

DOES FIRM PERFORMANCE AFFECT BOARD INDEPENDENCE?

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Abstract

This paper seeks to shed some light on the antecedents of board independence. Specifically, it attempts to test the conceptual frameworks which make different predictions about the effect of firm performance on the level of board independence. The results provide support for the perspective that appointing more independent members to the boards may merely represent firms' attempts to comply with institutional pressures. It is found that higher blockholder shareholdings lead to lower independence on the board, and audit and remuneration committees. Moreover, larger firms have relatively more independent directors sitting on nomination and remuneration committees.

Keywords: Australia; board committees; board composition; board independence; corporate governance models; financial performance

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Introduction

With the publicity surrounding recent corporate collapses, the issues of board composition and structure generally and independent directors specifically, have become a fertile area of interest and research. The definitions of "independence" vary; it appears that they are sourced from the statement in the Cadbury Report (Department for Trade and Industry, 1992: Code 2.2) - an independent director "... should be independent of management and free from any business or other relationship which could materially interfere with the exercise of their independent judgement, apart from their fees and shareholding." The purpose of this study is to shed some light on the antecedents of board independence in the Australian context, and to test the conceptual frameworks which make different predictions about the effect of firm performance on board independence.

As noted by Gillan (2006), there is an explosion of research on corporate governance around the world. Two major corporate governance models have been identified in the literature (e.g., Hall & Soskice, 2001; Denis & McConnell, 2003; Murphy & Topyan, 2005). The first is the outsider system adopted in the U.K. and U.S., in which the primary corporate objective is to maximize profit, and managers must ensure the firm is run in the interests of shareholders. Based on the agency perspective initiated by Jensen and Meckling (1976), the main concern of corporate governance is the conflict between strong managers and weak dispersed shareholders.

The second is the insider system in Germany and Japan, in which corporations must fulfill wider objectives and have responsibilities to parties other than shareholders. It is assumed that the basic conflict is between "weak managers, weak minority owners, strong majority owners" (Bouy, 2005: 39). Australia's system of corporate governance has been described as forming part of the Anglo-Saxon outsider model of ownership and control (e.g., Scott, 1997; Weimar & Paper, 1999; Bradley, Schipani, Sundaram, & Walsh 1999; Campbell, 2002). Several authors, however, raised questions about this classification, and argued that the Australian market might have more in common with the insider system (Lamba & Stapledon, 2001; Dignam & Galanis, 2004). Australia is in the process of reforming its corporate governance based on an assumption that it is an outsider model; if this assumption is incorrect, recent reforms may have a destabilizing effect (Dignam & Galanis, 2004).

In 2002, the New York Stock Exchange (NYSE) and Nasdaq Stock Market started corporate governance reforms to help win back the trust and confidence of investors. One year later, the Securities and Exchange Commission approved the corporate governance listing standards of the NYSE and Nasdaq. Also in 2003, the London Stock Exchange (LSE) revised its *Combined Code* based on an independent review into the role and effectiveness of non-executive directors (NEDs), and the Australian Stock Exchange (ASX) Corporate

Governance Council released *Principles of Good Corporate Governance and Best Practice Recommendations* (Guidelines) which reflect “best international practice” by highlighting the importance of independent directors.

The stock exchanges require that a majority of each listed company’s directors qualify as independent directors. Although it is for the board to decide in particular cases whether the definition of independence is met, there are lists of the categories of persons who should not be considered independent. The ASX and LSE also recommend that the roles of chairperson and chief executive officer (CEO) should not be exercised by the same individual, and the chairperson should be an independent director or meet the independence test on appointment.

All the stock exchanges support listed companies to establish an audit committee. For firms listed on the ASX and LSE, the committee should be comprised entirely of NEDs, the majority being independent directors. According to the NYSE and Nasdaq, all the members of the committee must qualify as independent directors under their rules, as well as the independence criteria for audit committee members set forth in the Securities Exchange Act.

Moreover, the ASX, LSE and NYSE believe it would be necessary for each company to have a nomination committee and a remuneration committee. The ASX recommends that a majority of each committee’s members should be independent. The LSE suggests that a majority of the members of the nomination committee should be NEDs, and the remuneration committee should consist exclusively of independent directors. The NYSE and Nasdaq require that both committees be comprised entirely of independent members.

There are some differences in the general approaches of governance endorsed by the stock exchanges. The NYSE and Nasdaq take a mandatory approach in which every company must comply with every standard, in order to be listed on the stock exchanges. The ASX and LSE follow a voluntary approach in which “[i]f a company considers that a recommendation is inappropriate to its particular circumstances, it has the flexibility not to adopt it – a flexibility tempered by the requirement to explain why” (ASX, 2003: 5). In 2007, the ASX released the second edition of the Guidelines. “Best practice” has been removed from the title and text of the document to eliminate any perception that the Principles are prescriptive and so not to discourage companies from adopting alternative practices and “if not, why not” reporting where appropriate.

Literature Review

Scholars, in general, have taken two approaches to examine the empirical link between board characteristics and firm performance. The first approach is based on relating board characteristics to certain corporate events, such as executive turnover and remuneration, financial reporting, making or defending against a takeover bid, management buy-outs and shareholder litigation. Lawrence and Stapledon (1999) and Bhagat and Black (2000: 3) reviewed this stream of literature, and believed that “[t]he principle weakness of this approach is that it cannot tell us how board composition affects overall firm performance.”

The second approach involves investigating directly the correlation between board characteristics and financial performance, i.e., the “bottom line” of corporate performance. As recommended by Panasian, Prevost and Bhabra (2003), it may avoid the weakness inherent in the first group of studies. Six studies, i.e., Muth and Donaldson (1998), Calleja (1999), Lawrence and Stapledon (1999), Cotter and Silverster (2003), Kiel and Nicholson (2003), and Balatbat, Taylor and Walter (2004), with mixed evidence, conclude that independent directors may not add value to Australian corporations. Only one Australian paper, Bonn, Yoshikawa and Phan (2004), indicates that greater board independence would enhance performance.

The majority of prior studies in this field use agency theory as their underlying theoretical arguments, suggesting that this theory promises a positive impact of board independence on performance. Consequently they do not address whether board characteristics are endogenously related to performance. Although several researchers explored this concern, there is little theoretical support in their papers. Their workings, which are introduced below, are best viewed as exploratory analysis, rather than as testing of formal hypotheses.

Hermalin and Weisbach (1988), to investigate whether firm performance, CEO tenure and changes in market structure would lead to changes in board composition, assembled a database of 142 NYSE-listed companies. Full-time employees are designated as insiders. Directors who are closely associated with the firm, but are not full-time employees, are designated as “greys”. The remaining board members are identified as outsiders.

Their results suggest that poor stock return leads to the resignations of insiders. Outsiders are added after poor performance measured by both stock return and earnings change. Decreases in the number of industries in which firms operate increase the departures of insiders, and firms tend to replace departing insiders with outsiders. In addition, insiders are more likely to be added to the board when a CEO nears retirement; a new CEO, who tends to add outside directors to the board, leads to the departures of insiders.

Pearce II and Zahra (1992: 414) observed that, “[d]espite the wide recognition of the consequences of board composition for company survival and performance, very few empirical studies have been undertaken to explain its determinants.” To reduce this gap they collected data on the *Fortune* 500 corporations; a sample of 119 firms was obtained. They reported that effective past performance, in terms of return on assets (ROA), return on equity (ROE) and earnings per share (EPS), was associated with larger boards and lower representation of outsiders. It

appears that the distinction between affiliated and non-affiliated outsiders is not as important to performance as one would expect.

Denis and Sarin (1999) carried out a time-series analysis of equity ownership structure and board composition in a random sample of 583 U.S. firms. The researchers labelled directors as insiders if they were employees of the firm, as affiliated outsiders if they had substantial business relationships with the firm, were related to insiders, or were former employees, and as independent outsiders if they were neither insiders nor affiliated outsiders.

Their results indicate that ownership and board characteristics are interrelated. Specifically, insider ownership is negatively related to the fraction of independent outsiders, and board size is positively related to the fraction of independent outsiders. Changes in insider ownership are negatively related to prior stock price performance. Market-adjusted stock return appears to be higher among those firms that subsequently increase the fraction of independent outsiders, and those firms that subsequently increase board size.

Hypotheses

From the organizational literature Heslin and Donaldson (1999) and Donaldson (2000) developed a conceptual framework for organizational change and success - organizational portfolio theory, which is built on the premise that low performance is required to trigger adaptive organizational changes. This theory is at present "... a series of propositions waiting for empirical testing. Only after it has received such empirical confirmation would the policy implications sketched here become valid prescriptions" (Donaldson, 2000: 395).

Heslin and Donaldson (1999) assumed that, in general, executive directors would raise risk and non-executives would reduce risk. During periods when executives constitute a large proportion of the board, risk tends to increase. When peaks from the high risk strategy co-occur with favourable combinations of the other portfolio factors,¹ outstanding performance is likely to result. This would reinforce confidence in the integrity and competence of the largely non-independent corporate governance structure, thus bolstering the position of executives on the board.

When the troughs in the high risk strategy occur simultaneously with other performance-depressing portfolio factors, the particularly low performance may trigger the installation of an independent chairperson and a higher proportion of independent directors on the board. The resulting risk-averse governance would tend to reduce firm performance variance.

It is considered that reducing firm risk may be a means of increasing short-term economic value (Brealey & Myers 1996). Heslin and Donaldson (1999), however, argued that low risk could prevent the performance crises needed to trigger required structural adaptation; high economic value achieved by lowering risk is thereby prone to inhibiting long-term growth and profitability. The link between board independence and prior performance could be illustrated as follows:

H₁: There is a negative relationship between the level of board independence and past firm performance (Organizational portfolio theory).

As asserted by Heslin and Donaldson (1999) and Donaldson (2000), an increase in profitability would enhance the perceived integrity and competence of managers, thereby precipitating boards in which managers are increasingly represented. Poor performance would trigger the installation of an independent chairperson and a higher proportion of independent directors on the board.

In contrast, based on the institutional theory which has been used to deal with the rationale behind the emergence of practices without obvious economic value (Myer & Rowan, 1977), Peng (2004) suggested that appointing outside directors to the board might merely represent firms' attempts to comply with institutional pressures, and therefore might not be necessarily linked to firm performance.

A core assumption of institutional theory is that organizations would act to protect or enhance their legitimacy. Copying other reputable organizations, even without knowing the direct benefits of doing so, could be a low cost strategy to gain legitimacy (Peng, 2004). Emerging practices, e.g., total quality management, are generally regarded as state-of-the-art techniques (Westphal, Gulati, & Shortell 1997); jumping on such a 'bandwagon' may be perceived 'as a form of innovation when it is contrasted with the more passive act of ignoring industry trends or the more active stance of rejecting them altogether' (Staw & Epstein, 2000: 528). The rising number of independent members on the board may therefore occur as the result of processes that make organizations more similar without necessarily making them more efficient.

According to DiMaggio and Powell (1983), the concept that best captures the process of homogenization is isomorphism, which is a constraining process that forces one unit in a population to resemble other units that

¹ In Heslin and Donaldson (1999), three factors, namely, diversification, divisionalization and divestment, are identified that are likely to prevent instances of poor performance and so forestall calls for a tougher and more independent board. There are also three factors that could contribute to poor performance and lead to the appointment of more non-executives as board members or chair - business cycles, competition and debt.

face the same set of environmental conditions. They identified three mechanisms through which institutional isomorphic change could occur, each with its own antecedents:

- Coercive isomorphism that stems from political influence and legitimacy;
- Mimetic isomorphism resulting from standard responses to uncertainty; and
- Normative isomorphism associated with professionalization.

Coercive isomorphism may play an important role behind the rising number of independent directors. Coercive isomorphism results from both formal and informal pressures exerted on organizations by other organizations upon which they are dependent, in this case the stock exchanges, and by cultural expectations in the society in which organizations function. Although the ASX follow a voluntary approach to promote board independence, it is noted that the pressures for isomorphism could be felt as persuasion, or as invitations to join in collusion, as well as force (DiMaggio & Powell, 1983).

Mimetic isomorphism may also help us understand some of the dynamics in appointing outsiders on corporate boards. Uncertainty is a powerful force that encourages imitation; when an organization faces a problem with ambiguous causes or unclear solutions, it may model itself after similar organizations that it perceives to be more legitimate or successful (DiMaggio & Powell, 1983). Although corporate governance has become a prominent topic in recent years, there are significant disagreements in the literature (Murphy & Topyan, 2005; Gillan, 2006). In Pettigrew (1992) it is demonstrated that corporate governance lacks any form of coherence, either empirically, methodologically or theoretically, with only piecemeal attempts to understand and explain how the modern corporation is run. Tricker (2000) contended that corporate governance did not have an accepted theoretical base or commonly accepted paradigm, and the term “corporate governance” was scarcely used until 1980. Murphy and Topyan (2005) maintained that researchers investigated corporate governance less as a planned, systematic inquiry, and more as a response to observed problems in corporations. In the situation some firms may decide to appoint independent members to their boards, as a response to the uncertainty in corporate governance issues.

Thus, with respect to the relationship between past performance and board independence, the following hypothesis could be derived from the institutional model:

H_2 : *There is no relationship between the level of board independence and past firm performance (Institutional theory).*

Empirical Tests

This study uses an archival research design which is traditionally employed by the literature surrounding this topic. In addition to descriptive statistics and correlation analysis, ordinary least squares (OLS) and logit regressions are constructed, in which board independence serves as the dependent variable; the independent variables include performance measures and other controls. Bhagat and Black (2000) acknowledged that the factors that determine board composition had not been well understood. As it is the case that “... the structure of empirical models is uncertain” (Barnhart & Rosenstein, 1998: 2), additional tests without firm size control are performed to assess the robustness of findings.

Sample and Data Collection

This paper uses the top 500 companies listed on the ASX, ranked by market capitalisation, as the initial dataset. Each year the ASX collects information on these companies to calculate its All Ordinaries Index, the primary indicator of the Australian equity market. At December 31, 2003, the top 500 companies represent 95% of the total market capitalisation of the ASX-listed companies (Standard & Poors', 2004). Thus this dataset offers a reasonable coverage for the population of interest - Australian public corporations.

Due to lack of comparable performance data in the financial institutions section, Muth and Donaldson (1998) had to reduce their sample of Australian firms. In another Australian study on the impact of board composition on performance Kiel and Nicholson (2003) removed banks from their analysis because the recorded assets of financial institutions consist of loans which represent the use of depositors' funds. In Cotter and Silverster (2003) it is noted that trusts have unique characteristics which impact on their corporate governance practices. The trust manager and the trustee are jointly responsible for governance matters but have a fundamental separation of responsibilities and powers between them.

There are 503 firms in the 2003 list of top 500 companies provided by *Huntleys' Shareholder* (Aspect Huntley, 2003). After removing financial institutions including property trusts and investment funds from the list, a sample of 384 companies is obtained. The sources of data required to conduct this research include the *Connect 4* database containing the corporate annual reports, the *Fin Analysis* database giving market information and statistics of Australian firms, and *Huntleys' Shareholder* providing some information on firm age and lines of business. The sample is further reduced to 243 firms due to missing data.

Measurement of Research Variables

The most popular measurement of board independence in prior research is the proportion of NEDs or independent directors on the board. Based on the recommendations and listing rules as outlined earlier, five empirical proxies for board independence are adopted in this work, i.e., full board independence represented by the proportion of independent directors on the board, monitoring committee independence measured by the proportion of independent directors on the audit, nomination or remuneration committee, and chairperson independence which is a binary variable to assess whether or not the chairperson is an independent director.

If the sources of information only divide directors into executive directors and NEDs, it would be necessary to divide NEDs into independent directors and affiliated directors, using the definition of independence proposed by the ASX Corporate Governance Council as a benchmark. According to the Guidelines (ASX, 2003: 19), “[a]n independent director is independent of management and free of any business or other relationship that could materially interfere with – or could reasonably be perceived to materially interfere with – the exercise of their unfettered and independent judgement.”

Although there is a list of the persons who should not be considered independent in Box 2.1 of the Guidelines (ASX, 2003), it is unclear how long an independent director could serve on the same board. This research follows the U.K. Higgs Report (Department for Trade and Industry, 2003) which nominates ten years in relation to director tenure consideration. AASB 1031 provides guidance in relation to a quantitative assessment of materiality where an item is presumed to be material if it is equal to or greater than 10% of the appropriate base amount. Thus the materiality threshold is set at 10% of net assets or operating result before tax, for balance sheet or profit and loss items respectively. The details of directors are available in the director’s report, corporate governance statement and related party note to the financial statements. If a close analysis of the information could not provide an objective basis for determining director independence, the company is excluded from the analysis. Following the approach supported by most prior studies, the levels of board independence among sample companies are assessed at one point in time, i.e., mid-2003.

Currently there is no consensus concerning the selection of an appropriate set of measures which account for corporate financial performance (Chakravarthy, 1986). It is unlikely, however, that any one corporate performance indicator could sufficiently capture this performance dimension (Daily & Dalton, 1992). It is common to see several indices used because organizations legitimately seek to accomplish a variety of objectives, ranging from profitability to effective asset utilization and high stockholder returns (Hofer, 1983). There are two broad groups of performance measures – “accounting measures drawn from the accounting systems used by firms to track their internal affairs and financial market measures relating to the share prices and dividend streams observed in the operation of financial markets” (Devinney, Richard, Yip, & Johnson, 2005: 15).

Accounting measures are historical and therefore experience a backward and inward- looking focus. Developed as a reporting mechanism, they represent the impact of many factors, including the past successes of advice given from the board to the management team. They are the traditional mainstay of corporate performance factors (Kiel & Nicholson, 2003). However, accounting measures are “distortable”; this distortion arises from such sources as accounting procedures and policies, government policies towards specific activities, human error and purposeful deception (Devinney et al., 2005). Nevertheless, ROA and ROE are employed in this study; Muth and Donaldson (1998) noted that ROA and ROE had been extensively used in the research on board composition and firm performance.

Market-based measures are forward-looking indicators that reflect current plans and strategies, in theory representing the discounted present value of future cash flows (Fisher & McGowan, 1983). Related to the value placed on the firm by the market, market measures are not susceptible to the impact of accounting policy changes or mere timing effects. They are objective in the sense that they exist outside of the influence of individuals (Devinney et al., 2005). One of the market measures frequently endorsed in the corporate governance research is Tobin’s Q , which is used in this paper. The unavailability of many of the variables comprising the theoretical Tobin’s Q in Lindenberg and Ross (1981) and Morck, Shleifer and Vishny (1988) prevent similar calculations being conducted; like the prior studies the alternative formula for approximating Tobin’s q in Chung and Pruitt (1994) is followed.

Shrader, Taylor and Dalton (1984), in examining the literature on the relationship between strategic planning and organizational performance, found that most studies had chosen 3 or 5-year periods as their time frames, as suggested to be appropriate for a given strategic planning intervention to take effect. To reduce the influence of short-term fluctuations, the performance figures used in this study are the 3-year averages over 2001-2003.

Cho (1998), Himmelberg, Hubbard and Palia (1999) and Dafinone (2001) noted that corporate governance involved complex interrelated mechanisms, such as board composition, dividends, blockholder and managerial shareholdings, and leverage. To identify the specific effect of firm performance on board independence, drawing on the empirical models identified in the literature some covariates are introduced into the analysis to control for confounding influence, including board size, diversification, dividend payout, blockholder and executive ownership, and firm age and size. Consistent with the performance figures, dividend payout, firm size, leverage

and risk are calculated for the 2001-2003 period. Like the measures of board independence, data on board size, blockholder and executive director shareholdings, diversification and firm age are collected for the 2003 financial year.

[Insert Table 1 here]

Results

Table 2 gives a description of board characteristics for the 243 sample firms in 2003. Among the 243 chairpersons of boards of directors, 116 (47.74%) are independent, and 127 (52.26%) are not independent.

[Insert Table 2 here]

Casual observation of this table reveals that the sample contains a wide range of firms in relation to board composition. The proportion of independent directors on the board, audit committee, nomination committee or remuneration committee varies between 0% and 100%, with a mean of 41.65%, 54.57%, 23.29% or 41.15%, respectively. The total number of directors on the board ranges from 3 to 15, with an average of just over 6.

From the mean, median and standard deviation of the percentage of independent directors on the nomination committee, it could be concluded that Australian public companies, in general, had not taken up the recommendations that each company should establish a nomination committee and have a majority of its members as independent directors. Most sample companies, however, had an audit committee dominated by independent outsiders. The findings may be explained by the changes in the listing requirements of the ASX. In January 2003, the ASX introduced Listing Rule 12.7 which requires that the top 500 companies must have an audit committee and that the composition of the audit committee must comply with the best practice recommendations. It is not mandatory for these companies to have a nomination committee and a remuneration committee.

Correlation Analysis

Table 3 provides Pearson correlations among the measures for board independence and past performance,² and shows several significant coefficients. The levels of significance reported in this paper are for two-tailed tests.

[Insert Table 3 here]

First, the positive relations between full board independence, committee independence and chairman independence are significant at the 1% level. Therefore a company with a higher percentage of independent directors on the board tends to have higher percentages of independent directors on the monitoring committees, with a higher chance that the chairperson of the board is also independent.

The performance variables fall into two clusters - accounting measures of ROA and ROE, and market-based measure of Tobin's q . There is a strong positive correlation between ROA and ROE; Tobin's q is negatively related to both ROA and ROE. The findings are consistent with the Australian paper of Muth and Donaldson (1998), in which the correlation analysis shows that the performance variables fall into distinct clusters - profit performance, stock return and sales growth. Similar results were obtained by Hamilton and Shergill (1992) in New Zealand when the authors subjected individual performance variables to factor analysis to generate a composite index of performance. However, the table suggests that, in general, there is no statistically significant association between past performance and board independence.

Regressions

Table 4 provides regression results for the effect of ROA and other variables on board independence. In the table past ROA presents a negative influence on remuneration committee independence at the 5% level of significance.

[Insert Table 4 here]

Table 5 displays the effect of ROE and other variables on board independence; no significant relationship between past ROE and board independence could be located.

[Insert Table 5 here]

² A correlation analysis of all research variables for the sample period is available from the authors.

Table 6 provides regression estimates in relation to Tobin's q on full board independence, monitoring committee independence and chairman independence. There is no statistically significant association between Tobin's q and independence measures.

[Insert Table 6 here]

In the above tables there are some consistent findings with respect to the relationships between board composition and other control variables. The tables indicate that companies with higher blockholder shareholdings have lower percentages of independent directors on the board, and audit and remuneration committees. Larger firms have relatively more independent directors on nomination and remuneration committees.

Conclusions

The correlation analysis for the period 2001-2003 suggests that there is no association between the measures of performance and board independence. The regression models locate a negative impact of ROA on remuneration committee independence; this impact, however, ceases to be significant in the sensitivity tests without firm size control.³ Therefore, regarding the relationship between board independence and past performance, the data analysis supports the hypothesis developed from the institutional theory, i.e., there is no strong effect of past performance on the level of board independence.

Appointing independent directors to corporate boards could become a widespread practice in Australia, following the release of the ASX Corporate Governance Guidelines in 2003, in which the monitoring role of independent directors hypothesized by agency theory is endorsed. The evidence offered in this paper, however, provides support for the perspective that appointing more independent members to the boards may merely represent firms' attempts to comply with institutional pressures, which casts doubts on the hope that promoting board independence would add value to corporations.

It could be argued that some types of independent directors may be valuable, while others may not. This argument would also lead to the conclusion that to push for greater board independence may be fruitless, unless the independent directors have some particular attributes, which are currently unclear, other than their independence from management. As previously introduced, claims are often made that Australian market is an outsider system of corporate governance, in which the main concern is the agency conflicts between strong managers and weak dispersed shareholders. However, it is found in Dignam and Galanis (2004) that the Australian stock market is characterized by:

- significant blockholders engaged in private rent extraction;
- institutional investor powerlessness;
- a strong relationship between management and blockholders, which results in a weak market for corporate control; and
- a historic weakness in public and private securities regulation, which allows the creation and perpetuation of crucial blocks to information flow.

These characteristics suggest that Australia may have been misclassified as an outsider system; rather, it may tend towards an insider system. Consequently Dignam and Galanis (2004: 651) commented that "... a central assumption of Australian recent reform process – that the reform initiatives from the UK and the US should be adopted in Australia – may be incorrect." Therefore, policy-makers, practitioners and scholars in Australia and elsewhere should be mindful of the differences between the markets when they look for the solutions to their corporate governance issues.

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Table 1. Description of Research Variables

Measure	Abbreviation	Definition
<i>Board Independence</i>		
Full board independence	FIND	Percentage of independent directors on the board
Audit committee independence	ACIND	Percentage of independent directors on the audit committee
Nomination committee independence	NCIND	Percentage of independent directors on the nomination committee
Remuneration committee independence	RCIND	Percentage of independent directors on the remuneration committee
Chairperson independence	CMIND	Binary variable to assess whether the chairman is an independent director
<i>Firm Performance</i>		
ROA	ROA	Ratio of EBIT to book value of total assets
ROE	ROE	Ratio of profit after interest and tax to book value of equity
Tobin's <i>q</i>	TOBQ	Ratio of market value to book value of total assets*
<i>Control</i>		
Board size	SIZE	Number of directors on the board
Blockholder ownership	BLOCK	The percentage of common stocks held by the top 20 shareholders
Diversification	SEGMT	Number of industrial and geographical segments
Dividend payout	DIVR	Ratio of dividend payments to profit after interest and tax
Firm age	AGE	Number of years listed on the ASX
Firm size	LogMCAP	Natural logarithms of market value of common stocks (in \$million)
Leverage	GEAR	Ratio of short-term and long-term debt to book value of equity
Managerial ownership	EQED	Percentage of equity including options held by executive directors

* Market value of total assets is computed as market value of common stocks plus book value of preferred stocks and long term debt

Table 2. Descriptive Statistics for Boards of Directors

Variable	Mean	Median	Maximum	Minimum	Std. Dev	Skewness	Kurtosis
FIND	41.65%	40.00%	100%	0%	0.22	0.03	2.56
ACIND*	54.57%	60.00%	100%	0%	0.34	-0.25	2.06
NCIND*	23.29%	0%	100%	0%	0.33	1.07	2.78
RCIND*	41.15%	50.00%	100%	0%	0.36	0.24	1.78
SIZE	6.33	6.00	15.00	3.00	2.05	1.02	4.53

* For a firm without audit, nomination or remuneration committee, its ACIND, NCIND or RCIND is deemed to be 0%

Table 3. Pearson Correlations

Correlation	FIND	ACIND	NCIND	RCIND	CMIND	ROA	ROE1	TOBQ
FIND	1.000							
ACIND	0.752**	1.000						
NCIND	0.441**	0.368**	1.000					
RCIND	0.623**	0.552**	0.523**	1.000				
CMIND	0.531**	0.358**	0.265**	0.441**	1.000			
ROA	-0.013	0.076	0.038	-0.006	-0.070	1.000		
ROE	0.071	0.059	0.046	0.020	0.004	0.313**	1.000	
TOBQ	0.012	-0.069	-0.095	0.031	0.006	-0.367**	-0.160*	1.000

* Significance at the 5% level

** Significance at the 1% level

Table 4. Regressions for Board Independence and ROA

Coefficient	FIND	ACIND	NCIND	RCIND	CMIND
Intercept	0.427**	0.534**	-0.187	0.147	0.403
ROA	-0.050	0.031	-0.109	-0.166*	-0.870
SIZE	-0.001	0.029*	0.011	0.024	-0.056
BLOCK	-0.258**	-0.384**	-0.155	-0.372**	-1.088
SEGMT	0.006	-0.003	0.005	-0.004	-0.044
DIVR	-0.001	0.025	0.026	0.083	0.343
AGE	0.0007	0.0009	-2.78E-05	-0.0002	-0.002
LogMCAP	0.023	0.011	0.077**	0.060**	0.125
GEAR	0.013	0.015	0.007	0.015	0.132
EQED	-0.033	0.0007	-0.014	0.083	-0.404
R^2 /McFadden R^2	0.118	0.105	0.212	0.195	0.033
Std Error (Regression)	0.213	0.324	0.298	0.329	0.500
F/LR-Statistic	3.089**	2.734**	6.252**	5.626**	11.226
Durbin-Watson ⁴	1.685	1.906	2.152	1.761	

* Significance at the 5% level

** Significance at the 1% level

⁴ A Durbin-Watson close to 2 is consistent with no serial correlation, while a number closer to 0 means there probably is a serial correlation. There is no indicator of serial correlation for the models in this study.

Table 5. Regressions for Board Independence and ROE

Coefficient	FIND	ACIND	NCIND	RCIND	CMIND
Intercept	0.462**	0.539**	-0.145	0.202	0.697
ROE	0.031	0.032	0.003	-0.012	0.018
SIZE	-0.001	0.029*	0.011	0.025	-0.053
BLOCK	-0.275**	-0.390**	-0.172	-0.392**	-1.222
SEGMT	0.005	-0.004	0.004	-0.005	-0.047
DIVR	-0.013	0.025	0.009	0.060	0.213
AGE	0.0006	0.0009	-0.0001	-0.0003	-0.003
LogMCAP	0.021	0.011	0.073**	0.055**	0.099
GEAR	0.011	0.015	0.006	0.014	0.117
EQED	-0.059	-0.020	-0.024	0.080	-0.453
R^2 /McFadden R^2	0.120	0.108	0.204	0.180	0.025
Std Error (Regression)	0.213	0.323	0.300	0.332	0.503
F/LR-Statistic	3.173**	2.804**	5.958**	5.101**	8.331
Durbin-Watson	1.609	1.882	2.124	1.762	

* Significance at the 5% level

** Significance at the 1% level

Table 6. Regressions for Board Independence and Tobin's Q

Coefficient	FIND	ACIND	NCIND	RCIND	CMIND
Intercept	0.430**	0.532**	-0.121	0.159	0.650
TOBQ	0.005	-0.003	-0.007	0.014	0.011
SIZE	0.0004	0.028	0.009	0.030*	-0.049
BLOCK	-0.258**	-0.384**	-0.182	-0.375**	-1.200
SEGMT	0.006	-0.004	0.003	-0.003	-0.045
DIVR	-0.004	0.027	0.001	0.073	0.227
AGE	0.0008	0.0009	-0.0003	-4.68E-05	-0.002
LogMCAP	0.019	0.014	0.078**	0.046*	0.093
GEAR	0.013	0.015	0.005	0.015	0.119
EQED	-0.050	0.011	0.0009	0.027	-0.474
R^2 /McFadden R^2	0.116	0.105	0.207	0.187	0.025
Std Error (Regression)	0.213	0.324	0.299	0.331	0.503
F/LR-Statistic	3.041**	2.725**	6.049**	5.353**	8.358
Durbin-Watson	1.675	1.907	2.108	1.770	

* Significance at the 5% level

** Significance at the 1% level