BOARD STRUCTURE, OWNERSHIP STRUCTURE AND FIRM PERFORMANCE: A STUDY OF NEW ZEALAND LISTED-FIRMS

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ABSTRACT

This paper investigates the role of board structure and the effect of ownership structures on firm performance in New Zealand's listed firms. Several studies, the majority from the U.S., U.K. and Japan, have examined the relationship between corporate governance mechanisms, ownership structure and firm performance. Those studies yielded different results, affected by the nature of the prevailing governance system for each country. Investigating New Zealand's listed firms could enhance the diversity of the growing body of work that examines this relationship. Though the majority of studies only tested a linear relationship between variables, a number of studies have found a non-linear relationship between board structures, ownership structures and firm performance, and this study confirms the non-linear relationship. Using a balanced panel of 79 New Zealand listed firms, this study employs a Generalised Linear Model (GLM) for robustness. The result reveals that board of directors, board committees, and managerial ownership have a positive and significant impact on firm performance. Meanwhile, non-executive directors, female directors on the board and blockholder ownership lower New Zealand firm performance.

Keywords: board structure, ownership structure, firm performance, Generalised Linear Model (GLM), New Zealand listed firms

INTRODUCTION

The corporate governance function is intended to develop ownership structures and corporate governance structures for companies to ensure managers to behave ethically and make decisions that benefit shareholders. Jensen and Meckling (1976) propose agency theory, which suggests that in many modern organisations there is separation between ownership (principal) and management (agents), and the separation may resulted in agency problems, including excessive

consumption and under-investment decisions. Fama and Jensen (1983) suggest that boards reduce agency conflicts by separating management from control aspects of the decision-making process. In the United States, the Sarbanes-Oxley Act was introduced to enhance transparency and control of agency costs through enacting various governance requirements for listed firms.

Board of directors play an important role in maintaining effective corporate governance, particularly in publicly held corporations in which agency problems may arise from the separation of ownership and control. The management body in a firm is responsible for suggesting and implementing major policies; however, shareholders do not always agree with these policies, which can lead to an agency problem between management and shareholders. The board of directors is only one of several mechanisms that can mitigate agency conflicts within the firm. Capital structure, insider ownership and block ownership are also effective in controlling agency problems. Moreover, in a dynamic environment, boards become very important for the smooth functioning of organisations. Boards are expected to perform different functions. For example, monitoring of management to mitigate agency costs (Eisenhardt, 1989; Roberts, McNulty, & Stiles, 2005; Shleifer & Vishny, 1997), hiring and firing of management (Hermalin & Weisbach, 1998), providing and giving access to resources (Hendry & Kiel, 2004), and providing strategic direction for the firm (Kemp, 2006). Boards also seek to protect shareholders' interest in a competitive environment while maintaining managerial accountability to attain good firm performance (Hendry & Kiel, 2004; McIntyre, Murphy, & Mitchell, 2007). Most empirical studies find that board composition is affected not only by those corporate governance mechanisms, but also other variables, including firm size and firm performance. Claessens, Djankov, Fan and Lang (2002) propose that a good corporate governance framework can benefit the firm with easier financing, lower costs of capital, improved stakeholder favour, and overall better company performance.

In 1993, the New Zealand Government made major reforms to legislation that governs securities. This included the reform of the Companies Act, which substantially increased directors' accountability. This reform was intended to strengthen internal control to align the interests of managers and shareholders. Prevost, Rao and Hossain (2002) investigated the impact of the Companies Act 1993 on corporate governance mechanism and firm performance and found no impact.

Several studies have examined the relationship between corporate governance mechanisms, ownership structure and firm performance across countries with different characteristics, with the majority in the U.S., the U.K. and Japan. The studies yielded different results, affected by the nature of the

prevailing governance system for each country. Investigating New Zealand's listed firms could add diversity to the growing body of work that examines this relationship. Compared with the other countries that have been studied, New Zealand has a smaller market, so its listed firms are likely to perform differently. In addition, New Zealand is dominated by small and medium enterprises and agriculture, which is different to other developed countries, and which may reflect different ownership structures, corporate governance conduct and firms' financial performance. Thus, it is important to investigate the relationship between corporate governance mechanisms, ownership structure and firms' financial performance in the New Zealand context.

Demsetz and Villalonga (2001) find no significant relationship between ownership structure and firm performance. They suggest that ownership structures differ across firms because of differences in the circumstances facing firms, particularly in regard to scale of economies, regulations and the environment stability in which they operate. Bhabra (2007) finds a significant non-linear relationship between ownership structure and firm performance in New Zealand's (N.Z.) listed firms, and suggests that the non-linear relationship is robust to differences in governance structures across market. In 2001, the mean proportion of stock held by the top 20 shareholders in N.Z. was 73%, which indicates that N.Z. firms are highly concentrated, hence inducing better monitoring and reducing the potential for entrenchment of managers (Hossain, Prevost, & Rao, 2001). From 2007 to 2011, the average mean proportion of stock held by the top 20 shareholders in N.Z. was 46.73%, and this indicates that N.Z. firms tend to have moderate ownership concentration.

Furthermore, in recent years, Norway and France have imposed quotas for female representation on their boards of directors. Adams and Ferreira (2009) find that more gender-diverse boards are tougher monitors; however, in firms with weak shareholder rights, the relationship between firm performance and female representation on boards is negative. A greater female representation on boards not only increases the size of the human capital pool from which directors can be drawn, but also provides some additional skills and perspectives that may not be possible with all-male boards.

Though the impact of board structures and ownership structures on N.Z. firms' performance has been extensively studied in recent years, for example, Chin, Vos and Case (2004), Elayan, Meyer and Lau (2003), Hossain et al. (2001), Prevost et al. (2002), Reddy, Locke, Scrimgeour and Gunasekarage (2008), and Reddy, Locke and Scrimgeour (2010), the results remain inconclusive. Thus, this study adds empirical evidence for the relationship between board composition and firm financial performance with more recent data, which is important to

observe the changes in evidence over time. Moreover, this study caters for non-linearity making it more robust than prior research. Furthermore, it is necessary to empirically examine whether N.Z. firms perform better if they follow best practice recommendations for board characteristics.

In addition, the results from this study show how board structure and ownership structures influence New Zealand listed firms' performance. Firms in New Zealand are generally smaller when compared to other developed countries so unquestioning compliance to different codes and principles from elsewhere is inappropriate for New Zealand firms. The codes and principles may have to be customised to fit specific needs in a New Zealand context. Lastly, this study provides recent evidence about which factors contribute to increasing New Zealand listed firms' financial performance and is the first study to address the non-linearity issue in New Zealand context.

LITERATURE REVIEW

Board composition consists of board demographics, board structure, board recruitment, board member motivation and criteria, board education and evaluation, and board leadership. Board composition is one of the important factors affecting firm financial performance. There are some previous studies on the relationship between board compositions and firm performance. Callen, Klein and Tinkelman (2003), Erhardt, Werbel and Shrader (2003), Kang, Cheng and Gray (2007), and Sheridan and Milgate (2005) find that board composition is positively correlated with firm financial performance. Meanwhile, Eisenberg, Sundgren, and Wells (1998), Garg (2007) and Rose (2007) find that board composition is inversely related to the value of the firm, because larger boards are likely to have higher coordination costs, which reduces their ability to effectively monitor management. Chaganti, Maharjan and Sharma (1985) compare board size between failed and successful firms and reveal that succesful firms tend to have bigger boards. However, Hermalin and Weisbach (1991) find no significant relationship between board composition and performance.

This study particularly focuses on various aspects of board composition and how they affect firm performance; for example, gender, ethnicity and age are part of board demographics; board size, board committees and board independence are part of board structure. Board size varies from board to board, depending on factors such as the type of the firm, the asset size and the board culture. Then, what is the best size for a board of directors? There are many opinions, academic and professional, about the ideal board number. Yet in an era of sustained scrutiny and the potential for more government oversight, it is more

important than ever for boards to revisit their size and determine the right number to carry out effective and responsible firm governance.

Coles, Daniel and Naveen (2008) re-examine the ideal number for a board by classifying firms into complex or simple firm and they find complex firms have larger boards than simple firms. There are some perspectives on how big a firm's board size should be. From an agency perspective, it can be argued that a larger board is more likely to be vigilant for agency problems simply because a greater number of people will be reviewing management actions. From a resource dependence theory perspective, it can be similarly argued that a larger board brings greater opportunity for more links and hence access to resources. From a stewardship theory perspective, it is the ratio of inside to outside directors that is of relevance, since inside directors can bring superior information to the board for decision-making. Larger boards are likely to have more knowledge and skills at their disposal, and the abundance perspectives they assemble are likely to enhance cognitive conflict. Several studies have examined the impact of corporate governance mechanisms on firm performance across countries operating under different characteristics (Callen et al., 2003; Erhardt et al., 2003; Garg, 2007; Kang et al., 2007; Rose, 2007; Sheridan & Milgate, 2005). In the New Zealand context, Chin et al. (2004), Elayan et al. (2003), Hossain et al. (2001), Prevost et al. (2002), and Reddy et al. (2008) and Reddy et al. (2010) have examined the impact of corporate governance on firm performance.

The number of board members is considered to be one of the factors affecting firm performance, but there is no one optimal size for a board. Jensen (1983) suggests that a board should have a maximum of seven or eight members to function effectively. However, Jensen (1986) also suggests that smaller boards enhance communication, cohesiveness and co-ordination, which make monitoring more effective. This proposition is backed by empirical evidence from the "for profit" literature, that shows smaller board size is associated with higher firm value (Eisenberg et al., 1998; Yermack, 1996). Conversely, agency theory and resource dependency theory could also support the proposition that larger board size gives a firm greater value. From an agency perspective the larger board size equates to more effective monitoring of management by reducing the domination of the CEO on the board and therefore leads to greater firm performance (Singh & Harianto, 1989). Resource dependency suggests that organisations may increase board size in order to maximise provision of resources for the organisation (Hillman & Dalziel, 2003). There are a number of studies in investigating whether or not board size has an effect on firm performance. Coles et al. (2008) find that complex firms tend to have larger boards, and it is likely to increase firm performance. In contrast, Yermarck (1996) and Guest (2009) find an inverse relationship between board size and firm

performance. Hossain et al. (2001) and Reddy et al. (2008) also find similar results for New Zealand listed-firms. Furthermore, the median board size for New Zealand firms is six members which is less than what Jensen suggests for firms in the U.S. However, the smaller board size in New Zealand firms fits with its small market characteristic. Though the result is inconclusive, it is assumed that larger boards provide more expertise, greater management oversight and access to a wider range of resources; therefore to balance the skills required in the board room, New Zealand firms may require larger boards.

> H1: There is a positive relationship between board size and firm performance.

In relation to board size, Coles et al. (2008) suggest that larger boards tend to have more outside directors, hence numerous studies suggest that non-executive directors have a positive effect and find that boards dominated by non-executive directors are more likely to act in shareholders' best interests, and more independent boards improve performance through better monitoring of management (Borokhovich, Parrino, & Trapani, 1996; Hermalin & Weisbach, 1988). Ezzamel and Watson (1993), and Hossain et al. (2001) find a positive relationship between board independence and firms' financial performance. In contrast, Agrawal and Knoeber (1996), Klein (1998) and Bhagat and Black (2002) find a negative relationship between board independence and performance, while Hermalin and Weisbach (1991) and Mehran (1995) find no relationship between board independence and firms' performance. Monitoring the actions of managers is a crucial component for management effectiveness, thus the greater the number of non-executive directors the more likely they are to increase the board vigilance which minimises the agency problem and increases firm performance.

> H2: There is a positive relationship between the percentage of non-executive directors on the board and firms' performance.

Gender is arguably the most debated diversity issue, not only in terms of board diversity, but also in politics and in other general societal situations. The issue of gender in board diversity is especially timely given the current movement in Europe to increase the number of women on boards. The concept of gender diversity is supported by the theoretical literature; for example, from an agency theory perspective, an increase in diversity will provide a balanced board that will ensure that no individual can dominate the decision-making (Hampel, 1998). From a resource dependency viewpoint, the increase in board diversity may well provide linkages to additional resources, and from a stakeholder perspective, diversity provides representation for different stakeholders (Keasey, Thompson, & Wright, 1997). Huse and Solberg (2006) suggest that diversity

improves organisational value and performance through additional perspectives. Overall, female directors add additional skills and perspectives that are different from male directors.

Carter, Simkins and Simpson (2003) examine the relationship between board diversity and firm value for Fortune 1000 firms. They find a statistically significant positive relationship between the fraction of women or minorities on the board and firm value. Similarly, Jurkus, Park and Woodard (2008) investigate gender diversity in the top management of Fortune 500 firms and find that gender diversity is positively associated with both performance and stock valuation. Carter et al. (2003) and Bonn (2004) provide empirical evidence to support the view that increased gender diversity has a positive relationship with firm value. Kang et al. (2007) examined the extent of board diversity and independence in the top 100 Australian corporations in 2003 and the influential factors involved. The main findings of their research on the extent of diversity relating to gender, the age of directors, and independence in Australia's largest listed companies, reveal mixed results. In the case of gender, it is important to note that 33 companies (from a sample of 100 companies) did not have a female director. While 51 companies had one female director, only 15 companies had two or more female directors. Significantly, only 10.37% of the total director positions in Australia's top companies are occupied by females. Furthermore, only the level of shareholding concentration was found to be a significant factor in determining gender diversity.

It has been suggested that there are two advantages in having women on boards. First, women are not part of the "old boys" network, which allows them to be more independent. Second, they may have a better understanding of consumer behaviour, the needs of customers, and opportunities for companies in meeting those needs (Brennan & McCafferty, 1997). Women currently make up only 12.5% of board memberships in the UK and Australia. Meanwhile, 9.3% of directors in New Zealand are women though women make up nearly 50% of the New Zealand workforce (*Women on Boards*, 2012). The New Zealand Securities Commission (NZSC) is trying to push the representation of female directors on boards. The NZSC requires all listed-companies to declare the number of women on their boards from the 2012 fiscal year (*Waikato Times*, 2012). Furthermore, other countries have taken various actions. Norway, Iceland and Spain have quotas of 40% female representation on boards, and France has proposed a similar quota. Meanwhile, New Zealand has not joined the international trend to push for more female directors (Slade, 2011).

H3: There is a positive relationship between the proportions of female board directors and firm performance.

Board members are also part of committees, therefore, it is beneficial to examine various aspects of committees. The NZSC (2004) recommends that companies have audit committees and remuneration committees to oversee the audit of financial statements and to set up remuneration for executive officers and directors. The committees are important to ensure that the financial procedure is carried out well and the directors are appropriately compensated, hence mitigating any agency problems. Findings from this study will improve our understanding of linkage between committees, agency problems and firm performance. Felo, Krishnamurthy and Solieri (2003) empirically examine the relationship between expertise, independence, the size of audit committees and the quality of financial reporting. They find that expertise and size are positively related to financial reporting quality but are not related to committee independence. They state that given the prior evidence of a negative relationship between financial reporting quality and cost of capital, firms could improve their reporting quality by appropriately structuring their audit committees, thus reducing their cost of capital. The presence of audit committees in public corporate entities has a positive effect on reducing agency cost when measured by cost to revenue (Reddy et al., 2010). Furthermore, an effective nomination committee should ensure the appointment of non-executive directors whose interests are aligned with those of the shareholders and reduce any agency problems.

H4: There is a positive relationship between audit committee and firm performance.

H5: There is a positive relationship between nomination committee and firm performance.

H6: There is a positive relationship between remuneration committee and firm performance.

The relationship between ownership structure and firm performance has been the subject of interest in the literature. There are mixed results on how ownership structure impacts on firm performance. Most of the empirical results were derived from developed countries such as the U.S. and U.K. However, differences in prevailing institutional, legal and economic influences between the U.S. and other countries resulted in different impacts of ownership structure on firm performance. According to the agency model, Jensen and Meckling (1976) argue that there is a convergence of interests between shareholders and managers as the managers' ownership increases, and thus higher managerial ownership should reduce agency costs and hence increase firm performance. Morck, Shleifer and Vishny (1988) and McConnell and Servaes (1990) find a significant relationship between managerial ownership and firm performance. However, Demsetz (1983) implies that the increased level of insider ownership may reduce

corporate performance. This notion is classified as the entrenchment hypothesis, an explanation of which is offered by Stulz (1988), who argue that in situations with a low level of managerial ownership, firm value will increase because rights to transfer control will be more formally vested with insiders. Further, insiders are more organised than diffused shareholders and will have a greater probability of securing high premiums in the case of takeovers.

> H7: There is a positive relationship between managerial ownership and firm performance.

The role of blockholders is likely to vary over time periods and countries as a function of the legal system and other regulations. Blockholders may directly influence dividend policy, and managerial ownership may directly influence capital structure policy. However, more complicated interaction effects are possible and perhaps more likely; for example, when there is a large stakeholder, management usually becomes less accountable to shareholders and more accountable to the large controlling stakeholder who will have considerable control over the firm in excess of the cash flow rights. This may reduce the incentive to expropriate funds but not eliminate it.

In 2001, the mean proportion of stock held by the top 20 shareholders in N.Z. was 73%, which indicates that New Zealands firms are highly concentrated, which consequently induces better monitoring and reduces the potential for entrenchment of managers (Hossain et al., 2001). Similarly, Healy (2003) found that institutional ownership and external block holding in N.Z. counts for 69%, and suggests that higher institutional ownership implies greater monitoring. Furthermore, the average mean proportion of stock held by the blockholders in N.Z., during the period 2007 to 2011, was 50% with maximum value 98.88%, which indicates that the institutional ownership is widely dispersed and hence better monitoring takes place.

Some studies find that blockholders' ownership is likely to reduce agency costs. Hartzell and Starks (2003) report that blockholders' ownership is positively related to the performance sensitivity of managerial compensation; thus, blockholders' ownership monitoring tends to be complementary to incentive compensation systems, mitigating agency problems between shareholders and managers. On the other hand, Doukas, Kim and Pantzalis (2000) argue that blockholders have neither the time nor expertise to act as effective monitors. Furthermore, Singh and Davidson (2003) find no evidence that blockholders' ownership affects agency costs.

> H8: There is a positive relationship between blockholders' ownership and firm performance.

METHODOLOGY

 Data and Variables

This study uses data from the annual report of New Zealand listed firms for the period of 2007–2011, collected from the New Zealand Stock Exchange (NZX) deep archive. Those firms with any missing observations for any variable in the model during the research period are dropped, and thus a balanced panel data of 79 New Zealand listed firms were observed, from total of 147. Those 79 firms are from six industries classifications; primary, energy, goods, property, service and investment. Though only 79 firms were included, the sample will suffice in capturing aggregate leverage in the country because the listed firms can be used to represent the whole industry in New Zealand.

The dependent variable is firm performance, which is measured by Tobin's Q and Return on Assets (ROA). Tobin's Q mixes market value with accounting value in many studies (Himmelberg, Hubbard, & Palia, 1999; McConnel & Servaes, 1990; Zeitun & Tian, 2007). ROA is an accounting-based performance measure (Demsetz & Villalonga, 2001) and is included for robustness. The explanatory variables are the number of directors on the board, the number of non-executive directors on the boards, the number of female directors on the board, audit committee, nomination committee, remuneration committee, managerial ownership and block holders' ownership. Leverage, firm size and industry level are used as control variables, as it is important to control for the possibility of spurious correlation between board structures, ownership structure and firm performance that stems from an industry effect.

To examine the effect of board size, this study uses the total number of board members (Bonn, 2004; Yermack, 1996). A non-executive director is measured as the proportion of non-executive directors on the board. Gender diversity is measured as the proportion of female directors on the board (Carter et al., 2003). Board committees are classified into three committees; audit committee, nomination committee and remuneration committee. These board committees are measured using a dummy variable; every committee takes value 1 if the firms have each committee otherwise it is 0. Managerial ownership is measured as the percentage of managers as equity shareholders (Demsetz & Villalonga, 2001). Further, the managerial ownership is classified into three groups; inside ownership concentration 1, inside ownership concentration 2 and inside ownership concentration 3. The average inside ownership is 16.4%. To determine the group classification, the lower bound and upper bound 10% is used, thus the inside ownership concentration 1 is less than 15.4%, the ownership concentration 2 is a range of 15.4% to 17.4% and the ownership concentration 3 is greater than 17.4%. This classification is arbitrary and is justified based on the

average insider ownership finding. Blockholders' ownership is measured as the percentage of the top twenty ownerships.

Method

This study uses panel data, which allows the unobservable heterogeneity for each observation in the sample to be eliminated and multicollinearity among variables to be alleviated. Maddala and Lahiri (2009) specify problems that might be present in the regression model, such as heteroskedasticity, multicollinearity and endogeneity problems. Those problems cause inconsistency in the Ordinary Least Square (OLS) estimates.

As can be seen in Table 1, most cross-correlations for the independent variables are fairly small, therefore giving less cause for concern about the multicollinearity problem. Furthermore, the Breusch-Pagan test for heteroskedasticity results in 176.81 (*p-value 0.000*), indicating that variances among the explanatory variables are not constant. In addition, the skewness and kurtosis result indicates that the data has non-normal distribution.

Table 1
Heteroskedasticy and normality tests

Source	Chi^2	df	p
Heteroskedasticity	176.81	20	0.0000
Skewness	62.07	5	0.0000
Kurtosis	5.20	1	0.0226
Total	244.08	26	0.0000

While endogeneity is prevalent across many aspects of corporate finance, the relationship between corporate governance and firm performance is likely to be infiltrated with the endogeneity problem (Bhagat & Black, 1999; Denis & Sarin, 1999; Coles et al., 2008, Wintoki, Linck, & Netter, 2009). It is important that endogeneity is taken into account as the presence of unobserved influences is likely to generate a degree of correlation between regressors and the error terms, which leads to biased estimates of the regressors' coefficients. Theory and empirical work suggest that corporate governance is dynamically endogenous with respect to firm performance. Furthermore, in previous work in the New Zealand context done by Hossain et al. (2001), the endogeneity problem is not addressed as they state that endogeneity in corporate governance is unclear as to which variables are endogenous/exogenous, hence they affirm that ordinary least square is a more appropriate method. Moreover, though Reddy et al. (2010) address the endogeneity problem in their New Zealand study, which they

explained that the endogeneity is caused by an inverse relationship; however, justifications provided are inadequate. Wintoki et al. (2009) assert that any type of endogeneity, such as past performance, simultaneity and unobservable heterogeneity, is likely to be present between board structure and firm performance. In contrast to Wintoki et al. (2009), using the Durbin-Wu-Hausman test for endogeneity, this study confirms no endogeneity. The different results of the endogeneity test in this study and previous studies may be due to different observation/data characteristics, different corporate governance practices and different institutional factors; most of those previous studies were based on U.S. firms. Thus the result of the endogeneity test in this study cannot reject the null hypothesis.

Though the majority of studies only tested the linear relationship between variables, a number of studies have found a non-linear relationship between board composition, ownership and performance (McConnell & Servaes, 1990; Hermalin & Weisbach, 1991; Holderness, Kroszner, & Sheehan, 1999; Morck et al., 1988), and this study confirms the non-linearity, using a non-linearity test, with results of 8.45 with *p*-value 0.4896, which means the null hypothesis of non-linearity cannot be rejected. Therefore, to address the non-linearity problem in the data, this study uses a non-linear model, Generalised Linear Models (GLM), as they may yield a more efficient and unbiased estimator (Cameron & Trivedi, 2010). According to Cameron and Trivedi (2010), GLM are essentially generalisations of non-least square, hence it is optimal for a non-linear regression model with homoskedastic additive errors, but also appropriate for other types of data where there is not only intrinsic heteroskedasticity but also a natural starting point for modelling the intrinsic heteroskedasticity. The GLM estimator $\hat{\theta}$ maximises the linear-exponential-family (LEF) log likelihood

$$Q(\theta) = \sum_{i=1}^{N} [\alpha\{m(x_i, \beta)\} + b(y_i) + c\{m(x_i, \beta)\}y_i] \tag{1}$$

where $m(x, \beta) = e(y|x)$ is the conditional mean of y, different specified forms of the functions a(.) and c(.) correspond to different members of the LEF, and b(.) is a normalising constant.

The regression model is specified as:

$$FP_{it} = \beta_0 + BS_{it} + NED_{it} + FD_{it} + Aud_{it} + Nom_{it} + Rem_{it} + BOWNPS_{it} + IOWNPS_{it}$$
$$+ IOWNPS1_{it} + IOWNPS2_{it} + IOWNPS3_{it} + CV_{it} + \varepsilon_{it} \tag{2}$$

where:

FV = Firm performance
BS = Directors on the board
NED = Non-executive directors on the board
FD = Female directors on the board
Aud = Audit committee
Nom = Nomination committee
Rem = Remuneration committee
BOWNPS = Blockholder ownership
IOWNPS = Inside ownership
IOWNPS1 = Inside ownership concentration 1
IOWNPS2 = Inside ownership concentration 2
OWNPS3 = Inside ownership concentration 3
CV = Control variables (leverage, firm size and industry dummy)

RESULTS

Table 2 presents the descriptive statistics of all variables. The mean value of firm performance is 0.1293 with a range from 0.0001 to 8.4280, suggesting that the majority of firms have low performance. A Tobins' Q value from 0 to 1 is considered as a low performance, and it may indicate that the stock is undervalued. Board size in New Zealand listed firms' ranges from 3 to 12 directors, with 6 being the average, suggesting that most New Zealand listed firms have sufficient directors. The range of non-executive directors sitting on boards is from three to nine, with an average of four. When compared to the average board size of six, the number of non-executive directors appears to be adequate at 50%. The number of female directors sitting on boards is one or two; the average is one, or 17% of board composition. This lower representation of female directors suggests that the involvement of women is still rare in New Zealand listed firms. The figure is lower than the proportion in the U.S. (Adams & Ferreira, 2009; Simpson, Carter, & D'Souza, 2010). The mean value for blockholder ownership is 50.04%, suggesting that the blockholder owernship in New Zealand is moderate. The presence of blockholders has similar benefits to those of ownership concentration in providing supervision and monitoring, however, a problem arises when blockholders extract personal benefit at the expense of minority shareholders and other stakeholders. Thus, the moderate proportion of blockholder ownership in New Zealand listed firms is beneficial to the firm as it can overcome the agency problem and increase firm performance. The mean value for managerial ownership is 17.86%, suggesting that the managerial ownership in New Zealand is moderately high as other studies

classify the managerial ownership at 5% to 20% as moderate, while below 5% is classified as low and above 20% as high managerial ownership.

Table 2
Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Tobins' Q	395	0.1293	0.8286	0.0001	8.4280
ROA	395	0.0408	0.0583	-0.3903	0.2716
Board Size	395	6.0767	0.1249	3.0000	12.000
Non-Executive Directors	395	4.1990	0.1996	3.0000	9.0000
Female Directors	395	1.0025	0.1050	1.0000	2.0000
Audit Committee	395	0.9114	0.2845	0.0000	1.0000
Nomination Committee	395	0.5266	0.4999	0.0000	1.0000
Remuneration Committee	395	0.7646	0.4248	0.0000	1.0000
Blockholder Ownership	395	0.5004	0.3254	0.0001	0.9886
Inside Ownership	395	0.1786	0.2455	0.0000	0.9770
Inside Ownership_Concentration 1	395	0.6785	0.4677	0.0000	1.0000
Inside Ownership_Concentration 2	395	0.0000	0.0000	0.0000	0.0000
Inside Ownership_Concentration 3	395	0.3012	0.4594	0.0000	1.0000
Leverage	395	0.4778	0.2414	0.0100	0.9900
Firm Size	395	5.5184	1.2742	2.7945	9.7071
Industry Primary	395	0.1519	0.3594	0.0000	1.0000
Industry Energy	395	0.0759	0.2653	0.0000	1.0000
Industry Goods	395	0.1772	0.3823	0.0000	1.0000
Industry Property	395	0.0633	0.2438	0.0000	1.0000
Industry Service	395	0.4177	0.4938	0.0000	1.0000
Industry Investment	395	0.1013	0.3026	0.0000	1.0000

The mean value of leverage is 0.47, with a range of 0 to 0.99, suggesting that all firms have leverage close to the average leverage of industry. According to Statistics New Zealand (2004), New Zealand's firms utilised debt rather than equity financing, which accounts for 72% total debt compared to Australian firms which utilised only 25% of debt financing in 2003 (Welch, 2003). In addition, the average total debt utilised by New Zealand's firm accounts for 45%, which is close to the range of the average total debt for most developed countries in the 1990s, being 50% to 60% (Rajan & Zingales, 1995). Comparing two different periods might be unproductive or unreliable, therefore, based on recent studies by Bessler, Drobetz and Gruninger (2011), the average total debt for all firms in the world is 25%, for non-U.S. firms it is 26%, for U.S. firms 23%, for common law

countries 25% and for civil law countries 27%; based on this, it seems New Zealand firms use of debt financing is above the average.

Table 3 presents the correlation between Tobin's Q and independent variables and Table 4 presents the correlation between ROA and independent variables. Apart from non-executive directors, female directors and blockholder ownership, all independent variables exhibits a positive correlation with Tobin's Q, indicating that a higher proportion of non-executive directors, a higher the proportion of female directors and higher proportion of blockholder ownership effect a decrease in firm performance in N.Z. firms. Furthermore, apart from female directors and blockholder ownership, all independent variables exhibits a positive correlation with ROA, indicating the higher the proportion of female directors and a higher proportion of blockholder ownership effect a decrease in firm performance amongst New Zealand firms. From all variables, only audit committee and remuneration committee yield the highest correlation, which is close to 0.6000. None of the remaining variables are correlated to an extent that merits noting. Further, low correlation among explanatory variables indicates no dependency among them, thus indicating low likelihood of multicollinearity in the OLS regressions.

Table 5 presents the regression results for Tobin's Q and ROA. For Tobin's Q, the board size coefficient exhibits a significant and positive relationship with firm performance, which supports the agency and resource dependency theory that larger board size creates greater firm value and hence supports the testable hypotheses. This result contrasts with those studies done by Hossain et al. (2001) for the N.Z. context, and Yermack (1996), Bhagat and Black (2002) for the U.S. context. The contradictory results are caused by the data characteristics and different methods employed. The result indicates that large boards improve N.Z. firm performance, as large boards provide greater monitoring, increase the independence of the board and counteract the managerial entrenchment, hence increasing firm performance (Coles et al., 2008). Furthermore, the positive coefficient of board size suggests that large boards are an effective mechanism for monitoring manager performance and achieving long-term strategic goals in New Zealand firms. Similar to the result for Tobin's Q, the board size coefficient for ROA yields a significant and positive relationship with firm performance, suggesting that the greater the board size, the higher the firm performance. Overall, the board size coefficients for Tobin's Q and ROA are closely similar.

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Table 3
Correlation matrix

	Tobins' Q	Board Size	Non-Executive Directors	Female Directors	Audit Committee	Nomination Committee	Remuneration Committee	Blockholder Ownership	Inside Ownership	Inside Ownership Concentration 1	Inside Ownership Concentration 2	Inside Ownership Concentration 3
Tobins' Q	1.0000											
Board Size	0.0037	1.0000										
Non-Executive Directors	-0.1016	0.1298	1.0000									
Female Directors	-0.0124	0.1565	-0.0320	1.0000								
Audit Committee	0.0479	0.1267	-0.0142	0.0242	1.0000							
Nomination Committee	0.1467	0.2376	0.0757	0.2006	0.3288	1.0000						
Remuneration Committee	0.2603	0.2169	0.0561	0.0387	0.5619	0.5853	1.0000					
Blockholder Ownership	-0.1900	0.0055	-0.1300	0.0219	0.1697	0.1268	0.1062	1.0000				
Inside Ownership	0.0225	-0.2339	-0.2167	-0.0096	0.1852	-0.0198	-0.0021	0.2448	1.0000			
Inside Ownership_Concentration 1	0.0012	0.1595	0.1539	0.0206	-0.1956	-0.0231	-0.0882	-0.1370	-0.8382	1.0000		
Inside Ownership_Concentration 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	
Inside Ownership_Concentration 3	-0.0057	-0.1430	-0.1589	-0.0216	0.1853	0.0258	0.0653	0.1585	0.8521	-0.9539	0.0000	1.0000

Table 4
Correlation matrix

	ROA	Board Size	Non-Executive Directors	Female Directors	Audit Committee	Nomination Committee	Remuneration Committee	Blockholder Ownership	Inside Ownership	Inside Ownership Concentration 1	Inside Ownership Concentration 2	Inside Ownership Concentration 3
ROA	1.0000											
Board Size	0.0172	1.0000										
Non-Executive Directors	0.0105	0.1298	1.0000									
Female Directors	-0.0229	0.1565	-0.0320	1.0000								
Audit Committee	0.0452	0.1267	-0.0142	0.0242	1.0000							
Nomination Committee	0.1478	0.2376	0.0757	0.2006	0.3288	1.0000						
Remuneration Committee	0.0409	0.2169	0.0561	0.0387	0.5619	0.5853	1.0000					
Blockholder Ownership	-0.1221	0.0055	-0.1300	0.0219	0.1697	0.1268	0.1062	1.0000				
Inside Ownership	0.0107	-0.2339	-0.2167	-0.0096	0.1852	-0.0198	-0.0021	0.2248	1.0000			
Inside Ownership_Concentration 1	0.0382	0.1595	0.1539	0.0206	-0.1956	-0.0231	-0.0882	-0.1370	-0.8382	1.0000		
Inside Ownership_Concentration 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	
Inside Ownership_Concentration 3	-0.0464	-0.1430	-0.1589	-0.0216	0.1853	0.0258	0.0653	0.1585	0.8521	-0.9539	0.0000	1.0000

Table 5
Regression results

Variables	*Tobins' Q*	*ROA*
Constant	-1.3877** (0.6620)	0.0019* (0.1928)
Board Size	0.2443** (0.3329)	0.0380** (0.0177)
Non-Executive Directors	-0.4568** (0.1989)	0.0492*** (0.0086)
Female Directors	-0.3521* (0.3993)	-0.0159* (0.0207)
Audit Committee	0.8361*** (0.1660)	0.0323*** (0.0101)
Nomination Committee	0.1439 (0.0990)	0.0154*** (0.0048)
Remuneration Committee	0.7270*** (0.1277)	0.0269*** (0.0057)
Blockholder Ownership	-0.3130*** (0.1026)	-0.0049* (0.0042)
Inside Ownership	0.0255** (0.3241)	0.0029* (0.0172)
Inside Ownership_Concentration 1	0.0245** (0.2387)	0.0110* (0.0095)
Inside Ownership_Concentration 2	(Omitted)	(Omitted)
Inside Ownership_Concentration 3	-0.0148** (0.2461)	-0.0087* (0.0091)

(Continue on next page)

Table 5 (*Continued*)

Variables	Tobins' Q	ROA
Leverage	0.0921 (0.1563)	0.0021 (0.0070)
Firm Size	0.2241*** (0.0445)	0.0081* (0.0020)
Industry_Primary	0.3286 (0.4753)	0.0096 (0.1973)
Industry_Energy	0.0400 (0.4911)	0.1764 (0.2047)
Industry_Goods	0.4478 (0.4739)	0.0166 (0.1962)
Industry_Property	1.2522*** (0.5031)	0.0178 (0.2076)
Industry_Service	0.3127 (0.4628)	0.0311 (0.1924)
Industry_Investment	0.4591 (0.4918)	0.0104 (0.2012)
Groups	79	79
Wald-Chi^2	186.84	105.10
Prob.Chi^2	0.0000	0.0000

Note: Standard errors in parentheses are for coefficients. *sig. at 10% level, **sig. at 5% level, and ***sig. at 1% level

The coefficient for non-executive directors for Tobin's Q is negative and significant, suggesting that the greater the number of non-executive directors on the board the lower the firm performance. The result for this study is similar to one done by Bhagat and Bolton (2008) for a U.S. context but is in contrast with studies done by Hossain et al. (2001) and Reddy et al. (2010) for a New Zealand context. They find a non-significant effect of non-executive directors on firm performance. However, though the result found by Reddy is not significant, it has negative coefficient which is similar to the coefficient yielded in this study. The negative coefficient of non-executive directors shows that compliance with NZSC recommendations has increased costs which have a negative effect on firms' financial performance. In contrast with the result for Tobin's Q, the non-executive directors' coefficient for ROA is positive and significant. The different result is likely due to the different measurement; the market-based measure and accounting-based measure. The negative relationship between non-executive directors and firm performance may be caused by the very high blockholders ownership concentration which can interfere with effective corporate governance of the firm, and as a consequence, the non-executive directors may not play a pivotal role in effective governance of the firm.

Generally, greater female representation on boards not only increases the size of the human capital pool from which directors can be drawn, but also provides some additional skills and perspectives that may not be possible with all-male boards. However, the female director coefficient exhibits a significant and negative relationship with firm performance both for Tobin's Q and ROA,

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which does not support agency and resource dependency theories that an increase in diversity mitigates domination of decision making processes and encourages diversity of viewpoint, and hence this study rejects the testable hypotheses. The result indicates that there appears to be no New Zealand evidence of the effectiveness of female directors' impact on firm performance. Furthermore, there is a regular stream of media commentary suggesting that New Zealand firms are laggards when it comes to appointing females.

Using Tobin's Q, the audit committee and remuneration committee yield a significant and positive relationship with firm performance; the nomination committee form does not. Meanwhile, for ROA, all committees exhibit a positive and significant relationship with firm performance. Overall, the board committees show a positive and significant relationship with firm performance, suggesting the existence of the board committee increases firm performance. Board committees are seen to be an important mechanism for reducing agency costs, hence improving firm performance, and the results also support the view that compliance with NZSC requirements improved firm financial performance.

The blockholder ownership coefficient yields a significant and negative relationship with firm performance (Tobin's Q and ROA), indicating that the higher the blockholder ownership the lower the firm performance. This result is similar to the work of Fitzsimons (1997) and Hossain et al. (2001) and might be caused by the nature of ownership in New Zealand, where the higher the ownership level, the more potential there is for agency problems, and the excessive ownership concentration in the New Zealand corporate environment may be detrimental to firm performance. The managerial ownership coefficient exhibits a significant and positive relationship with firm performance (Tobin's Q and ROA), suggesting that the higher the managerial ownership, the higher the firm performance. Furthermore, this result is similar to the work of Hossain et al. (2001). The result supports the agency model theory that higher managerial ownership should reduce agency costs and hence increases firm performance, and therefore it can be regarded as one of the effective mechanisms for mitigating agency problems in New Zealand firms Furthermore, apart from the coefficient for managerial ownership concentration group 1, the coefficients for managerial ownership concentration group 2 and group 3 are negative, suggesting that at some point higher managerial ownership may be detrimental to New Zealand firms' performance.

Overall, the findings indicated that New Zealand firms have good governance practices, such as the number of directors and board committees (audit, remuneration and nomination committee). Results show that apart from non-executive directors, female directors, and blockholder ownership, all variables have a significant effect on firms' financial performance across two

financial measures (Tobin's Q and ROA). The reason could be that non-executive directors and female directors on board are appointed solely to fulfil the NZSC recommendations and they may lack knowledge about the company/industry and therefore add little or no value to the firm.

CONCLUSIONS

In order to improve boards' performance, the Institute of Directors in New Zealand has released a code of practice for directors to guide them in performing their duties in accordance with New Zealand's legal requirements and the Institute of Directors' standards. In addition, the New Zealand Securities Commission has proposed a set of nine principles and guidelines on best corporate governance practices (New Zealand Securities Commission, 2004). Though these principles are used by many firms, they are non-binding in nature and the impact of these principles on New Zealand firms is yet to be examined. Thus, this paper is an attempt to empirically test the impact of board composition and ownership structures on firm performance in the New Zealand context, by examining a recent dataset of New Zealand-listed firms. Endogeneity is expected to be present between corporate governance and firm performance. Using the Durbin-Wu-Hausman test for endogeneity, this study confirms no endogeneity. Results suggest that the endogeneity problem documented in the U.S. context is unlikely to be present in New Zealand during the period of study. Furthermore, most of the previous New Zealand studies address no endogeneity; for example, the study done by Hossain et al. (2001). Finally, this study confirms a non-linear relationship among variables by fitting a GLM that nests models advanced in previous research by Morck et al. (1988), Hermalin and Weisbach (1991), and Holderness et al. (1999). The GLM regression reveals that the board of directors, female directors on the board, managerial ownership, leverage and firm size exhibit a significant impact on N.Z. firms' performance.

Overall, large boards improve N.Z. firms' performance, as large boards provide greater monitoring, increase the independence of the board and counteract the managerial entrenchment, hence increasing firm performance. The board committees and managerial ownership exhibit a positive and significant relationship with firm performance, suggesting the existence of the board committee and higher managerial ownership increase firm performance. The results support the view that compliance with NZSC requirements improves firm financial performance. The board committees and managerial ownership exhibit a positive and significant relationship with firm performance, suggesting the existence of the board committee and higher managerial ownership increase firm performance. The results support the view that compliance with NZSC

requirements improves firm financial performance. A higher proportion of non-executive directors, female directors on N.Z. boards and a higher proportion of blockholder ownership decrease firm performance. This result might be caused by the nature of ownership in New Zealand, in which the higher the blockholder ownership level, the more potential for agency problem to arise as consequence of more power to interfere with any decision made by the board.

It should be noted that this study has only covered the period from 2007 to 2011, with a sample of 79 firms out of New Zealand listed firms; hence, the validity of the findings interpreted in this study is limited to the scope of the data and the condition of economics for the period of the data.

REFERENCES

Adams, R., & D. Ferreira. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, *94*, 291–309.

Agrawal, A., & Knoeber, C. R. (1996). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis, 31*, 377–397.

Bessler, W., Drobetz, W., & Gruninger, M. C. (2011). Information asymmetry and financing decisions. *International Review of Finance, 11*(1), 123–154.

Bhabra, G. S. (2007). Managerial ownership and firm-value in New Zealand. *Journal of Multinational Financial Management, 17*, 142–154.

Bhagat, S., & Black, B. (1999). The uncertain relationship between board composition and firm performance. *Business Lawyer, 54*, 921–963.

Bhagat, S., & Black, B. (2002). The non-correlation between board independence and long-term firm performance. *Journal of Corporation Law, 27*(2), 231–273.

Bhagat, S., & Bolton, B. (2008). Corporate governance and firm performance. *Journal of Corporate Finance, 14*, 257–273.

Bonn, I. (2004). Board structure and firm performance: Evidence from Australia. *Journal of the Australian and New Zealand Academy of Management,* 10(1), 14–24.

Borokhovich, K. A., Parrino, R., & Trapani, T. (1996). Outside directors and CEO selection. *Journal of Financial and Quantitative Analysis*, *31*(3), 337–355.

Brennan, N., & McCafferty, J. (1997). Corporate governance practices in Irish companies. *Irish Business and Administrative Research (IBAR), 18*, 116.

Callen, J. L., Klein, A., & Tinkelman, D. (2003). Board composition, committees, and organizational efficiency: The case of nonprofits. *Nonprofit and Voluntary Sector Quarterly, 32*(4), 493–520. doi: 10.1177/0899764003257462

Cameron, A. C., & Trivedi, P. K. (2010). *Microeconometrics using stata* (Rev. Ed.). College Station, Texas: Stata Press.

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate Governance, Board Diversity, and Firm Value. *Financial Review, 38*, 33–53.

Chaganti, R. S., Maharjan, V., & Sharma, S. (1985). Corporate board size, composition and corporate failures retailing industries. *Journal of Management Studies, 22*(4), 400–417.

Chin, T., Vos, E., & Case, Q. (2004). Levels of ownership structure, board composition and board size seem unimportant in New Zealand. *Corporate Ownership and Control, 2*, 119–128.

Claessens, S., Djankov, S., Fan, J. P. H., & Lang, L. H. P. (2002). Disentangling the incentive and entrenchment effects of large shareholders. *Journal of Finance, 57*(6), 741–2771.

Coles, J. L., Daniel, N. D., & Naveen, L. (2008). Boards: Does one size fit all? *Journal of Financial Economics, 87*(2), 329–356.

Demsetz, H. (1983). The structure of equity ownership and the theory of the firm. *Journal of Law and Economics, 26*, 375–390.

Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of Corporate Finance, 7*, 209–233.

Denis, D., & Sarin, A. (1999). Ownership and board structures in publicly traded corporations. *Journal of Financial Economics, 52*, 187–224.

Doukas, J., Kim, C., & Pantzalis, C. (2000). Security analysts, agency costs, and company characteristics. *Financial Analysts Journal*, *56*(6), 54–63.

Eisenberg, T., Sundgren, S., & Wells, M. T. (1998). Larger board size and decreasing firm value in small firms. *Journal of Financial Economics, 48*, 35–54.

Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review, 14*(1), 57–74.

Elayan, F., Meyer, T., & Lau, J. (2003). Executive incentive compensation schemes and their impact on corporate performance: Evidence from New Zealand since legal disclosure requirements become effective. *Studies in Economics and Finance, 21*, 54–92.

Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate Governance, 11*(2), 102–111.

Ezzamel, M. A., & Watson, R. (1993). Organisational form, ownership structure and corporate performance: A contextual analysis of UK companies. *British Journal of Management, 4*, 161–176.

Fama, E., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics, 26*, 301–325.

Felo, A., Krishnamurthy, S. & Solieri, S. (2003). Audit committee characteristics and the perceived quality of financial reporting: an empirical analysis. *Social Science Electronic Publishing*. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=401240

Fitzsimons, P. (1997). Takeovers and efficiency in the context of concentrated shareholdings: The case of New Zealand. *Company Securities Law Journal, 15*, 4–21.

Garg, A. K. (2007). Influence of board size and independence on firm performance: A study of Indian companies. *Vikalpa, 32*(3), 39-60.

Guest, P. (2009). The impact of board size on firm performance: Evidence from the UK. *European Journal of Finance, 15*, 385–404.

Hampel. R. (1998). *Committee on corporate governance: Final report.* London: Gee Publishing Ltd.

Hartzell J., & Starks L. (2003). Institutional investors and executive compensation. *J Finance, 58*(6), 2351–2374.

Healy, J. (2003). *Corporate governance & shareholder value: Challenges facing New Zealand*. Palmerton North: Dunmore.

Hendry, K., & Kiel, G. C. (2004). The role of the board in firm strategy: Integrating agency and organisational control perspectives. *Corporate Governance: An International Review, 12*(4), 500–520.

Hermalin, B. E., & Weisbach, M. S. (1988). The determinants of board composition. *RAND Journal of Economics, 19*(4), 589–606.

Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review, 88*(1), 96–118.

Hermalin, B., & Weisbach, M. (1991). The effects of board composition and direct incentives on firm performance. *Financial Management, 20*, 101–112.

Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependency perspectives. *Academy of Management Review, 28*(3), 383–396.

Himmelberg, C. P., Hubbard, R. G., & Palia, D. (1999). Understanding the determinants of managerial ownership and the link between ownership and performance. *Journal of Financial Economics, 53*, 353–384.

Holderness, C., Kroszner, R., & Sheehan, D. (1999). Were the good old days that good? Evolution of managerial ownership and corporate governance since the great depression. *Journal of Finance, 54*, 435–469.

Hossain, M., Prevost, A. K., & Rao, R. P. (2001). Corporate governance in New Zealand: The effect of the 1993 Companies Act on the relation between board composition and firm performance. *Pacific-Basin Finance Journal, 9*, 119–145.

Huse, M., & Solberg, A. (2006). Gender-related boardroom dynamics: How Scandinavian women make and can make contributions on corporate boards. *Women in Management Review, 21*, 113–130.

Jensen, M. C. (1983). Organisation theory and methodology. *The Accounting Review, LVIII*(2), 319–333.

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review, 76*, 323–329.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360.

Jurkus, A. F., Park, J. C., & Woodard, L. S. (2008). *Gender Diversity, Firm Performance, and Environment. SSRN Working Paper*, 28 February.

Kang, H., Cheng, M., & Gray, S. J. (2007). Corporate governance and board composition: Diversity and independence of Australian boards. *Corporate Governance, 15*(2), 194–207.

Keasey, K., Thompson, R. S., & Wright, M. (1997). *Corporate Governance: economic, management and financial issues*. Oxford: Oxford University Press.

Kemp, S. (2006). In the driver's seat or rubber stamp? The role of the board in providing strategic guidance in Australian boardrooms. *Management Decision, 44*(1), 56–73.

Klein, A. (1998). Firm performance and board committee structure. *Journal of Law and Economics, 41*(1), 275–303.

Maddala, G. S., & Lahiri, K. (2009). *Introduction to econometrics* (4th Ed.). West Sussex, England: John Wiley & Son Ltd.

McConnell, J. J., & Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial Economics, 27*, 595–612.

McIntyre, M. L., Murphy, S. A., & Mitchell, P. (2007). The top team: Examining board composition and firm performance. *Corporate Governance, 7*(5), 547–561.

Mehran, H. (1995). Executive compensation structure, ownership, and firm performance. *Journal of Financial Economics, 38*(2), 163–184.

Morck, R., Schleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics, 20*, 293–315.

New Zealand Securities Commission (2004). *Corporate governance in New Zealand principles and guidelines: A handbook for directors, executives, and advisers*. Wellington: New Zealand Securities Commission.

Prevost, A., Rao, R., & Hossain, M. (2002). Determinants of board composition in New Zealand: A simultaneous equations approach. *Journal of Empirical Finance, 9*, 373–397.

Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *The Journal of Finance, 50*(5), 1421–1460.

Reddy, K., Locke, S., & Scrimgeour, F. (2010). The efficacy of principle-based corporate governance practices and firm financial performance. *International Journal of Managerial Finance, 6*, 190–216.

Reddy, K., Locke, S., Scrimgeour, F., & Gunasekarage, A. (2008). Corporate governance practices of small cap companies and their financial performance: An empirical study in New Zealand. *International Journal of Business Governance and Ethics, 4*, 51–78.

Roberts, J., McNulty, T., & Stiles, P. (2005). Beyond agency conceptions of the work of non-executive director: Creating accountability in the boardroom. *British Journal of Management, 16*(1), 5–26.

Rose, C. (2007). Does female board representation influence firm performance? The Danish evidence. *Corporate Governance, 15*(2), 404–413.

Sheridan, A., & Milgate, G. (2005). Accessing board positions: A comparison of female and male board members' views. *Corporate Governance, 13*(6), 847–855.

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *Journal of Finance, 52*(2), 737–783.

Simpson, W., D. Carter, & D'Souza, F. (2010). What do we know about women on boards? *Journal of Applied Finance 20*, 27–39.

Singh, H., & Harianto, F. (1989). Management-board relations, takeover risk, and the adoption of golden parachutes. *Academy of Management Journal, 32*(1), 7–24.

Singh, M., & Davidson, W. A. (2003). Agency costs, ownership structures and corporate governance mechanisms. *Journal of Banking and Finance*, *27*, 793–816.

Slade, M. (2011). Women still struggle to sit at board table. *Herald on Sunday,* p. 49.

Statistics New Zealand. (2004). Statistics New Zealand 2004. Retrieved from: http://www.stats.govt.nz/browse_for_stats/businesses/business_finance/ business-finance-nz-2004.aspx

Stulz, R. M. (1988). Managerial control of voting rights: Financing policies and the market for corporate control. *Journal of Financial Economics, 20*, 25–54.

Waikato Times (2012). NZX to make companies report diversity, 5 July, p. 8.

Wan, D., & Ong, C. H. (2005). Board structure, process and performance: Evidence from public listed companies in Singapore. *Corporate Governance, 13*(2), 277–290.

Welch, E. (2003). The relationship between ownership structure and performance in listed Australian companies. *Australian Journal of Management, 28*(3), 287–305.

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2009). Endogeneity and the dynamic of corporate governance. *European Summer Symposium in Financial Markets, Centre for Economic Policy Research,* 13–24 July, 1–52.

Women on Boards. (2012). Submission by women on boards NZ. Retrieved from https://www.nzx.com/files/static/Diversity_Women_on_Boards.pdf

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of financial Economics, 40*, 185–211.

Zeitun, R., & Tian, G. G. (2007). Does ownership affect a firm's performance and default risk in Jordan? *Corporate Governance, 7*(1), 66.