robust to sample selection.

the percentage of insiders, outsiders and affiliated directors and the five factors calculated in Appendix A.[20] I measure the percentage of director-type on the board by applying a logistic transformation to these percentages using the formula $\ln((\text{pct.}/1-\text{pct.})+1)$. The transformation converts an otherwise bounded dependent variable into an unbounded one. Adding one to the percentage allows firms to have zero types of directors on the board.

As a caveat, not all of the restrictions of the original principal components model may be appropriate for this set of data. Therefore, interpretations of the estimates and the coefficients produced in the regression analyses should be made with caution.

Multivariate Analysis: Empirical Results. Table 3 contains evidence in support of the CEO-hegemony, agency costs, and information needs hypotheses. Weaker support is found for the resource dependencies hypothesis.

CEO Hegemony, as predicted, is negatively (positively) related to the percentage of outsiders (insiders) on the board. Both coefficients are economically and statistically significant ($p<.01$ level). In contrast, no economically or statistically significant relation is found between CEO Hegemony and %Affiliates. This result suggests that the likelihood of having affiliated members on the board is **unrelated** to how much influence the CEO has over the board.

The coefficient on External Monitoring, as predicted, is economically and statistically significantly negative for the regression on the percentage of outsiders and significantly positive for the regression on the percentage of insiders on the board. This is

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[20]Other recent papers using factor analyses or principal component factors as inputs to a multiple regression are Titman and Wessels (1988), Ittner, Larcker and Rajan (1997) and Callen, Fader and Krinsky (1997).

consistent with the premise that firms place unbiased monitors on boards in accordance to their external monitoring needs.

The coefficient on Information Needs, as predicted, is significantly positive (p<.10) for the regression on the percentages of insiders. This finding supports those of Klein (1998) who finds evidence that inside directors increase firm performance if used for their expertise on firm-specific investment decisions. Although no predictions were made for the other two classifications, both produce a statistically significant coefficient on Information Needs.

The negative coefficient for the regression on %Outsiders suggests that boards, on average, do not use outsiders for their idiosyncratic expertise. The positive coefficient for the regression on %Affiliates suggests that, on average, ties between firm and director may facilitate the efficient transfer of information. Finer analyses of these empirical findings are presented in the next section.

The evidence on the validity of the resource dependencies theory is mixed. As predicted, the coefficient on Resource Dependencies is negative (p<.05) for the regression on %Insiders at the 5% levels and the coefficient on Firm-Specific Risk is positive (p<.05) for the regression on %Affiliates. However, the coefficient on Resource Dependencies and Firm-Specific Risk is not significantly different from zero for the regressions on %Affiliates and %Insiders, respectively. One explanation for these mixed results may be that resource dependencies differ across firms. Thus, classifying directors broadly may not capture adequately the true relation between a firm's resource dependencies needs and director-types most able to meet these needs. I deal with this issue in the next section.

In summary, despite the generic classifications of the board members, many of the

proposed hypotheses are borne out by the data. First, seven of the ten predicted variables

are statistically significant at the .10 level or better. Second, nine of the ten expected signs

of the predicted variables are in the correct direction. Third, the F-values of the three

regressions are significant at the .01 level; the adjusted R^2 for the regressions on

%Outsiders and %Insiders are .12 and .14, respectively.

Empirical Results: Sensitivity Tests. To examine the sensitivity of the results reported in

Table 3 to using a principal components methodology, I use a more "traditional" regression

approach, using each proxy as a separate regressor. The advantage of this approach is that

it allows the reader to see the contribution of each variable to the results reported above.[21]

The disadvantages are those stated above.

Table 4 presents the empirical results. The empirical results are similar to those

reported in Table 3. In fact, in some ways, the results are stronger statistically using a more

traditional OLS methodology - for example, the R^2 coefficients for the regressions on

%Outsiders and %Insiders are higher in Table 4 than in Table 3. More importantly, in

economic terms, the coefficients shown in Table 4 corroborate those reported in Table 3.

Thus, the underlying interpretations are robust to various statistical methods.

VI. Determinants of Board Composition: Specific Types of Directors

A. Hypotheses

Thus far, board composition has been segmented generically into insiders, outsiders

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[21]Due to multicollinearity problems among closely related proxies, I had to exclude three of the eleven independent variables.   The excluded variables are CEO on Nominating Committee (highly correlated to CEO tenure), Lagged Returns, and Lagged Opportunity Set (the latter two highly correlated to each other and to Lagged ROA).

and affiliates. While this decomposition is useful and easy to determine objectively, it has its limitations. First, there is a great deal of dispersion among the occupations and expertise of both outside and affiliated directors. If firms recruit board members according to the company's specific economic needs, then lumping directors into broad classifications will result in overly generalized tests linking director qualifications to firm attributes. This problem is particularly acute for the information and resource dependencies hypotheses which predict that boards are comprised of directors most able to deal with idiosyncratic issues. Second, there is some dispersion in the degree of personal interests between non-inside directors and management, making the tests of the CEO hegemony hypothesis somewhat hazy. For example, relatives of the CEO, most likely, are more sympathetic to the CEO's wishes than affiliated commercial bankers may be.

In this section, I propose and empirically test specific hypotheses about the inclusion of specific non-inside director-types. The basic difference between these tests and those reported above is that the hypotheses will be framed according to the director's occupation or relation to the CEO instead of his (her) being an outsider or an affiliated director.

CEO-Hegemony: Relatives of the CEO. In their paper on board monitoring, Hermalin and Weisbach (1996) state that "a board packed with the CEO's relatives is likely to be less effective..." (p. 2). This statement reflects the sentiment that relative-directors are inclined to be sympathetic to the CEO's decisions, thereby resulting in less monitoring of his actions. The parallel conjecture is that the CEO prefers to place his relatives on the board. Thus, a positive relation is predicted between CEO hegemony and the inclusion of

the CEO's relatives on the board.

Information Needs and Costs.

Attorneys.   Attorneys are skillful at negotiating and are knowledgeable about law and legal environments. One external environment in which their abilities might be useful is when the firm is in a regulated industry, for example, a utility. A second environment in which these talents might be useful is in the software industry, which has a high rate of litigation.[22]   Similarly, firms experiencing high firm-specific (default) risk may also seek legal advice. Thus, a positive relation is predicted between having attorneys on the board and the firm being a utility (Utilities), the firm being in the software industry (Software) and Firm-Specific Risk.

Since the results reported in Tables 2-4 suggest that the information needs hypothesis may be more applicable for affiliated directors than for outside directors, I separately estimate regressions for each group of attorney-directors. The testable hypothesis is that frequent interactions between firm and attorney-directors facilitate better collection, processing and transfer of information between both parties.[23]

Academics.   Academics include university or college presidents, deans, and professors.   Their expertise is idiosyncratic knowledge.   Therefore, I predict a positive relation between Information Needs and having academics on the board. Since many of the academic-directors are in the medical field, I also expect to see a positive relation between

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[22] Kaznik and Lev (1995) and Dunbar (1992) show that firms in high-tech industries are sued more frequently than other companies. Software is considered to be a high-tech industry.

[23] An alternate point of view is that all professionals, that is attorneys, investment bankers, and commercial bankers are affiliated directors and therefore, the regressions should be estimated for all attorneys only. The empirical data, however, does not substantiate this view. I find subtle but marked differences between many of the affiliated and non-affiliated professional directors.

having academics on the board and the firm being in the pharmaceutical industry (Drugs).

Resource Dependencies and Information Needs: The Director's Prior Employment.

Ex-Politicians.   Current politicians are barred from serving on public boards of directors. Ex-politicians' expertise is the world of politics. Because they know current members of political institutions, they can establish linkages between firms and these institutions. They also have knowledge about navigating the firm through political channels. Two political institutions are regulatory agencies and the Pentagon. A positive relation is predicted between the incidence of ex-political figures on the board and whether the firm is a utility (Utilities) or in the defense industry (Defense).

Ex-Military Officers.   Ex-military officers (for example, army, marine and air force generals, and naval admirals) have informal ties with the Pentagon and other government agencies dealing with defense. Like politicians, current military officers are barred from serving on boards. A positive relation is posited between the incidence of ex-military officers on the board and whether the firm is in the defense industry (Defense).

Information Needs and Resource Dependencies: The Director's Current Employment: Investment and Commercial Bankers. Investment and commercial bankers have special knowledge about raising capital outside the firm, and have access to these financial markets. However, financial interactions between commercial banker-directors and the firm is limited by law and government regulation. For example, commercial banks may be subject in bankruptcy to subordination of its loans if one of its officers sits on the bankrupt firm's board (Roe (1990)). This may circumscribe a commercial bank's incentive

to include a current employee from sitting on an outside board. In contrast, few restrictions are cast on investment bankers serving as directors of client firms.

According to the information needs and resource dependencies hypotheses, firms place commercial and investment bankers on their boards according to their external financing needs. Commercial bankers deal with debt. Thus, a positive relation is predicted between the incidence of commercial bankers on the board and Debt/Assets.[24] A negative relation is posited for non-debt-type of financings (Complex Financing). Regressions are estimated for both outside and affiliated commercial bankers.

Investment bankers deal with more complex types of financial instruments, which, as evidenced by Titman and Wessels (1988) and Williamson (1988), are more prevalent for firms with more uncertain underlying assets (for example, firms with lots of research and development costs). Since these firms must turn to forms of non-debt financing, such as pure equity, "dequity" (Williamson (1988)), monthly income preferred stocks, redeemable preferred stock and hybrid securities, it is predicted that the placement of investment bankers on the board will be positively related to Information Needs (which contains R&D expenditure) and to the complexity of the firm's financial structure (Complex Financing).[25] Regressions are estimated for both outside and affiliated investment bankers.

B. Empirical Results

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[24] Stearns and Mizruchi (1993) and Booth and Deli (1996) find positive associations between the amount of short-term borrowings and the presence of a commercial banker on the board. Stearns and Mizruchi use data from 1956 through 1983. Booth and Deli use data from 1990. Stearns and Mizruchi interpret their findings as being consistent with resource dependencies. However, Booth and Deli find the association holds for outside commercial bankers only, making their results inconsistent with resource dependencies.

[25] Complex Financing is assigned the value of one to firms having at least three different types of securities (e.g., bonds, preferred stock, common stock, convertible securities) and zero to firms with only one or two types of securities.

Empirical Specifications. As shown in Appendix B, four factors with eigenvalues greater than .99 were retained preserving 66% of the variance. These four factors correspond to CEO Hegemony, Agency Costs, Information Needs and Firm-Specific Risk. In calculating these factors, all of the original variables are retained except for Debt/Assets and Utilities which are treated as separate constructs. Comparisons between Appendices A and B reveal that the eigenvalues and the scoring coefficients for the overlapping factors are very similar between the two principal components models.

Empirical Results. Table 5 contains the summary statistics for the logistical regressions for ten director-types. To facilitate easier comparisons among the regressions, I bolded the coefficients and t-statistics of the variables and factors discussed above. Note that bolding does not necessarily imply statistically nor economically significant coefficients.

Most of the hypotheses about director-type are borne out by the data.

CEO Hegemony is significantly related to the percentage of the CEO's relatives on the board (column 1). The regression produces an R^2 of .10 and an F-value of 8.10. Interestingly, no other affiliated director-type is positively related to CEO Hegemony, suggesting no linkage between the CEO's power over the board and their selection to the board (columns 2, 7, and 9).

The coefficients on Firm-Specific Risk, Utilities and Software are significantly positive for the regression on affiliated attorneys (column 2); only Firm-Specific Risk is significantly positive for the regression on outside attorneys (column 3). Substantial differences between the R^2 and F-values can be seen between the two estimations. These

findings are consistent with the alternative form of the information needs hypothesis and lends credence to the proposition that financial ties between firm and director increase the effectiveness of information transfer.

The significantly positive coefficient on Drugs for the regression on academics (column 4), on Utilities and Defense for ex-politicians (column 5), and on Defense for ex-military officers (column 6) are consistent with the information needs and resource dependencies hypotheses. In particular the magnitude of these coefficients suggests a strong linkage between director-type and firms in these industries. For these regressions, only one predicted variable, Information Needs in column 4, is insignificantly different from zero.

The coefficients on Information Needs and Complex Financing are positive and statistically significant at the .01 (.10) level for the regression on affiliated investment bankers (column 7); only Complex Financing is significant at the .10 level for the regression on outside investment bankers (column 8).[26] These findings support the view that affiliated, not outside, investment bankers are more likely to be placed on boards with these specific financing needs.

Finally, the coefficient on Complex Financing is significantly negative at the .05 level for the regression on outside commercial bankers (column 10) but is insignificant for the regression on affiliated commercial bankers (column 9). The coefficients on debt/assets are not significant for either regression. Thus, little evidence is found to support the information needs or resource dependencies theories for commercial bankers. One explanation for this result may be that banking laws make it relatively more costly for

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[26] The insignificant coefficients on debt/assets for investment bankers is consistent with those found by Stearns and Mizrachi (1993) and Booth and Deli (1996).

commercial bankers to do business with the companies on whose boards the banks' officers sit.

In sum, most of the proposed hypotheses for the affiliated specific director-types are borne out by the data. Six of the eight predicted variables for affiliated directors are significant at the .10 level or better. The two insignificant variables are for commercial bankers and may be explained by institutional considerations. The F-values for three of the four affiliated director regressions are at the .01 level, commercial bankers being the exception. In contrast, seven of the twelve predicted variables for outside directors are significant at the .10 level. However, most of the insignificant coefficients are for outside directors with corresponding affiliated directors (for example, attorneys and investment bankers). Outside directors without corresponding affiliates (for example, ex-politicians and ex-military officers) are placed on boards according to the firms' resource dependencies needs.

Empirical Results: Sensitivity Tests. As an alternative to using logistical transformations of percentages of director-types as the dependent variable, I applied a dichotomous logit model with incidence of director-type being equal to one and zero otherwise. The downside of this methodology is that it treats the director-type's impact on the board as being intransigent to board size, a restriction I believe is unreasonable to assume. Nevertheless, the results with this specification were consistent, but slightly weaker, than those reported in the paper.

To examine the model's sensitivity to using factor analysis in obtaining the underlying constructs, I individually use all of the variables as proxies for CEO hegemony

and economic needs.   Table 6 contains the empirical results with this specification. Examination of Table 6 reveals that the results reported in Table 5 are robust to using factor analysis.

VII. Economic Consequences of Variations in Board Composition

A. *Hypotheses*

The thrust of the paper to this point has been on the *determining factors* behind variations in board composition. I now examine the *consequences* on firm performance. Two mutually exclusive hypotheses are tested. The first is that board structure, on average, is in equilibrium across firms. Under this hypothesis, corporations assess their economic needs and choose optimally from a menu of internal and external control mechanisms, of which board composition is one factor.[27] If firms have evolved, on average, into these mechanisms in ways consistent with value maximization, then no systematic relation will be found between observed board composition and firm performance. McAvoy et al. (1983), Hermalin and Weisbach (1991), and Bhagat and Black (1996) report no relation between the percentage of insiders and/or outsiders and firm performance, results supporting the equilibrium hypothesis.

The alternative hypothesis is that firms are not in equilibrium with respect to board structure. Reasons for disequilibrium may be CEO domination of the nominating process, regulatory rules or external pressures to include too many (or too few) outside directors. For example, the NYSE (since 1978) and the NASDAQ (since 1989) require traded companies to have at least two outside directors on their board. Shareholder alliance groups (John and Klein (1996)), academics (Firstenberg and Malkiel (1994)), and the popular press (Byrne's article in Business Week (1996)) have called for limitations on the use of inside and/or

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[27] Other governance choices include management compensation packages (long-term options, bonuses, pensions), where to incorporate (states have different legal rules), firm organization (M-form, U-form hierarchical structures), financial structure (debt, equity, warrants), voting rights of different claimants, and who to hire inside and outside the firm (internal and external accountants, attorneys, consultants). Each of these options has costs and benefits attached to it.

affiliated directors or for certain board committees to be comprised solely of outside directors. Under the disequilibrium hypothesis, there will be systematic associations between observed board structure and firm performance. Agrawal and Knoeber (1994) have shown evidence in favor of the disequilibrium hypothesis.

B. Empirical Specifications

I examine the relation between firm performance and director-type through OLS regression analysis. Since Bhagat and Black (1996) show that regression results between board composition and firm performance is sensitive to the latter's measure, I use three separate performance measures are used as the dependent variable. Market Value/Book Value is the ratio of market value of equity over the book value of equity. As Fama and French (1992; 1995) show, this ratio captures much of the cross-section of average stock returns as well as future earnings across firms. Return on assets (ROA), an accounting measure of profitability, is after-tax income (without interest expense) before extraordinary items over the book value of the firm's assets. Abnormal market returns, a market measure, are the beta-and-market-adjusted returns for each firm. All performance measures are for the fiscal year accompanying the firm's proxy statement. Thus, board membership coincides with the beginning measurement date for firm performance.

The primary independent variables are the specific director-types. Since I do not know the true functional form between firm performance and director-type, I separately estimate three regressions. First, I use the percentages of director-types as the independent variables. This specification assumes a linear relationship between performance and director-type. Second, I use a dummy variable equal to one if one (or more) director-type is

on the board, and zero otherwise. With dummy variables, no linear relationship is assumed, implying that the relative impact of the director-type vis-à-vis board size is irrelevant. Third, to allow for the possibility that boards may contain too many or too few of a director-type, I include the squared percentage of directors-types as additional variables to the first set of equations. A significant sign on each coefficient would be consistent with this interpretation of the data.

One problem with this methodology is noise. As Gertner and Kaplan (1998) point out, the link between board composition and firm performance occurs concurrently with numerous other factors. This commonly is called an omitted variables problem. To control for competing internal corporate governance mechanisms that may be related to firm performance, I include %Director Shares (Morck, Shleifer and Vishny (1988), McConnell and Servaes (1990), Hermalin and Weisbach (1991), and Bhagat and Black (1996))[28] and Ln(Size of Board) (Yermack (1996)) as independent variables. To control for other factors that may be related to firm performance and/or board structure, I include R&D Expenditures, Capital Expenditures, Beta, and Dummy (1992). R&D Expenditures and Capital Expenditures are the amounts spent on research and development and on property, plant and equipment, respectively. Net revenues deflate both variables. Beta and Dummy(1992) are defined as before.

A second problem with this methodology is endogeneity. As Hermalin and Weisbach (1988, 1991, 1996), Bhagat and Black (1996) and Gertner and Kaplan (1998)

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[28] I also partitioned director shareholdings into zero to 5% and greater than 5% ownership levels (Morck, Shleifer and Vishny (1988), Hermalin and Weisbach (1991), Rosenstein and Wyatt (1997)). The results using these partitioned variables are essentially the same as those reported in the paper.

assert, board structure is partially determined by past firm performance.[29] Further, as Gertner and Kaplan (1998) correctly state, few good instruments exist to overcome this problem. To deal with this problem, I include the one-year lagged performance of the firm as an additional explanatory variable.

From this discussion, the reader is warned that specification errors in the dependent and independent variables, missing correlated variables, and misplaced functional forms lowers a regression's power. Thus, finding insignificant coefficients on the director-types are consistent with the equilibrium hypothesis and with the tests having a low explanatory value. A third explanation is that board structure may not matter to firm performance.

C. Empirical Results

Table 7 contains the regression results on the full sample of data. Due to missing Compustat data, the sample size is reduced to 856 firms. In Panel A, I present regressions using ten affiliated and outside director-types. In Panel B, I do not differentiate between affiliated or outside directors, resulting in seven non-inside director-types. In both panels, I measure director-type in percentage terms (%Dir) or as dummy variables (Dummy).

As shown in Table 7, no systematic evidence is found linking firm performance to director-type. In Panel A, only thirteen of possible 30 coefficients on director-types are statistically different at the .10 level. Examination of these thirteen coefficients produces no

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[29] Hermalin and Weisbach (1988) find that for a sample of 142 NYSE firms between 1972 and 1983 firms, poor performance leads to the removal of insiders and the addition of outsiders to the entire board. To examine whether past performance leads to changes in board composition for my sample, I separately rank firms by ROA, raw stock returns and beta-adjusted stock returns over the periods 1988-1991 and then examine changes in board composition between 1992 and 1993 for the lowest and highest quintile of firms. Using both parametric and non-parametric tests, I find no evidence that firms change their overall board composition in response to prior poor (or good) performance. However, unlike Hermalin and Weisbach, I do not use a multivariate Poisson prediction model of board additions in examining my sample.

consistent story about disequilibrium. Panel B yields similar conclusions.

The results in Table 7 are robust to whether director-type is defined as a percentage or as a dummy variable. For example, the coefficients and their t-statistics on the non-director-type variables are invariant to director-type definition, suggesting that the control variables are not unduly related to the director-type variables. Comparisons between Panels A and B reveal that dichotomizing certain occupations into affiliated or outside directors has little impact on the coefficients, their t-statistics, and hence, the interpretation of the results. In addition, although not shown, adding the squared percentage terms to the regressions in Panel A yields consistent results. None of the coefficients on the squared percentage terms are significant at the .10 level, suggesting that boards do not "over" or "under" include certain types of directors.

Further Analysis. The weak results reported in Table 7 may be due to a cancelling out of CEO hegemony or economic needs across different types of firms. As shown in Section VI, director-type inclusion rates are related to specific environmental factors which vary dramatically across firms. By using all firms in the S&P 500, I may be introducing noise into the statistical specifications, thus biasing my coefficients towards zero.

To address this possibility, I compare performance measures for subsets of firms stratified by environmental factor and director-type. First, I identify relevant environmental factors by choosing the factors in Table 5 that have significance levels of .01 or less. Next, I choose the subsample of firms with the highest degree of the factor and compare performance measures between firms with and without a specific director-type. The director-type corresponds to the dependent variable in each column. I repeat the

comparisons for the group of firms with the lowest degree of that environmental factor. For continuous factors (e.g., CEO hegemony), I define highest and lowest degree as being in the top or bottom quintile, respectively. For dichotomous variables (e.g., Drugs), I use a one or zero value.[30] If director-type matters, then I should observe significant differences in performance measures within each group of firms.

The results, reported in Table 8, are congruent with those found in Table 7. No consistent association is found between firm performance and director-type for firms with a high degree of the environmental factor. Interestingly, some evidence exists that including director-types on boards with firms with a low level of the environmental factor may result in the firm having lower performance measures. On average, however, it appears that the evidence is tipped towards supporting the hypothesis that boards are constructed rationally across firms.

VIII. Concluding Remarks

This paper examines both the causes and consequences of board structure for U.S. firms listed on the S&P 500. Unlike most previous papers, I go deeply into board structure, classifying directors by occupation and/or the director's relationship with the firm. As a result, I am able to get a richer picture as to how boards are constructed, why they differ across firms, and any economic consequences associated with these differences.

Four non-mutually-exclusive hypotheses are presented and tested as to why boards

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[30] For example, column (1) of Table 5 suggests that CEO Hegemony is associated with having a relative of the CEO on the board. Using the factor scores from Appendix B, I rank CEO Hegemony from high to low for all firms in the sample. The top quintile is called highest CEO Hegemony; the bottom quintile is called lowest CEO Hegemony. For the top quintile, I calculate and compare performance measures for those firms with a relative on the board against those firms without a relative on the board. I repeat the comparisons for the group of firms in the bottom quintile.

would include or exclude various types of directors. They are CEO-hegemony, agency costs, information needs and resource dependencies. Two mutually-exclusive hypotheses are presented and tested as to the economic consequences of including or excluding the same types of directors on the board.

The results uniformly support the view that boards, on average, are constructed rationally. First, strong evidence is presented consistent with the agency costs, information needs and resource dependencies theories as to why certain types of directors are placed on various boards. Second, consistent evidence is found in support of the hypothesis that firm performance cannot be improved by adding or deleting certain director-types from boards. Finally, with the exception of the CEO's relatives, there is no evidence consistent with the conventional view (for example, Byrne (1996)) that including affiliated directors on the board is detrimental to the firm. Thus, it appears that affiliated directors are not puppets of management but, instead, are effective directors.

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Table 1

**Percentage of Firms with Boards of Directors Having
at Least One Type of Director**

Type of Director	At Least One	At Least One Affiliated	At Least One Outsider
1. Attorney	41.4%	26.1%	18.5%
2. Consultant	33.6	5.8	29.8
3. Investment Banker	20.5	12.4	13.3
4. Commercial Banker	21.4	8.3	14.4
5. CEO of S&P 500	53.3	14.1	47.9
6. Retired CEO of S&P 500	47.0	8.4	42.9
7. Ex-Politician	16.2	3.4	13.4
8. Retired Military	7.5	NA	7.5
9. Private Investor	39.4	6.3	35.9
10. Academic	57.5	5.5	55.5
11. CEO non-S&P 500	65.7	13.6	60.5
12. Retiree of Firm	51.5	51.5	NA
13. Relative of CEO	11.3	11.3	NA

Table 2

**Pearson Correlations Between Percentages of Inside, Outside,
Affiliated Directors and the Independent Variables**

This table reports Pearson correlations between three director-types and eleven independent variables. The independent variables are classified according to hypothesis. %Outsiders is the percentage of board members who are outside directors; %Insiders is the percentage of board members who are employees of firm; %Affiliates is the percentage of non-employee directors who have significant ties with the firm. CEO on Nom. Committee is a dummy variable equal to 1 if the CEO sits on the board's nominating committee and zero otherwise; CEO Tenure is the number of years the CEO has been on the board; Lagged ROA is the 3-year average accounting return on assets ending one year prior to the last fiscal year; Lagged Ab. Returns is the 2-year beta-and-market-adjusted stock return ending one year prior to the last fiscal year; Lagged Opportunity Set is the 3-year average book value of liabilities plus market value of equity over the 3-year average book value of assets; Beta is the beta coefficient of the market model measured 120 days prior to shareholders' annual meeting; R&D/Assets is the 3-year average of research and development expenditures found on the income statement divided by the 3-year average book value of assets; Debt/Assets is the 3-year average of book value of debt over the 3-year average of book value of assets; Utilities is a dummy variable equal to 1 if firm is a utility and zero otherwise; Std(ROE) is the 5-year standard deviation of firm's return on equity prior to last fiscal year; and Ln(Assets) is the natural log of the book value of assets. The sample includes 891 firms with proxy statements between July 1, 1991 and June 30, 1993. P-values appear in parentheses.

Hypothesis	Variable	%Outsiders	%Insiders	%Affiliates
CEO Hegemony				
	CEO on Nom. Comm.	-.20 (.01)	.25 (.01)	.04 (.19)
	CEO Tenure	-.25 (.01)	.33 (.01)	.03 (.37)
Agency Costs and/or Resource Dependencies				
	Lagged ROA	-.23 (.01)	.29 (.01)	.04 (.24)
	Lagged Ab. Returns	-.08 (.03)	.15 (.01)	-.03 (.38)
	Lagged Opportunity Set	-.21 (.01)	.24 (.01)	.06 (.06)
Information Needs				
	Beta	-.15 (.01)	.06 (.09)	.14 (.01)
	R&D/Assets	-.05 (.18)	.06 (.06)	.01 (.78)
Resource Dependencies				
	Debt/Assets	.13 (.01)	-.19 (.01)	-.01 (.86)
	Utilities	.07 (.05)	-.05 (.12)	-.04 (.29)
	Std(ROE)	-.05 (.14)	-.03 (.43)	.09 (.01)
Information Needs and/or Resource Dependencies				
	Ln(Assets)	.13 (.01)	-.10 (.01)	-.08 (.04)

Table 3

Logistical Regressions of Inside, Outside or Affiliated Directors on Independent Variables

The dependent variable is %Outsiders, %Insiders, and %Affiliates, respectively. %Outsiders is the percentage of board members who are outside directors; %Insiders is the percentage of board members who are employees of firm; %Affiliates is the percentage of non-employee directors who have significant ties with the firm. A logistical transformation using the formula $\ln((pct./1-pct.)+1)$ is applied to each percentage. The independent variables, CEO Hegemony, External Monitoring, Information Needs, Resource Dependencies, and Firm-Specific Risk are factors derived from a principal components model on eleven underlying independent variables. The control factors are Ln(Size of Board) equal to the natural log of the firm's board size, %Director Shares equal to the percentage of total common equity owned by all directors as defined by item 403(b) of Regulation S-K, and Dummy(1992) equal to 1 if the proxy date is from July 1, 1991 to June 30, 1992, and zero otherwise. The sample includes 891 firms with proxy statements between July 1, 1991 and June 30, 1993. T-statistics appear in parentheses.

Variable	Expected Sign (Outsiders)	%Outsiders	Expected Sign (Insiders)	%Insiders	Expected Sign (Affiliates)	%Affiliates
Intercept	?	1.17 (6.9)[a]	?	.37 (5.5)[a]	?	.28 (3.7)[a]
CEO Hegemony	−	-.10 (-6.7)[a]	+	.05 (8.6)[a]	?	.00 (0.6)
External Monitoring	−	-.08 (-5.3)[a]	+	.04 (6.9)[a]	?	.00 (0.6)
Information Needs	?	-.06 (-3.9)[a]	+	.01 (1.7)[c]	?	.01 (2.2)[b]
Resource Dependencies	?	.04 (2.2)[b]	−	-.01 (-2.1)[b]	+	-.00 (-0.1)
Firm-Specific Risk (Resource Dependencies)	?	-.01 (-0.7)	−	-.01 (-1.4)	+	.02 (2.2)[b]
Ln(Size of Board)	?	-.07 (-1.1)	?	-.04 (-1.6)	?	-.02 (-0.8)
%Director Shares	−	-.32 (-4.4)[a]	+	.01 (0.5)	?	.19 (5.8)[a]
Dummy(1992)	?	.01 (0.3)	?	.02 (1.8)[c]	?	-.02 (-1.8)[c]
R^2		.12		.14		.06
F-Value		15.96[a]		18.65[a]		7.29[a]

[a] significant at the .01 level
[b] significant at the .05 level
[c] significant at the .10 level

Table 4

Logistical Regressions of Inside, Outside or Affiliated Directors on Independent Variables

The dependent variable is %Outsiders, %Insiders, and %Affiliates, respectively. %Outsiders is the percentage of board members who are outside directors; %Insiders is the percentage of board members who are employees of firm; %Affiliates is the percentage of non-employee directors who have significant ties with the firm. A logistical transformation using the formula $\ln((\text{pct.}/1-\text{pct.})+1)$ is applied to each percentage. The independent variables, CEO Tenure, Lagged ROA, Beta, R&D/Assets, Std(ROE), Debt/Assets, and Utilities are proxies for CEO hegemony, External Monitoring, Information Needs, Resource Dependencies. The control factors are Ln(Assets), Ln(Size of Board) equal to the natural log of the firm's board size, %Director Shares equal to the percentage of total common equity owned by all directors as defined by item 403(b) of Regulation S-K, and Dummy(1992) equal to 1 if the proxy date is from July 1, 1991 to June 30, 1992, and zero otherwise. The sample includes 891 firms with proxy statements between July 1, 1991 and June 30, 1993. T-statistics appear in parentheses.

Variable	Expected Sign (Outsiders)	%Outsiders	Expected Sign (Insiders)	%Insiders	Expected Sign (Affiliates)	%Affiliates
Intercept	?	1.56 (9.1)[a]	?	.21 (3.1)[a]	?	.24 (3.1)[a]
CEO Tenure (CEO hegemony)	-	-.01 (-6.5)[a]	+	.01 (8.4)[a]	?	.00 (0.4)
Lagged ROA (Monitoring)	-	-1.57 (-4.9)[a]	+	.78 (6.3)[a]	?	.07 (0.5)
Beta (Information Needs)	?	-.17 (-4.2)[a]	+	.03 (1.7)[c]	?	.06 (3.4)[a]
R&D/Assets (Information Needs)	?	-.54 (-1.2)	+	.17 (1.0)	?	-.17 (-0.8)
Std(ROE) (Resource Depend.)	?	-.07 (-1.6)	-	.01 (1.1)	+	.04 (2.0)[b]
Debt/Assets (Resource Depend.)	?	.17 (1.7)[c]	-	-.12 (-3.0)[a]	+	-.03 (-0.7)
Utilities (Resource Depend.)	?	-.08 (-1.5)	-	.04 (1.9)[c]	+	.02 (0.8)
Ln(Assets)	?	. 01 (0.5)	?	.01 (1.3)	?	-.01 (-0.9)
Ln(Size of Board)	?	-.08 (-1.1)	?	-.06 (-2.1)[b]	?	-.01 (-0.4)
%Director Shares	-	-.36 (-5.0)[a]	+	.03 (1.1)	?	.19 (5.8)[a]
Dummy(1992)	?	.01 (0.5)	?	.02 (1.7)[c]	?	-.02 (-1.9)[c]
R^2		.14		.16		.06
F-Value		13.28[a]		15.64[a]		5.99[a]

[a] significant at the .01 level
[b] significant at the .05 level
[c] significant at the .10 level

Table 5

Logistical Regression Models for Specific Director-Types on Independent Variables

The dependent variable is the percentage of board members having a specific occupation or relation with the CEO. Outside directors have no affiliation with the firm beyond being members of the firm's board. Affiliated directors have significant ties with the firm. A logistical transformation using the formula ln((pct./1-pct.)+1) is applied to each percentage. The independent variables, CEO Hegemony, External Monitoring, Information Needs, and Firm-Specific Risk are factors derived from a principal components model on nine underlying independent variables. Debt/Assets is the 3-year average of book value of debt over the 3-year average of book value of assets; Complex Financing is a dummy variable equal to 1 if the firm has at least three different types of securities and zero otherwise; Utilities, Drugs, and Software are dummy variables equal to 1 if the firm is a utility, pharmaceutical company or software company, respectively, and zero otherwise. The control factors are Ln(Size of Board) equal to the natural log of the firm's board size, %Director Shares equal to the percentage of total common equity owned by all directors as defined by item 403(b) of Regulation S-K, and Dummy(1992) equal to 1 if the proxy date is from July 1, 1991 to June 30, 1992, and zero otherwise. The sample includes 891 firms with proxy statements between July 1, 1991 and June 30, 1993. T-statistics appear in parentheses. Bolded coefficients (t-statistics) are for the attributes discussed in Section VI; they do not imply necessarily statistical or economic significance.

	Relative of CEO (1)	Affiliated Attorney (2)	Outside Attorney (3)	Academics (4)	Ex-Politicians (5)
Intercept	-.036 (-2.1)[b]	.038 (2.1)[b]	.018 (1.1)	.022 (0.7)	-.010 (-0.7)
CEO Hegemony	**.006 (4.1)[a]**	.001 (0.5)	-.002 (-1.2)	-.013 (-4.5)[a]	-.002 (-1.3)
Agency Costs	.004 (2.1)[b]	.003 (1.8)[c]	.000 (0.2)	-.000 (-0.0)	-.005 (-3.3)[a]
Information Needs	-.000 (-0.2)	.004 (2.4)[b]	-.001 (0.4)	**.004 (1.2)**	-.001 (-0.6)
Firm-Specific Risk	.002 (1.5)	**.006 (3.3)[a]**	**-.005 (-3.1)[a]**	-.004 (-1.3)	-.002 (-1.4)
Debt/Assets	.000 (0.0)	.000 (0.0)	-.002 (-0.2)	-.007 (-0.4)	.004 (0.4)
Complex Financing	-.007 (-2.2)[b]	-.000 (-0.1)	-.004 (-1.2)	-.011 (-1.9)[c]	-.001 (-0.2)
Utilities	-.009 (-1.7)[c]	**.014 (2.3)[b]**	**.002 (0.4)**	.003 (0.4)	**.010 (2.1)[b]**
Defense	.028 (1.3)	-.022 (-1.0)	-.002 (-0.1)	-.043 (-1.1)	**.035 (1.8)[c]**
Drugs	-.015 (-1.6)	-.031 (-3.1)[a]	-.020 (-2.3)[b]	**.054 (3.2)[a]**	.006 (0.7)
Software	-.015 (-0.8)	**.035 (1.8)[c]**	**-.017 (-1.0)**	-.006 (-0.2)	-.004 (-0.2)
Ln(Size of Board)	.021 (3.1)[a]	-.004 (-0.6)	.001 (0.1)	.023 (1.9)[c]	.011 (1.7)
%Director Shares	.046 (6.1)[a]	-.018 (-2.3)[b]	-.001 (-0.2)	-.031 (-2.3)[c]	-.002 (-0.3)
Dummy(1992)	-.004 (-1.2)	-.003 (-0.9)	.002 (0.8)	-.002 (-0.4)	-.004 (-1.7)[c]
R^2	.10	.03	.01	.06	.04
F-Value	8.1[a]	3.2[a]	1.9[b]	5.3[a]	3.5[a]

Table continued on next page

	Ex-Military Officer (6)	Affiliated Investment Banker (7)	Outside Investment Banker (8)	Affiliated Commercial Banker (9)	Outside Commercial Banker (10)
Intercept	.013 (1.3)	.024 (1.9)[c]	.051 (3.1)[a]	-.008 (-0.7)	-.019 (-1.4)
CEO Hegemony	-.003 (-3.5)[a]	.002 (1.4)	-.000 (-0.3)	-.001 (-0.7)	-.003 (-2.3)[b]
Past Performance	-.000 (-0.5)	.002 (1.8)	.005 (2.9)[a]	-.000 (-0.3)	.000 (0.1)
Information Needs	-.000 (-0.4)	**.004 (3.2)[a]**	**-.001 (-0.5)**	-.001 (-0.7)	.000 (0.1)
Firm-Specific Risk	-.001 (-0.9)	-.001 (-0.8)	-.002 (-1.3)	-.001 (-1.2)	-.000 (-0.3)
Debt/Assets	.004 (0.6)	-.004 (-0.5)	-.006 (-0.7)	**-.001 (-0.2)**	**.004 (0.5)**
Complex Financing	-.001 (-0.6)	**.005 (1.9)[c]**	**.006 (1.9)[c]**	**-.000 (-0.1)**	**-.006 (-2.2)[b]**
Utilities	-.005 (-1.6)[c]	-.001 (-0.3)	-.005 (-1.0)	.006 (1.5)	.006 (1.5)
Defense	**.028 (2.2)[b]**	-.010 (-0.6)	.017 (0.8)	-.011 (-0.7)	-.017 (-1.0)
Drugs	-.001 (-0.2)	.002 (0.3)	-.023 (-2.6)[a]	.001 (0.2)	-.004 (-0.5)
Software	-.004 (-0.3)	-.017 (-1.3)	-.023 (-1.3)	-.003 (-0.2)	-.004 (-0.3)
Ln(Size of Board)	-.003 (-0.7)	-.006 (-1.1)	-.015 (-2.3)[b]	.007 (1.5)	.013 (2.4)[b]
%Director Shares	.014 (3.2)[a]	-.006 (-1.0)	.006 (0.8)	-.004 (-0.7)	-.014 (-2.4)[b]
Dummy(1992)	.000 (0.2)	-.001 (-0.5)	.003 (0.9)	-.000 (-0.2)	.006 (2.5)[b]
R^2	.02	.02	.02	.00	.03
F-Value	2.3[a]	2.6[a]	2.2[b]	1.2	3.2[a]

[a] significant at the .01 level
[b] significant at the .05 level
[c] significant at the .10 level

Table 6

Logistical Regression Models for Specific Director-Types on Independent Variables

The dependent variable is the percentage of board members having a specific occupation or relation with the CEO. Outside directors have no affiliation with the firm beyond being members of the firm's board. Affiliated directors have significant ties with the firm. A logistical transformation using the formula $\ln((pct./1\text{-}pct.)+1)$ is applied to each percentage. The independent variables, CEO Tenure, Lagged ROA, Beta, R&D/Assets, and Std(ROE) represent CEO Hegemony, External Monitoring, Information Needs, and Firm-Specific Risk. Debt/Assets is the 3-year average of book value of debt over the 3-year average of book value of assets; Complex Financing is a dummy variable equal to 1 if the firm has at least three different types of securities and zero otherwise; Utilities, Drugs, and Software are dummy variables equal to 1 if the firm is a utility, pharmaceutical company or software company, respectively, and zero otherwise. The control factors are Ln(Size of Board) equal to the natural log of the firm's board size, %Director Shares equal to the percentage of total common equity owned by all directors as defined by item 403(b) of Regulation S-K, and Dummy(1992) equal to 1 if the proxy date is from July 1, 1991 to June 30, 1992, and zero otherwise. The sample includes 891 firms with proxy statements between July 1, 1991 and June 30, 1993. T-statistics appear in parentheses. Bolded coefficients (t-statistics) are for the attributes discussed in Section VI; they do not imply necessarily statistical or economic significance.

	Relative of CEO (1)	Affiliated Attorney (2)	Outside Attorney (3)	Academics (4)	Ex-Politicians (5)
Intercept	-.028 (-1.6)	.043 (2.2)[b]	.005 (0.3)	.002 (0.1)	-.023 (-1.4)
CEO Tenure	**.001 (3.7)[a]**	.000 (0.1)	-.000 (-0.9)	-.001 (-3.3)[a]	.000 (0.4)
Lagged ROA	.036 (1.1)	.094 (2.6)[a]	-.031 (-1.0)	-.026 (-0.4)	-.080 (-2.6)[a]
Beta	.002 (0.5)	.006 (1.4)	.000 (0.1)	**-.007 (0.9)**	-.003 (-0.8)
R&D/Assets	-.017 (-0.4)	.056 (1.1)	-.026 (-0.5)	**.241 (2.7)[a]**	.032 (0.7)
Std(ROE)	.006 (1.4)	**.012 (2.4)[b]**	**-.001 (-2.3)[b]**	-.011 (-1.4)	.001 (0.2)
Debt/Assets	-.004 (-0.4)	-.001 (-0.1)	-.005 (-0.5)	.009 (0.5)	.005 (0.6)
Complex Financing	-.008 (-2.3)[b]	.000 (0.1)	-.004 (-1.4)	-.012 (-1.9)[c]	-.001 (-0.3)
Utilities	-.008 (-1.4)	**.014 (2.3)[b]**	**.002 (0.3)**	.002 (0.2)	**.010 (2.1)[b]**
Defense	.029 (1.3)	-.024 (-1.0)	.000 (0.1)	-.049 (-1.2)	**.033 (1.7)[c]**
Drugs	-.012 (-1.2)	-.031 (-3.0)[a]	-.016 (-1.8)[c]	**.049 (2.8)[a]**	-.001 (-0.1)
Software	-.016 (-0.9)	**.033 (1.6)[c]**	**-.014 (-0.8)**	-.016 (-0.5)	-.007 (-0.4)
Ln(Assets)	-.002 (-1.7)[c]	-.002 (-1.0)	.002 (1.7)[c]	.001 (0.5)	.003 (2.7)[a]
Ln(Size of Board)	.021 (2.9)[a]	-.008 (-1.0)	.001 (0.1)	.034 (2.9)[c]	.008 (1.1)
%Director Shares	.047 (6.3)[a]	-.018 (-2.3)[b]	-.001 (-0.2)	-.031 (-2.5)[a]	-.001 (-0.2)
Dummy(1992)	-.003 (-1.2)	-.003 (-1.0)	.002 (0.8)	-.003 (-0.5)	-.004 (-1.5)
R^2	.10	.03	.01	.06	.04
F-Value	7.13[a]	2.81[a]	1.66[c]	4.66[a]	3.35[a]

Table continued on next page

	Ex-Military Officer (6)	Affiliated Investment Banker (7)	Outside Investment Banker (8)	Affiliated Commercial Banker (9)	Outside Commercial Banker (10)
Intercept	.007 (0.6)	.004 (0.3)	.037 (2.2)[b]	-.009 (-0.8)	-.030 (-2.2)[b]
CEO Tenure	-.001 (-2.4)[b]	.001 (2.2)[b]	.000 (0.7)	-.001 (-1.3)	-.000 (-1.4)
Lagged ROA	-.021 (-1.0)	.062 (2.4)[b]	.074 (2.3)[b]	-.010 (-0.4)	.043 (1.6)[c]
Beta	-.002 (-0.6)	**.007 (2.1)[b]**	**-.002 (-0.6)**	.003 (0.9)	-.002 (-0.6)
R&D/Assets	.023 (0.8)	**.083 (2.3)[b]**	**.012 (0.3)**	-.077 (-2.3)[b]	.027 (0.7)
Std(ROE)	.001 (0.4)	-.001 (-0.3)	-.003 (-0.6)	-.002 (-0.7)	.002 (0.5)
Debt/Assets	.004 (0.6)	**-.006 (-0.8)**	**-.008 (-0.8)**	**-.001 (-0.8)**	**.005 (0.6)**
Complex Financing	-.002 (-0.9)	**.005 (2.1)[b]**	**.006 (1.8)[c]**	**-.000 (-0.2)**	**-.005 (-2.1)[b]**
Utilities	-.005 (-1.5)	-.000 (-0.1)	-.005 (-0.9)	.006 (1.6)	.006 (1.4)
Defense	**.028 (2.2)[b]**	-.012 (-0.7)	.018 (0.9)	-.007 (-0.5)	-.019 (-1.1)
Drugs	-.002 (-0.3)	.001 (0.1)	-.021 (-2.3)[b]	.005 (0.9)	-.007 (-1.0)
Software	-.005 (-0.4)	-.020 (-1.5)	-.024 (-1.4)	.002 (0.1)	-.006 (-0.4)
Ln(Assets)	.001 (1.3)	.001 (1.3)	.001 (0.8)	.001 (1.2)	.002 (2.2)[b]
Ln(Size of Board)	-.002 (-0.4)	-.009 (-1.6)[c]	-.015 (-2.1)[b]	.005 (1.0)	.010 (1.8)[c]
%Director Shares	.014 (3.1)[a]	-.005 (-0.9)	.005 (0.8)	-.004 (-0.8)	-.015 (-2.5)[b]
Dummy(1992)	.000 (0.2)	-.001 (-0.6)	.002 (0.7)	-.000 (-0.1)	.005 (2.3)[b]
R^2	.02	.03	.01	.01	.04
F-Value	2.05[a]	2.81[a]	1.61[c]	1.50[c]	3.06[a]

[a] significant at the .01 level
[b] significant at the .05 level
[c] significant at the .10 level

Table 7

Regression of Performance Measures on Director-Type Where Director-Type is a Percentage (%Dir) or a Dummy Variable (Dummy)

Market Value/Book Value is the ratio of market value of equity over the book value of equity; Return on Assets is after-tax income (without interest expense) before extraordinary items over the value of assets; Abnormal Returns is the beta-and-market-adjusted stock returns. All performance measures are for the fiscal year accompanying the firm's proxy statement. The director's occupation or relation with the CEO categorizes the explanatory variables. Outside directors have no affiliation with the firm beyond being members of the firm's board. Affiliated directors have significant ties with the firm. %Dir is the percentage of the board with the specific director-type. Dummy is a dummy variable equal to one if the board has at least one director-type and zero otherwise. The control variables are Ln(Size of Board) equal to the natural log of the firm's board size; %Director Shares equal to the percentage of total common equity owned by all directors as defined by item 403(b) of Regulation S-K; R&D Expenditures equal to the amount spent on research and development over the book value of assets; Capital Expenditures equal to the amount spent on net property, plant and equipment over the book value of assets; Beta equal to the beta coefficient of the market model measured 120 days prior to shareholders' annual meeting; Lagged Dependent Variable equal to the dependent variable one year prior; and Dummy(1992) equal to 1 if the proxy date is from July 1, 1991 to June 30, 1992, and zero otherwise. The sample has 856 firms with proxy statements between July 1, 1991 and June 30, 1993. T-statistics are in parentheses.

Panel A: Affiliated and Outside Director-Types

	Market Value/ Book Value		Return on Assets		Abnormal Returns	
	%Dir	Dummy	%Dir	Dummy	%Dir	Dummy
Intercept	2.28	2.11	0.02	0.03	0.06	0.06
	(2.89)[a]	(2.63)[a]	(1.13)	(1.44)	(0.78)	(0.72)
Relative of CEO	2.64	0.19	0.07	0.01	0.03	0.01
	(1.45)	(0.84)	(1.65)[c]	(1.81)[c]	(0.15)	(0.27)
Affiliated Attorney	-1.62	-0.26	0.04	0.00	0.03	0.02
	(-0.99)	(-1.55)	(1.02)	(0.87)	(0.16)	(0.89)
Outside Attorney	-0.64	-0.13	0.10	0.01	0.26	0.03
	(-0.35)	(-0.68)	(2.35)[b]	(2.08)[b]	(1.27)	(1.29)
Affiliated Investment Banker	0.84	0.39	-0.11	-0.01	-0.45	-0.04
	(0.34)	(1.50)	(-1.89)[c]	(-1.27)	(-1.69)[c]	(-1.33)
Outside Investment Banker	1.07	0.10	-0.02	-0.00	-0.59	-0.06
	(0.54)	(1.35)	(-0.54)	(-0.76)	(-2.68)[a]	(-2.41)[b]
Affiliated Commercial Banker	2.89	0.35	-0.00	-0.00	0.16	0.02
	(1.10)	(1.35)	(-0.05)	(-0.18)	(0.57)	(0.57)
Outside Commercial Banker	-2.85	-0.21	-0.04	-0.00	0.10	0.01
	(-1.26)	(-1.04)	(-0.78)	(-0.88)	(0.41)	(0.30)
Ex-Politician	-1.25	-0.16	0.09	0.01	0.45	0.03
	(-0.63)	(-0.83)	(1.95)[b]	(1.83)[c]	(2.09)[b]	(1.56)
Ex-Military Officer	-1.92	-0.29	0.13	0.01	-0.08	-0.01
	(-0.67)	(-1.08)	(2.02)[b]	(1.77)[c]	(-0.24)	(-0.37)

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Academic	0.21	-0.03	0.00	0.00	-0.00	0.01
	(0.20)	(-0.17)	(0.13)	(0.30)	(-0.04)	(0.37)
%Director Shares	0.03	0.10	-0.02	-0.02	-0.05	-0.05
	(0.08)	(0.28)	$(-2.90)^a$	$(-2.83)^a$	(-1.28)	(-1.35)
Ln(Size of Board)	-0.01	0.10	-0.01	-0.01	-0.02	-0.02
	(-0.03)	(0.30)	$(-1.81)^c$	$(-2.05)^b$	(-0.60)	(-0.60)
R&D Expenditures	7.83	7.43	0.06	0.05	-0.30	-0.31
	$(3.75)^a$	$(3.60)^a$	(1.21)	(1.12)	(-1.35)	(-1.41)
Capital Expenditures	-0.53	-0.47	-0.02	-0.02	-0.25	-0.25
	(-0.36)	(-0.32)	(-0.62)	(-0.52)	(-1.57)	(-1.52)
Beta	0.20	0.19	-0.01	-0.01		
	(1.09)	(1.02)	(-1.36)	(-1.40)		
Lagged Dependent Variable	0.08	0.08	0.89	0.89	0.52	0.52
	$(4.86)^a$	$(4.82)^a$	$(27.64)^a$	$(27.54)^a$	$(18.51)^a$	$(18.50)^a$
Dummy(1992)	-0.18	-0.19	-0.07	-0.01	-0.00	-0.01
	(-1.27)	(-1.34)	(-0.24)	(-0.24)	(-1.35)	(-0.33)
R^2	.05	.05	.49	.49	.30	.30
F-Value	3.50^a	3.71^a	49.83^a	48.55^a	24.47^a	24.16^a

Panel B appears on the next page

Table 7 - continued

Panel B: Non-inside Director-Types

	Market Value/ Book Value		Return on Assets		Abnormal Returns	
	%Dir	Dummy	%Dir	Dummy	%Dir	Dummy
Intercept	2.27	2.06	0.02	0.02	0.06	0.06
	$(2.89)^a$	$(2.58)^a$	(1.06)	(1.32)	(0.71)	(0.71)
Relative of CEO	2.54	0.17	0.07	0.01	0.03	0.01
	(1.40)	(0.74)	(1.59)	$(1.77)^c$	(0.15)	(0.34)
Attorney	-1.26	-0.23	0.07	0.01	0.12	0.01
	(-0.99)	(-1.59)	$(2.25)^b$	$(1.67)^c$	(0.88)	(0.92)
Investment Banker	0.91	0.23	-0.06	-0.01	-0.54	-0.05
	(0.58)	(1.26)	(-1.59)	(-1.51)	$(-3.11)^a$	$(-2.77)^a$
Commercial Banker	-0.42	0.03	-0.03	-0.00	0.13	0.02
	(-0.24)	(0.15)	(-0.66)	(-1.07)	(0.67)	(0.81)
Ex-Politician	-1.11	-0.15	0.08	0.01	0.44	0.03
	(-0.56)	(-0.78)	$(1.88)^c$	$(1.70)^c$	$(2.04)^b$	(1.58)
Ex-Military Officer	-2.12	-0.30	0.13	0.01	-0.08	-0.01
	(-0.74)	(-1.11)	$(2.02)^b$	$(1.75)^c$	(-0.24)	(-0.44)
Academic	0.25	-0.02	0.00	0.00	0.00	0.01
	(0.24)	(-0.11)	(0.12)	(0.29)	(0.01)	(0.34)
%Director Shares	0.06	0.11	-0.02	-0.02	-0.05	-0.05
	(0.16)	(0.31)	$(-2.80)^a$	$(-2.82)^a$	(-1.28)	(-1.36)
Ln(Size of Board)	-0.01	0.10	-0.01	-0.01	-0.02	-0.02
	(-0.03)	(0.30)	(-1.72)	$(-2.86)^a$	(-0.53)	(-0.56)
R&D Expenditures	7.52	7.39	0.05	0.05	-0.30	-0.32
	$(3.62)^a$	$(3.60)^a$	(1.06)	(1.03)	(-1.37)	(-1.44)
Capital Expenditures	-0.46	-0.57	-0.02	-0.01	-0.26	-0.24
	(-0.31)	(-0.39)	(-0.52)	(-0.41)	(-1.60)	(-1.52)
Beta	0.22	0.22	-0.01	-0.01		
	(1.16)	(1.17)	(-1.42)	(-1.43)		
Lagged Dependent Variable	0.08	0.08	0.89	0.89	0.52	0.52
	$(4.82)^a$	$(4.92)^a$	$(27.60)^a$	$(27.52)^a$	$(18.60)^a$	$(18.56)^a$
Dummy(1992)	-0.19	-0.20	-0.00	-0.01	-0.00	-0.01
	(-1.36)	(-1.38)	(-0.23)	(-0.25)	(-0.29)	(-0.35)
R^2	.05	.05	.49	.49	.31	.30
F-Value	4.04^a	4.22^a	59.39^a	58.91^a	30.11^a	29.73^a

[a] significant at the .01 level
[b] significant at the .05 level
[c] significant at the .10 level

Table 8

Performance Measures for Director-Types When
Sample is Stratified According to Environmental Factors

This table presents comparisons in firm performance between firms with and without certain director-types. Four director-types are compared: relatives of the CEO, affiliated attorneys, academics, and affiliated investment bankers. The comparisons are done over subsamples of firms. The subsamples are determined by stratifying the sample according to its degree of an environmental factor. Four factors are used: CEO hegemony, financial risk, the firm being a pharmaceutical company, and information needs. CEO hegemony, financial risk and information needs are measured using the standardized coefficients for the principal components model shown in Appendix B. Pharmaceutical company is determined by the firm's four digit SIC code. The first three environmental factors are ranked from high to low and divided into quintiles. Firms in the top quintile have a '"high" degree of the factor; firms in the bottom quintile have a "low" degree of the factor. The subsamples and director-types are determined jointly by using the results in Table 4. Only bolded factors with p-values of .01 or less in Table 4 are used. The stratifications cover a 856 firm sample with proxy statements between July 1, 1991 and June 30, 1993.

	CEO Hegemony High			CEO Hegemony Low		
	Relative	No Relative	T-Value	Relative	No Relative	T-Value
MV/BV	5.46	3.22	1.57	1.34	2.84	-1.28
ROA	0.09	0.06	1.12	0.06	0.03	1.96[b]
Abnormal Return	-13.79%	-6.66%	-0.59	6.25%	4.76%	0.26

	High Financial Risk			Low Financial Risk		
	Affiliated Attorney	No Affiliated Attorney	T-Value	Affiliated Attorney	No Affiliated Attorney	T-Value
MV/BV	4.49	2.49	1.06	2.20	2.26	-0.08
ROA	0.06	0.02	2.58[b]	0.03	0.04	-2.03[b]
Abnormal Return	-1.92%	-4.38%	0.41	-1.82%	0.03%	-0.46

	Drug Company			Not a Drug Company		
	Academic	No Academic	T-Value	Academic	No Academic	T-Value
MV/BV	7.94	6.15	1.18	2.33	2.90	-1.67[b]
ROA	0.16	0.06	2.26[b]	0.04	0.03	3.37[a]
Abnormal Return	-0.02%	-1.95%	0.89	-1.82%	0.03%	-0.46

	High Information Needs			Low Information Needs		
	Affiliated Investment Banker	No Affiliated Investment Banker	T-Value	Affiliated Investment Banker	No Affiliated Investment Banker	T-Value
MV/BV	2.67	2.71	-0.06	2.59	2.85	-0.31
ROA	0.06	0.06	0.03	0.03	0.04	0.36
Abnormal Return	-5.26%	-1.69%	-0.44	-14.74%	-2.60%	-1.93[c]

[a] significant at the .01 level
[b] significant at the .05 level
[c] significant at the .10 level

Standardized Scoring Coefficients for Principal Components Model for Factors Used in Table 3

This table contains the standardized coefficients for the principal components model used to determine the underlying constructs for CEO Hegemony, Agency Costs, Resource Dependencies, Information Needs, and Firm-Specific Risk. Each of these five factors is used as an explanatory variable in the logistical regressions shown in Table 3. The constructs are determined by weighting eleven variables by the standardized coefficients for each firm in the sample. CEO on Nom. Committee is a dummy variable equal to 1 if the CEO sits on board's nominating committee and zero otherwise; CEO Tenure is the number of years the CEO has been on the board; Lagged ROA is the average 3-year accounting return on assets ending one year prior to the last fiscal year; Lagged Ab. Returns is the 2-year beta-and-market-adjusted stock returns ending one year prior to the last fiscal year; Lagged Opp'y Set is the 3-year average of book value of liabilities plus market value of equity over the 3-year average book value of assets; Debt/Assets is the 3-year average of book value of debt over the 3-year average of book value of assets; Ln(Assets) is the natural log of the book value of assets; Utilities is a dummy variable equal to 1 if firm is a utility and zero otherwise; Beta is the beta coefficient of the market model measured 120 days prior to shareholders' annual meeting; R&D/Assets is the 3-year average of research and development expenditures found on the income statement divided by the 3-year average book value of assets; and Std(ROE) is the 5-year standard deviation of firm's return on equity prior to last fiscal year.. The sample includes 891 firms with proxy statements between July 1, 1991 and June 30, 1993.

	CEO Hegemony	Agency Costs	Resource Dependencies	Information Needs	Firm-Specific Risk (Resource Dependencies)
CEO on Nom. Committee	.51	-.05	-.04	.06	.08
CEO Tenure	.58	-.03	.10	.05	-.13
Lagged ROA	.00	.44	.05	-.02	.11
Lagged Ab. Returns	-.05	.40	.18	-.06	-.23
Lagged Opp'y Set	-.06	.43	-.02	.05	.14
Debt/Assets	-.02	.06	.51	.05	.31
Ln(Assets)	-.15	.03	.51	.20	-.37
Utilities	-.14	.06	-.00	-.51	.06
Beta	-.00	.02	.20	.63	.01
R&D/Assets	-.32	-.05	-.42	.20	-.09
Std (ROE)	-.02	.05	.03	-.00	.72
Eigenvalue	1.12	2.51	1.56	1.28	1.01

Appendix B

Standardized Scoring Coefficients for Principal Components Model
or Factors Used in Table 5

This table contains the standardized coefficients for the principal components model used to determine the underlying constructs for CEO Hegemony, Agency Costs, Information Needs, and Firm-Specific Risk. Each of these five factors is used as an explanatory variable in the logistical regressions shown in Table 4. The constructs are comprised by weighting nine variables by the standardized coefficients for each firm in the sample. CEO on Nom. Committee is a dummy variable equal to 1 if CEO sits on board's nominating committee and zero otherwise; CEO Tenure is the number of years the CEO has been on the board; Lagged ROA is the 3-year average accounting return on assets ending one year prior to the last fiscal year; Lagged Ab. Returns is the two year 2-year beta-and-market-adjusted stock returns ending one year prior to the last fiscal year; Lagged Opp'y Set is the 3-year average of book value of liabilities plus market value of equity over the book value of assets; Ln(Assets) is the natural log of the book value of assets; Beta is the beta coefficient of the market model measured 120 days prior to shareholders' annual meeting; R&D/Assets is the 3-year average of research and development expenditures found on the income statement divided by the 3-year average book value of assets; Std(ROE) is the 5-year standard deviation of firm's return on equity prior to last fiscal year; and. The sample includes 891 firms with proxy statements between July 1, 1991 and June 30, 1993.

	CEO Hegemony	Agency Costs	Information Needs	Firm-Specific Risk (Resource Dependencies)
CEO on Nom. Committee	.57	-.09	.08	.03
CEO Tenure	.55	-.05	-.10	-.15
Lagged ROA	-.01	.41	-.03	.07
Lagged Ab. Returns	-.12	.39	-.17	-.23
Lagged Opp'y Set	-.03	.41	.10	.11
Ln(Assets)	-.27	-.06	-.02	-.46
Beta	.09	-.10	.63	-.12
R&D/Assets	-.09	.03	.56	-.04
Std (ROE)	-.15	-.01	-.14	.76
Eigenvalue	1.42	2.26	1.24	.99