Does Board "Independence" Destroy Corporate Value?*

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Abstract

The Australian Securities Exchange (ASX) Corporate Governance Council (CGC) has required all listed firms to either adopt a majority of "independent" board members without links either to management or to substantial shareholders or explain "if not, why not". While this close to a global standard, it is the opposite to US exchanges who also require "independence from management" but are explicit in stating that significant shareholding need be no barrier to independence. Within a framework of both fixed firm and combined industry-year effects such that each firm is compared with itself, we show that firm performance declines significantly as affected outside directors depart the firm to make way for "Independents". Regular Gray directors make better acquisition decisions, increase the proportion of incentives in CEO pay, and raise dividend payouts. The presence of more executives on the board significantly reduces the CEOs pay, while combining the role of CEO and chair adds to firm value.

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Key words: Independent directors, Board monitoring, Board characteristics, Board performance, Gray directors.

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1 Introduction

Arguably, the most important and controversial corporate governance issue is board composition. Should corporate boards be made up of "independent" directors with no material links to either management or substantial shareholders that could create conflict of interest? Proponents such as the Australian Securities Exchanges (hereafter ASX) Corporate Governance Council (hereafter CGC) suggest that independent directors free of personal associations with senior executives and major shareholders[1] should be more dispassionate and less biased in favor of either management or significant or dominant shareholders, especially when evaluating existing business practices and monitoring management. Not only should minority shareholders benefit but, in addition, other stakeholders such as the banks, employees, suppliers and customers should be more fairly treated.

This rosy view of unaligned directors is not shared by many who invest millions of dollars in attempting to unseat particular directors or gain complete control of badly managed companies. For example, the activist investor, Carl Icahn (*Business Week Online*, November 18, 2005), asserts that board members appointed by the CEO are simply "cronies" that do not monitor. Icahn's views hark back to Mace (1976) who found that outside directors "are not really very much involved and do not really represent the owners of the corporation - the stockholders." In the same vein, Alan Greenspan opines: "In my experience, few directors in modern times have seen their interests as separate from those of the CEO, who effectively appointed them and, presumably, could remove them from future slates of directors submitted to shareholders." [2] Warren Buffett (2004 annual shareholders meeting of Berkshire Hathaway) is equally dismissive of the role of compensation committees that are typically dominated by independent directors.[3] Gorton (2007) documents the rise of independent directors in the United States (US) from about 20% in the 1950's to about 75% for large public company boards by about 2005 but finds no convincing empirical evidence as to why this massive change came about.

Despite the almost universal adoption of rules requiring director independence globally and numerous

[1] An extreme form "independence" would limit the interest of these directors to just their directorship and thus excludes share ownership altogether, although the ASX Corporate Governance Council has not taken this ultimate step.

[2] at the Stern School of Business, March 26, 2002. Cited by Arena and Braga-Alves (2013).

[3] "The typical large company has a compensation committee. They dont look for Dobermans on that committee, they look for Chihuahuas..., Chihuahuas that have been sedated." cited in Agrawal and Nasser (2011).

studies that have investigated aspects of board independence, the majority find that there is no evidence of improvement while a minority find some beneficial effects and some, harmful effects. To paraphrase Winston Churchill, never in the field of global enterprise has so much business regulation been promulgated in so many countries based on so little evidence. As Jim Barksdale, former Netscape CEO, quipped, "If we have data, lets look at data. If all we have are opinions, lets go with mine." The actual governance listing rule of the ASX, (Rule 4.10.3) is non-prescriptive. However, proponents of regulation such as the ASX's CGC have strong opinions that their "pro-independence" recommendations represent world best practice but lack data and do not purport to carry out research on the opinions that they promulgate as rules affecting all of corporate Australia. The principle that rules and regulations should be evidence-based is manifestly violated. In fact, we believe that one can reasonably interpret the CGC's recommendations as an attempt to preempt whatever scheme finds political favor at the time that governments' might be tempted to legislate for, and have it adopted within a less damaging and more flexible format than a legislated "one size fits all" straightjacket. [4] In addition to the flexibility deliberately engendered by the ASX CGC's *m*odus operandi, the Council has insisted on the provision of a lot more transparency concerning boards and governance issues while encouraging firms to explain why they adopt particular particular policies. These aspects of the Council's role deserve encouragement.

The majority of existing studies of the role of board independence simply confine their attention to whether or not an independent majority, or higher proportion of independent directors, contributes to or detracts from firm value. Our study goes beyond this in a variety of ways. In addition to independent directors, we analyse the contributions of the remaining board groups in addition to executives who constitute the management. These are outside "Gray" (i.e., "Regular" outside directors with some previous or current affiliation with the firm) as their presence affects the composition of the board and various board committees such as the Audit committee, and "incentivized" directors that are incentivized in their own right or who retain links with significant shareholders). Finally, we consider the combined group that are both informed, having previously

[4] Alan Cameron, the chair of the CGC, describes the Council as a "grand consensus of 21 groups representing everyone from company directors to accountants, stockbrokers, industry funds and shareholder groupsthat avoids government imposing detailed corporate governance rules." (Andrew White in *T*he Australian, 28/03/2014). Delegates receive advice from their constituents but the Council does not purport to carry out any research of its own and nor does it.

been an executive, and are also incentivized. Regular Gray directors are typically former executives such as the now retired CEO and those who retain links with management.

All three groups of Gray directors are likely to have interests better aligned with shareholders than are Real "independent" non-executive directors that have always been independent and are barred from either being substantial shareholders themselves or being associated with them. Hence Gray directors in general are likely to be more informed about company affairs than are Real Independent directors.[5]

Furthermore, having determined that, as Gray directors depart the board to be replaced by independent directors, firm value is typically destroyed, we investigate a number of means by which this process has occurred. These include the ability of Real Independent and Gray directors to make wealth-creating takeover decisions. We also study the role of director-groups in rewarding the CEO and providing the manager with incentives and the role of these groups in paying themselves and providing themselves with incentives. Finally, we examine the role of director groups in determining key firm financial policy, in particular, the payout and leverage (debt) ratios that are critical determinants of firm performance.

According to the ASX's CGC (2010) amended rules: a director who "is a substantial shareholder of the company or an officer of, or otherwise associated directly with, a substantial shareholder of the company" does not qualify as "independent". Commencing in 2003, the CGC has required that all listed firms either adopt a majority of "independent" board members without links either to management or to substantial shareholders (i.e., 5% or greater shareholding) or explain "if not, why not". Subsequently, the Australian Prudential Regulatory Authority (APRA) has required all banking, financial and insurance firms subject to regulation to adopt the CGC rules as a matter of law, not by choice. Moreover, many proxy advisers have simply adopted the CGC recommendations, forgetting the "if not, why not" escape clause.

[5]Under the Australian Security Exchange Corporate Governance Council guidelines (2002) commencing in 2003 and reaffirmed in 2010 a "non-independent", i.e., "Gray", non-executive director:
1) is a substantial shareholder of the company, i.e., owning 5% or more, or an officer of, or otherwise associated directly with, a substantial shareholder of the company;
2) is employed, or has previously been employed in an executive capacity by the company or another group member, and there has not been a period of at least three years between ceasing such employment and serving on the board;
3) has within the last three years been a principal of a material professional adviser or a material consultant to the company or another group member, or an employee materially associated with the service provided;
4) is a material supplier or customer of the company or other group member, or an officer of or otherwise associated directly or indirectly with a material supplier or customer; or
5) has a material contractual relationship with the company or another group member other than as a director.

More concretely, we investigate in this paper the effect of the ASX CGC recommendations in altering the board structure of 430 (average of 304.4 firms per annum) of the largest ASX firms of which 347 are non-financial and 88 are financial. These firms have appeared in the list of the ASX Top 200 in the period 2001-2012, inclusive. In particular, we find that on 805 occasions Gray directors departed the board and on 405, or approximately half of these occasions, they were replaced by a Real Independent director.[6]

We control for firm and interacted industry-year fixed effects to allow for observable and unobservable firm and industry-year heterogeneity and to compare each firm with itself in a robust manner. We identify a sizeable loss in shareholder value (fall in Tobins Q Ratio and Market to Book) for all large firms on the departure of Gray directors. This is true in aggregate and particularly for non-financial firms. Additionally, we find a statistically and economically severe loss to shareholders from poor takeover decision-making also due to the departure of Gray directors.

We find that large boards pay their CEOs more, after controlling for a large variety of performance measures. Contrary to the expectations of bodies such as the CGC, the presence of more Real Independent directors does not reduce the pay of the CEO. Surprisingly, a higher proportion of Executive directors, excluding the CEO, is effective in significantly reducing the CEOs total compensation. A higher proportion of Regular Gray directors on the board gives rise to a significant increase in the incentive proportion of the CEOs total compensation consisting of long-term incentive pay.

The total pay of non-executive directors, and both Real Independent and Gray directors considered separately, rise in response to weakened board monitoring due to the presence of more Real Independent directors. The addition of Real Independent directors weakens firm performance by a reduction in dividend and other payouts to shareholders. Finally, a higher proportion of Dual Regular and Incentivized Gray directors reduces firm leverage and thus the likelihood of bankruptcy.

Our findings suggest that, with the possible exception of the banks and financial firms, "independent" directors considered as a group do not monitor. Even if these directors have the necessary knowledge to

[6]Since a non-independent director such as the former CEO qualifies as "independent" after the lapse of three years, according to the CGC, as the mindset allegedly switches from subservience to managers to independence merely due to the passage of time, we analyse what we term "Real Independent" directors who have always remained independent.

monitor effectively, they have little reason to monitor, apart from possible reputational concerns or pure public spiritedness, as we show that their direct pay is not dependent on stock performance and their shareholdings are negligible.[7]

In contrast to the ASX CGC rules, the New York Stock Exchange (NYSE) and NASDAQ exchanges take a contrary position to the CGC in recognizing that governance is only effective if there is incentive alignment between directors and shareholders.[8] Thus neither exchange sets an upper limit on share ownership, or lack of association with a significant shareholder, as a requirement for "independence". Agrawal and Nasser (2011) find that these incentivized directors that are not tarred with the Gray director brush are exceptional monitors. The presence of largely private investors on boards who are significant shareholders lowers the pay of the CEO, increases the CEO's incentive pay, increases the sensitivity of CEO turnover to performance performance and raises the firm's Tobin' Qs level of performance.

Strangely, given that the United Kingdom regards its rules as the globally most supportive of shareholder rights, the UK Financial Reporting Council (2012), like the ASX, excludes representatives of significant shareholders (3% or more) from "independence" status. [9] As an example of the "if not, why not", rules in action, companies such as Network 10 listed on the ASX claim "independent" status for directors even though their shareholding exceeds the 5% significant shareholder barrier by at least double.

A further requirement is independence from the company in that they must be part-time, possessing other sources of income. In the interests of good governance and presumably to encourage directors to act with an independence of mind and to challenge and discipline the CEO, stock exchanges and regulatory oversight commissions have promoted such board independence globally for more than 20 years. For example, the three major United States (US) exchanges, NYSE, NASDAQ, and AMEX, have required the boards audit committee to be made up of independent directors since December 1999. Following a number of spectacular

[7]One avenue of potential incentive for non-executive board members is to be invited to serve on multiple boards but such "busy" directors are not necessarily better monitors of management. In fact Hauser (2013) finds that reductions in director workload are associated with a whole variety of significant firm performance improvements.

[8]For example, the rules NYSE (2013, 303A.02 Independence Tests) state: "as the concern is independence from management, the Exchange does not view ownership of even a significant amount of stock, by itself, as a bar to an independence finding."

[9]The Cadbury Report (1992, para 4.12), which was the forerunner to the Financial Reporting Council (FRC) guidelines, simply requires "independent" directors to be "independent of management and free from any business or other relationship which would materially interfere with the exercise of their independent judgement". No mention is made of significant shareholders.

bankruptcies, the Cadbury Report (1992) in the United Kingdom (UK) and the European Commission (2005) led to the adoption of similar rules in the UK and Europe. These rules were incorporated into law by the Sarbanes-Oxley Act of 2002 (SOX) in the US with a requirement that members of the firms audit committee be independent of management and not accept "any consulting, advisory or other compensatory fees". In 2003, both the NYSE and NASDAQ announced their changing listing requirements to have a majority independent director presence on corporate boards by 2005, and greater independence was also required for nominating and compensation committees, in addition to auditing committees. Likewise, many exchanges in other countries altered their listing requirements in response to demands for a majority board presence of independent directors, for reasons of increased independence and thus objectivity and transparency.

Bodies such as the ASX CGC and the Security and Exchange Commission (SEC) in the US take the view that the case for independence is self-evident and thus do not require compelling empirical evidence that in any case is lacking. Regulatory changes requiring board "independence" were prompted by notable corporate bankruptcies such as the failure of the Robert Maxwell companies and the Bank of Credit and Commerce International in the UK in 1992, Enron and WorldCom in 2001 and 2002, respectively, and with assets of $7.8 billion in the US, and HIH Insurance Ltd. in Australia in 2001. The fact that both Enron and WorldCom had majority board independence at the time of failure and that these directors were not substantial shareholders reveals the paucity of this oft-quoted justification. While three supposedly "independent" directors of HIH out of a total of eleven on the board, including the chairperson, were former partners of the companys auditor, Arthur Andersen, not one was a substantial shareholder or associate of a substantial shareholder. Despite some director association with the supposed independent auditor and the presence of former executives on the board, the HIH board met the ASX requirement of a majority of "independent" directors some years prior to collapse[10]. The same is true of other notable corporate scandals, including the near failure of Centro Properties Group Ltd during the GFC period, and the Saddam Hussein "kickbacks" with oil for wheat instigated by independent-director dominated Australian Wheat Board (AWB).

[10]The ASX CGC has pointed out that for a limited period in the mid-1990s HIH may not have met the post 2002 independent majority requirement. However, the significant fact remains that none of the global rules are based on any scientific or quantitative evidence or supported by research carried out by the regulatory bodies.

How does one know that these "independent" directors actually act in the interests of the firm, or at least its owners, namely shareholders, rather than pursue entirely private agendas? Fama (1980) suggested that there could be "ex-post settling-up" in labor markets. Thus, if a director gains a reputation as monitor then other lucrative board positions could open up but potentially as well, a reputation as a weak monitor could also be valuable for certain boards.[11] Pursuit of private interests seems particularly likely for independent directors as, almost by definition, they have small or negligible shareholding or "skin in the game" (e.g., Perry (2009)) that diminishes any intrinsic incentive to monitor that the independent director may possess. For the US, Yermack (2004) finds that outside directors are not entirely free of incentives since pay increases by 11 cents for each $1,000 change in share value but does not report this figure broken down by Gray/Independent status. We find that the direct pay of Gray directors depends significantly on stock price performance to almost the same extent as the CEO but this is not true of independent directors.

Moreover, many Real Independent directors are professional directors with no specific knowledge or background in the industry and their part-time nature, together with often serving on multiple boards, means that acquisition of such information is difficult and is never likely to be comparable to that of full-time executives.[12] Ravina and Sapienza (2012) provide empirical evidence that the insider trades of outside directors are less profitable and thus less informed than are the insider trades of executives with this difference increasing the poorer is the firms governance system. Raheja (2005) proposes a theory of board structure in which insiders compete to gain succession as the CEO by providing information to outsiders. Despite being relatively uninformed about company affairs, such information asymmetry does not always exempt non-executive directors from responsibility for company affairs.[13]

Since full-time executives basically have a monopoly of firm-specific information, boards dominated by independent directors may well find themselves subservient to executive directors and thus ineffective as

[11] One avenue of potential incentive for non-executive board members is to be invited to serve on multiple boards but such "busy" directors are not necessarily better monitors of management, especially if multiple appointments arise from a reputation for loyal support of management. Masulis and Mobbs (2013) provides evidence that US independent directors do care about their reputation, especially with respect to their most prestigious board position.

[12] The outgoing chief corporate regulator, Australian Securities and Investment Commission (ASIC) chairman, Tony D'Aloiso (*T*he Australian, March 30, 2011) stated: "Board members are advisers and are not really involved and don't have the knowledge that management has".

[13] In his Centro Judgement (2011, 18), Middelton J concluded that: "[A] director, whatever his or her background, has a duty greater than that of simply representing a particular field of experience or expertise. A director is not relieved of the duty to pay attention to the companys affairs which might reasonably be expected to attract inquiry, even outside the area of the directors expertise."

monitors (e.g., Jensen (1993), Adams and Ferriera (2007), and Harris and Raviv (2008)). However, another interpretation of these models is that many independent outside directors lack the informational base with insufficient firm and industry specific knowledge to be effective as monitors, or even to be fully cognizant of strategies proposed by management. Gillette, Noe, and Rebello (2003) provide experimental evidence to show that, even when outside directors are uninformed, their monitoring role could still be valuable to outside investors. However, the need for informed monitors is supported empirically by Masulis, Ruzzier, Xiao, and Zhao (2012) who show that independent directors with an industry background perform better while Masulis, Wang, and Xie (2012) report that foreign directors, that are presumably far less well informed, perform poorly. Guner, Malmendier, and Tate (2008) examine another category of independent director joining the board, namely bankers with financial expertise but no firm-specific knowledge. They find no firm improvement but creditors such as banks benefit.

This informational problem is especially severe for large companies often with large boards consisting almost exclusively of independent directors. The larger the board size, the less accountable are directors for board decisions. Yermack (1996) and Eisenberg, Sundgren, and Wells (1998) find that the larger the board, the greater the under-performance in terms of company valuation. This is a classic free-rider problem. Large market-dominant firms with large boards subservient to management, unlike more competitive small firms, are more likely to generate rents that can be extracted by management. Hence, it would make sense for such firms to be early adopters when regulators propose that a majority of independents be appointed to the board. Higher pay and perquisites for management and board members alike could well be the outcome. After all, when stock price plummets due to poor monitoring, a director with negligible shareholding feels less financial pain than does a substantial shareholder even though both director-types might wish to act in shareholder interest for purely public spirited reasons. Boone, Field, Karpoff, and Raheja (2007) explore the determinants of firm size to find that firms in which the cost of monitoring managers appears to be small have larger boards.

In one respect at least, the ASX CGC took, in our view, a more commendable position than did the United States regulatory counterparts. From the outset, the Council has required all listed firms to either adopt a majority of independent directors or opt out on an "if not, why not" basis, whereas all United States

listed firms were required by the SEC to comply. In fact, as indicated above, a *r*aison d'etra of the CGC seems to have been to anticipate what an interventionist government might mandate and make it part of its own more flexible requirements so as to avoid a US-style regulatory outcome. If the saving grace of CGC recommendations is that they are voluntary, apart from the requirement to provide an explanation as to why they have been rejected, the Australian Government regulator, the Australian Prudential Regulatory Authority (APRA (2012), Prudential Standard CPS510) has adopted the precise ASX rules on "independence" for banks and financial firms without leeway in terms of an "if not, why not" provision such that the requirements are in no way voluntary. The actions of APRA justify the fear of the ASX CGC that governments have a strong propensity to pass universally binding governance laws.

Since SOX came into effect in the United States in 2002 a non-executive director serving on the audit committee who owns 10% or more of the voting stock is no longer deemed to be "independent" due to shareholder association. However, any director owning 10% or more would "not be deemed to be or presumed to be an affiliate" and thus lack independence (SEC (2003). It would dependent on the situation and require investigation. It needs to be noted that these rules as to independence apply only to members of the audit committee, if not exempted from the 10% rule, and not generally to all "independent" directors. The ASXs actions in 2003 followed the lead set by SOX with the difference that the criteria for "independence" from substantial shareholders was set at the lower limit of 5% rather than 10% and applied to all supposedly "independent" directors, not just those serving on audit committees. While we believe that this difference compounds the problem of governance in Australia, it means that many incentivized directors as well as regular Gray directors have been forced off boards, making it possible to distinguish between the separate roles played by incentives and the informational superiority expected of regular Gray directors.

An early study by Pfeffer (1972) suggests a negative relationship between board proportion constituted by outsiders and firm performance. Another relatively early study of firm performance and board independence by Agrawal and Knoeber (1996) finds a negative relationship between board independence and firm performance as measured by Tobin's Q. Klein (1998) finds a negative relationship between the change in the market value of equity and the proportion of independent directors. Bhagat and Black (2002, Tables 4 and 5) utilizing

Ordinary Least Squares (OLS) and a three-stage least squares methodology find a negative relationship between Tobin's Q and board independence, while Hermalin and Weisbach (1991) and Mehran (1995) find no relationship. The survey of the extensive board literature by Adams, Hermalin and Weisbach (2010) focuses on the intrinsic endogeneity problem confronting most such studies (see also Hermalin and Weisbachs survey (2003)).

Hermalin and Weisbach (1998) showed that in equilibrium poorly performing firms could adopt more independent directors, reversing the causality relationship. Unless prompted by regulators, boards are free to choose their composition and size at will, making many findings problematic. Under these circumstances there is far from being any consensus as to the ideal board composition with some studies favouring independent board majorities, others the reverse or, more often than not, no significant difference in performance. An insignificant relationship between board structure and performance is consistent with the argument presented in Demsetz (1983) that each firm faces a unique optimising problem with a great deal of unobservable inter-firm heterogeneity. In the absence of an exogenous event producing a sizeable shock, such as the one analysed here induced by regulatory change, it is difficult to separate out true impacts from unobservable heterogeneity.

One of the few studies of board composition based around a natural experiment is Guo and Masulis (2013). This study is based around SOX and the subsequent regulatory changes. It finds that US independent boards in the post-SOX environment are more likely to force replacement of poorly performing CEOs. The evidence of Duchin, Matsusaka and Ozbas (2010) based on the same event is more mixed with board performance improving only when the cost of finding information is low with it worsening otherwise. Chhaochharia and Grinstein (2009) use the same experiment to argue that independent boards lowers CEO pay but Guthrie, Sokolowsky and Wan (2012) point to a problem with outliers in the earlier study with two formerly highly paid directors opting to receive just $1 in pay. At the time, sizeable tax reductions on dividend distributions for substantial shareholders may have prompted the change. Consistent with our study for the ASX event, they also find that compensation committee independence gives rise to higher rather than lower CEO pay.

Wintoki, Linck, and Netter (2012) recommend the use of the dynamic panel generalized method of moments (GMM) developed by Arellano and Bond (1991) and Arellano and Bover (1995), amongst others, to

overcome the problem that current governance may be affected by past dynamic shocks. For example, Hermalin and Weisbach (1998) and Bhagat and Black (2002) find that following poor performance, US boards are more likely to raise the proportion of independent directors. In the present paper, we investigate this issue for boards of large Australian companies to find that these dynamic effects are absent. However, when Wintoki, Linck, and Netter (2012) adopt accounting return on assets (ROA) as their performance measure, which is unusual in that more researchers adopt the Tobin's Q ratio in preference, they find that using their GMM methodology, board independence has no effect on firm performance.

Shivdasani and Yermack (1999) find for the US that CEOs are more likely to appoint Gray rather than Independent directors. Hwang and Kim (2009) report that even when boards are nominally and legally independent, 38% have strong social ties with the CEO. Compared with other boards, the CEO is paid more, has lower pay sensitivity, and is less likely to be fired for poor performance. Cohen, Frazzini, and Malloy (2012) find that boards appoint "independent" directors who are little more than cheerleaders with such firms increasing earnings management and CEO pay following such appointments. Fracassi and Tate (2012) provide evidence that powerful CEOs appoint external directors with strong network links to the CEO. Le Mire and Gilligan (2013) are also critical of the performance of independent directors. Knyazeva, Knyazeva, and Masulis (2013) uses the geographic supply of independent board members as an instrument to conclude that independence is positive for firm value, operating performance, CEO turnover, and the proportion of equity-based pay for US companies. Coles, Daniel, and Naveen (2014) find that as the proportion of the board appointed by the CEO increases that the CEO is less likely to be replaced for poor performance and that the CEO is paid more.

Fogel, Ma, and Morck (2014) find that firms with a "powerful" independent board enjoy a higher Tobins Q ratio of performance after controlling for influences on Tobins Q and year and industry effects. Such boards have a majority of independent directors with what they deem to be powerful networks of contacts. They also find that firms with a powerful non-independent board have a much higher coefficient for good performance that is highly significant at better than the 1% level while the significance of the powerful independent board is only significant at the 10% level.

Barnea and Guedj (1999) find that connected independent directors pay the CEO more, provide lower incentives and are more likely to retain a poorly performing CEO. Using a sample of 226 sudden director deaths Fogel, Ma, and Morck (2014) find a fall in share price following an independent directors death, but not an inside directors death. This leads them to conclude that it is networked independent directors who play a causal role in improving firm performance. They also investigate a number of other indicators of poor governance to conclude that it is powerful networked independent directors that improve governance. Their findings appear to be the opposite of Barnea and Guedj (1999). The very small size of the sample of manager deaths out of 19,233 unique directors, or only 1.18%, is disturbing as is the weak statistical evidence that powerful independent boards contribute to firm value as the more rigorous firm fixed effects methodology in which a firm is compared with itself is not employed.

A critical factor in board independence, or the lack of it, is duality of the CEO and board chair. While in the 1950's over 80% of US firms combined the role of CEO and chair, only a relatively small proportion do so in Australia due to an exceedingly negative press. Following SOX and agitation by investor groups, many US firms have abandoned this dual role in favor of separation due to investor pressure. Dey, Engel, and Liu (2011) utilize the modelling framework of Faulkender and Wang (2006), as developed by Masulis, Wang, and Xie (2007) and (2009), to find support for the leadership model of Brickley, Coles, and Jarrell (1997). In this framework, more powerful and reputable CEOs are able to follow their agenda of creating value with the support of their board. They conclude that firms which are pressured into splitting the roles of CEO and chair fall in value on the announcement and have lower subsequent returns with less productive subsequent investments.

We find that for Australia there is a strong bifurcation with the entire sample and non-financial firms showing that the loss of CEO duality was costly to firm value, but for the relatively small sample of financial firms the opposite it true with such firms gaining in value with the removal of duality. In the current paper we adapt the takeover response methodology of Masulis, Wang, and Xie (2007) and (2009) to identify which type of board structures promote wealth enhancing firm acquisitions. We find that the higher the proportion of Regular Gray directors on the board, the better are these acquisitions for other than financial firms.

In recent years a number of legal scholars have become critical of the notion of "independent" directors and how rules were introduced and have been interpreted. Romano (2005) points out that "policy entrepreneurs" were able to convince Congress to prescribe rules in SOX that are likely to be ineffective in achieving their goals. Ringe (2013) refer to the "dismal failure" of independent directors during the financial crisis and conclude that they "showed serious deficits in understanding the business they were supposed to control, and remained passive in addressing structural problems." Adams (2012) provides empirical support for the conjectures of lawyers, showing that banks with a higher proportion of independent directors were more likely to receive bailout funds during the GFC period.

The remainder of this paper is organised as follows. Section 2 describes the data and methodology. Section 3 presents our main results, while Section 4 concludes.

2 Data and Methodology

2.1 Data

This paper aims to investigate the effects of board characteristics (the proportion of Regular and Incentivized Gray directors and board size) on market-based firm performance measures (Tobins Q and Market-to-Book), and the effect of weaker monitoring on CEO pay and Director fees for an extensive set of ASX-listed Australian companies between 2001 and 2012. The reason for including Market-to-Book as a performance variable in addition to Tobins Q is because ASX-listed stocks are dominated by financial stocks (largely APRA regulated banks) and resource stocks. The exceedingly high leverage of many financial firms means that there is only limited variation in Tobins Q performance, whereas Market-to-Book varies more with respect to financial firm performance.

The core data in this study is sourced from SIRCA's[14] Corporate Governance Database, in which board data has been reported based on information disclosure in annual reports of the largest 500 ASX-listed companies between 2001 and 2012. Overall, this rich dataset covers corporate board and executive variables for 1,414 distinct firms, approximately twelve thousand firm-year observations, and 72,589 director-years. Since

[14]Securities Industry Research Centre of Asia-Pacific located in Sydney.

the requirement to report the independence status of outside directors only commenced in 2003, the SIRCA dataset lacks this information for about 6,000 director-years in 2001 and 2002. We backfilled with director information for directors that remained in the dataset post-2002 and made use of an existing governance database[15] for the decade ending in 2003 for the largest 150 firms and hand-collected this information from the director reports and accounts of annual reports and director shareholder information for most of the remaining firms other than some very small firms that are not included in our large-firm sample.

The entire dataset consists of the largest 500 companies based on market capitalization with June-year-end financial years and has been back-filled to the base financial year of 2001 when new companies entered the list in subsequent financial years. The base year of 2001 was selected as SIRCAs starting point due to the implementation of new disclosure standards on company boards as a result of the Corporations Act Section 300, 300A and newly introduced accounting standards. Overall, the dataset population covers corporate board and executive variables for 1,414 distinct firms and 11,965 firm-year observations. Our firm and year fixed-effect methodology is applied only to the top-200 dataset in the belief that the ability of management to extract rents from shareholders due to weak "independent board" dominated firms should be largely confined to large firms that are more likely to generate a surplus.

To control for company-level characteristics in the subsequent analyses, we obtained relevant accounting data from the Morningstar Aspect Huntley database.[16] Additionally, we collected market price and return data from the AGSM UNSW CRIF (Centre for Research in Finance) SPPR database, now managed by SIRCA. Ownership data was collected from SIRCA and if absent sourced from Morningstar. For computing risk and daily price performance measures, we used Datastream to collect daily prices of the given companies. The details of every Australian takeover were obtained from Thompson Reuters SDC Platinum and the program, Eventus, was used to construct the Cumulative 5-Day Abnormal Returns (CARs) and Buy and Hold Abnormal Returns (BHARS). The takeover events were then matched up with our SIRCA Corporate Governance database.

[15] We wish to thank Peter Pham, Jo-Ann Suchard, and Jason Zein for generously making available access to this data.

[16] Relevant accounting data includes cash, ordinary dividends paid, CAPEX, total assets, total liabilities, and shares outstanding at balance sheet dates.

Table 1 exhibits the descriptive statistics and Table 2, a pairwise correlation matrix of the board structure, firm characteristics, and firm performance variables included in the analyses. We adopt the US short-hand term of "Gray" for directors that do not meet the requirements for director independence. The average board size is close to seven members, the overall proportion of Real Independent directors (i.e., excluding former executives) is approximately 55%, the proportion of Executives is 19%, and the proportion of "Regular Gray" directors who do not meet the CGC management independence criterion is 11.5%, with "Incentivized Gray" directors making up 7.9%, with 1% of directors in a dual role since they are both Incentivised and Regular Gray directors. Some Gray directors hold shares in their own right with the remainder representing significant shareholders. The proportion of Incentivised Grays making up the audit committee is 6.73% and the proportion of dual Incentivized and Regular Grays making up the audit committee is less than 1%. On average, CEOs are paid approximately $1.8 million and average real independent director is paid approximately $111,000.

Table 2 indicates a negative association between Tobins Q and CEO Total Compensation, Director Pay, the proportion of real independent directors, and board size, while performance is increasing in the proportion of long term incentive pay to total CEO pay, both the proportion of dual Incentivised and Regular Grays and the proportion of Incentivised Grays on the Audit committee. Both CEO Total Compensation and Director Pay are falling in the proportion of Regular and Incentivized Grays. Larger firms are associated with larger boards and higher CEO Total Compensation and Director Fees.

[Tables 1 and 2 about here.]

2.2 Methodology

The methodology employed in this paper is both simple while at the same time we believe, rigorous in dealing with unobservable firm heterogeneity and time-varying unobservable heterogeneity across industries derived from interacted industry-year fixed effects that make our results robust to the problem of omitted variables and eliminate bias. Either the lagged proportion of Regular or Incentivized Gray, or dual-class Regular and Incentivized Gray directors on either the firms board or Audit committee explain various logged proxies for firm performance and board monitoring after controlling for lagged board size and both firm and interacted

industry-year fixed effects.

The inclusion of firm and industry-year fixed effects means that the model only recognizes significant changes in board composition and performance over time as the appointment of new "independent" directors supplant both Regular Grays and Incentivized Gray directors, either on the board itself or on its major committees. Since we match each firm exclusively against itself, we control for all observable and unobservable firm characteristics thus capturing all the firm's observed and unobserved heterogeneity, as set out by Gormley and Matsa (2014a). Using other techniques can compound the problem and introduce bias due to omitted variables. Only shocks to the system in the time series caused by departures of various categories of director and their replacement by "independent" directors are measured.

Even including what are normally regarded as the usual control variables when using fixed effect analysis in conjunction with events can bias findings, as Angrist and Pischke (2009) and Gormley and Matsa (2014b) show. This is because fixed firm effects already control for all observable and unobservable variables associated with the firm that do not change. Including variables such as firm size, either market capitalization or total assets, that alter around events and potentially in response to the event introduces endogeneity and thus bias. We believe this methodology to be more rigorous than conventional difference in difference analysis since in difference in difference analysis control firms are not necessarily close matches for the observable and unobservable characteristics of the treated firms.

Since we include year fixed effects interacted with industry, no individual year events such as the run-up in firm performance prior to the GFC, or the subsequent decline, affect our regression results. Without very significant time-series effects of treatment, as indicated by the departure of Regular and Incentivized Gray directors due to CGC influence, we would not expect board composition to affect firm performance. Within our methodological structure, the cross-sectional pattern of board composition and performance, nor common movements in stock prices or Tobin's Q, have influence on the outcome. To provide robust statistical estimates we cluster either by industry or by firm.

An important issue in any study of board composition is to recognize that, even though firms are largely responding to the recommendation by the CGC and APRA requirement by reducing the proportion of Gray

directors, other factors may have prompted firms to make these changes as well. For example, many firms increase the proportion of "Real Independent" directors in excess of a simple majority. This could be because they infer from the CGC recommendations that "Independent" directors are always to be preferred or because they have their own motivations for these changes over and above prompting from the CGC. Hence, we report in the following section our findings with respect to the propensity of firms to reduce the proportion of Gray directors to see if our study could also be subject to endogeneity concerns. Firms could in principle displace Gray directors and add independent directors following poor firm performance, as occurred in the US, and thus compromise our methodology. However, we subject our data to considerable scrutiny to show that there is no evidence of such dynamic endogeneity for our variables of interest.

3 Results

3.1 Likelihood of Decreasing the Proportion of Gray and Executive Directors

Table 3 displays our findings with respect to the likelihood of decreasing the proportion of Gray and Executive directors based on Probit regression analysis utilizing panel data. In recognition of inevitable lags in the system and responses that are not immediate, we lag all variables of interest by one year and only consider firms that commence with one or more Gray directors since not all firms are capable of shedding Gray directors at the beginning of our dataset. Considering the departure of Gray directors in columns (1) and (2) first, perhaps not surprisingly, we find that firms with a high proportion of either Regular or Incentivized Gray directors are more likely to reduce the overall proportion of Grays and these coefficients are highly statistically significant.

One of the more important findings is that the likelihood of a Gray director departing is unaffected by firm performance as measured by the lagged logarithm of the firms Tobins Q ratio. This finding, together with further analysis reported in robustness Tables 11 and 12 below, indicates that there are no dynamic endogeneity concerns with respect to Gray directors such as those investigated by Wintoki, Linck, and Netter (2012).

A really striking finding that applies to all four columns in the table is if the CEO is highly paid, as indicated by the logarithm of the CEO's lagged total compensation, then the likelihood of either a Gray or Executive director departing, is exceedingly high. This could indicate that powerful CEOs play their expected

role in ensuring the departure of both Gray and fellow-executive directors and replacing them by weak independent directors who rely on the goodwill of the CEO for continued board membership. This findings is consistent with the findings for the US of Hwang and Kim (2009), Cohen, Frazzini, and Malloy (2012), and Fracassi and Tate (2012). It also supports the view of activist shareholders that independent directors are little more than the hand-maidens of powerful CEOs. Subsequently, we show that the departure of the CEO's fellow executives leads to substantial CEO pay rises.

Further evidence of the role played by powerful CEOs in ensuring that they dominate the board lies in the fact that the CEO's incentives (i.e., PPS CEO shareholdings) plays no role in the departure of Grays and Executives. One might expect that incentivized CEOs would be more likely to resist the departure of valuable insiders to prevent subsequent firm valuation decline but they do not. A quieter life with lower likelihood of being challenged may compensate. Turning now to executive directors in columns (3) and (4), such directors are more likely to be retained if there is a high proportion of Regular Gray directors on the board or if the board size is small, indicating that large boards tend to be dominated by Real Independent directors. Moreover and surprisingly, executive directors are more likely to depart the better is the firm's performance.

Figure 1 shows the rising proportion of Real Independent directors over the entire period, 2001-2012, on the LHS axis with the proportion rising from about 48% to about 63%. The remaining series displayed on the RHS axis show a considerable decline in the proportion of Regular Gray directors from 13% to 10% and also a decline in the proportion of Incentivized Gray directors from around 8% to about 5%. Figure 2 shows a rise in the average shareholdings of Incentivized Grays over the course of the period, and suggests that the least incentivized of this group leave first. We found some extreme values for shareholdings of Incentivized Grays in the SIRCA data derived from annual reports. Hence we supplemented this with data from both Aspect Huntley and Morningstar to ameliorate apparently extreme proportions. The next most incentivized group is CEOs with holdings that commenced at about 5% but towards the end had fallen to just over 2%. While Regular Gray directors typically hold more shares than do Real Independent directors, the shareholdings of both groups are exceedingly small with Regular Grays owning only about 0.2% and Independents about half as much again.

[Table 3 and Figures 1 and 2 about here.]

3.2 Tobin's *Q* and Market to Book Firm Performance

Table 4 and Figure 3 summarize our main firm performance results with the logarithm of the Tobins *Q* ratio (market capitalization plus book value of debt (proxy for market value) divided by the total book value of assets) as our dependent variable in columns (1), (3) and (5), and the remaining columns use the logarithm of the market to book ratio. It is an exceedingly parsimonious specification based on a combination of firm fixed effects and the interaction of industry and year fixed effects utilizing four variables of interest. These variables are all lagged by one year to increase the degree of exogeneity. Very rarely do board studies utilize lagged values despite the likelihood that exogeneity is compromised. These variables consist of the proportion of Regular Gray directors on the board, the proportion of dual Regular and Incentivized Gray directors on the board, the proportion of Incentivized Gray directors on the Audit committee, plus a dummy variable denoting CEO Duality with the combined role of CEO and board chair, and finally the logarithm of board size.

The two residual groups of board members consist of executives and Real Independent directors. According to the "pro-independence" director philosophy of the ASX Council, the expected sign on the two board ratios and the Audit committee ratio should be negative as departures of any one of these groups and their replacement by independents should improve corporate governance and raise the firms Tobin's *Q* ratio. The fourth variable, CEO-chair duality, has always been condemned by the CGC and many other similar bodies as exceedingly bad practice, even though many large and successful firms in the US still retain this board structure. The CGC does not seem to be concerned with firm size, as represented by the fifth variable, the logarithm of board size, but, as already indicated, a number of studies find that larger boards reduce firm performance.

[Table 4 and Figure 3 about here.]

Because we utilize firm and interacted industry-year fixed effects, Tobin's *Q* performance can only be altered when one or more of the ratios changes significantly due to the departure of Gray directors or CEO Duality alters. No additional controls are needed or included as we would expect all the observable and unobservable heterogeneity to be captured by the comprehensive fixed effects. Given this structure, adding

controls is not only redundant but it risks introducing new endogeneity since, as board composition variables alter, most firm control variables are likely to alter endogenously in the short-term to affect firm performance. Not only do the majority of board structure studies fail to lag the board variables, most include in addition a range of contemporaneous firm size and related variables as controls that are also components of the dependent variable, whether it be Tobin's Q or Market to Book. In essence then, the same contemporaneous endogenous variables appear on both sides of the regression equations, further compromising the integrity of the findings.

Column (1) for all firms and column (3) for just non-financial firms show that firm performance, as measured be the logarithm of the Tobin's Q ratio, is significantly increasing in both the proportion of Regular Gray directors on the board and the proportion of Incentivized Gray directors on the Audit committee, as well as in CEO-chair Duality that is significant at the 1% level. The beneficial effect of Incentivized Gray directors is only felt on the Audit committee that tends to be relatively small and not on the board as a whole.

This is probably because such directors are relatively rare with their influence on the board too diluted. Incentivized Gray directors will be particularly keen to ensure the elimination of waste and efficiency and keeping executive expense in check. Despite being relatively incentivized and knowledgeable about the firm we could find no evidence that a higher proportion of Executives on the board improves firm performance and typically the presence of a higher proportion of Real Independent directors worsens firm performance.

Columns (2) and (4) for all firms and non-financial firms respectively with the logarithm of the Market to Book ratio as the dependent variable adds an additional significant board variable, the proportion of Dual Regular plus Incentivized Grays, which improves performance, although Incentivized Grays on the Audit committee seem to play a lessor role. In all four columns, the lagged logarithm of board size does not appear to play any significant role.

In columns (5) and (6) the role of board composition is investigated for the small set of financial firms, including banks, taken separately. Most studies of firm performance exclude financial firms as their performance is hard to measure and, in any case, banks demonstrate negligible variation in Tobin's Q due to the dominant role of debt. Hence it is better to concentrate on column (6) based on the Market to Book ratio. For these firms, Regular and Dual Grays on the board seem to play little role but the presence of Incentivized

Grays on the Audit committee and CEOs who combine the role with that of the chair seem to sizeably reduce firm performance.

These findings of limited applicability are supportive of the views of the CGC and in particular their provision for heterogeneity and governance choice. In addition, large financial-firm boards that encourage free-riding behavior are seen to have a highly significant and negative effect on financial-firm performance but, as mentioned, the damaging effect on firm performance of having a large board has so far failed to attract the attention of the ASX Council.

Note that due to our strong methodology in capturing all observed and unobserved heterogeneity, the R-Squared values are exceedingly high for the entire Table 4 and range from 69.5% to 83% in magnitude. We report Robust *t*-values with firm clustering.

3.3 Takeover Investment Performance

In this section we analyze one important class of of real investment decisions mae by firms, namely takeover decisions, to investigate the market response to the bidder's announcement as a function of the bidder's board characteristics. The literature on this topic is relatively sparse. Cotter, Shivdasani, and Zenner (1997) analyse a small sample of US target firms to show that a higher proportion of independent directors on the board improves the market response around the takeover offer announcement. Masulis, Wang, and Xie (2007) find that board independence has no significant effect on the market's response to a sample of US takeover announcements. Minnick, Unal, and Yang (2011) investigate a sample of US bank holding company acquisitions. While their main result is that more incentivized CEOs make better acquisitions, they also show that a higher proportion of independent directors on the acquirer's board is not associated with better stock market reaction but independent directors do seem to help to choose better targets. They are not effective in raising performance subsequent to the acquisition.

Table 5 investigates the markets reaction to 734 takeover events involving our sample of large firms as acquirers to investigate how board structure affects investment performance. We control for both observable and unobservable heterogeneity with respect to firms and combined year-industry interactions by the inclusion

of the same strict fixed effect regime utilized in the previous firm performance analysis. The use of this methodology minimizes omitted variable bias. Robust statistical tests are performed using clustering by firm. Column (1) examines the entire sample while column (2) excludes financial firms and column (3) is confined to 144 acquisitions by financial firms. As with the analysis of overall firm performance in the previous table, a combination of firm fixed effects and the interaction of firm and year fixed effects is utilized. While the variables of interest are the same as in the previous table, additional and fairly standard control variables are added for the sample of acquirers. These consist of the logarithm of firm size, the Tobin's Q ratio, Leverage, Free Cash Flow, the Relative size of the target to the acquirer and whether it is a stock acquisition compared with a cash-based or hybrid acquisition.

[Table 5 about here.]

The main finding is the greater is the presence of Regular Gray directors on the board as a proportion the more favorable, or the less unfavorable, is the markets reaction to the takeover announcement as measured by the five-day Cumulative Abnormal Return (CAR) around each event for all firms and excluding financial firms. We estimate the cost to shareholders of the departure of these Regular Gray directors to be AUS $9.944 billion for all firms. The CAPM model is used to compute the abnormal returns along with an equal-weighted market index of prices. The coefficient estimates are significant at the 1% level.

For the small sample of financial firms taken in isolation in column (3) there is a negative effect that is significant at the 10% level due to the presence of Regular Gray directors. The proportion of Incentivized Gray directors on the Audit committee has no statistical effect in any of the three models, but surprisingly the presence of Dual Regular and Incentivized Gray directors on the Audit committee is associated with a negative response only in column (2), as is the combined role of CEO and chair.

A larger firm size lowers takeover performance in columns (1) and (2) but the reverse is true for large financial firms in column (3). A high Tobins Q level of overall firm performance is associated with a more negative stock market reaction but, apart from that, most of the remaining controls are not statistically significant. Hence, in summary, we find evidence that Regular Gray directors who are likely to be the most knowledgeable about company affairs make the most productive takeover decisions, as viewed by the market.

3.4 CEO Total Compensation, Pay Sensitivity, and Incentive Provision

Table 6 addresses the issue of how board structure affects a variety of CEO total compensation issues when added to a conventional model of managerial pay when firm and year fixed effects are employed. In Columns (1) and (2) the dependent variable is the logarithm of CEO total pay inclusive of long-term incentive pay (CEO TCIL) with the control variables indicating conventional findings. The pay level increases by 23% for every doubling of firm size as measured by total assets with a highly significant pay for performance coefficient of 7.4% based on the lagged stock return. The influence of the lagged ROA accounting performance is positive but marginal in that it is only significant at the 10% level. There is no evidence that the CEO is rewarded for bearing risk in that the coefficient of the lagged standard deviation of stock market returns is insignificant.

[Table 6 about here.]

Turning now to the board structure variables, there is evidence that larger boards pay more with a size elasticity of around 20 %, but the level of significance is weak at the 10% level. In column (2) the most significant finding is that the presence of a higher proportion of executives on the board, and a higher proportion of Incentivized executives on the board with 5% or more shareholding, significantly reducees CEO pay at the 1% level of significance. However, the proportion of Real Independent directors on the board had no influence either way. These ratios are calculated excluding the CEO.

These findings should come as a surprise to those who believe that Regular and Incentivized executives being subordinate to the CEO would automatically act to raise the CEO's pay. They do precisely the reverse. For example, Hermalin and Weisbach (1998) model the proportion of independent directors on the board as a consequence of bargaining between the CEO and the board, with the conclusion that more independent boards are more willing to monitor the CEO. An empirical prediction based on this theory is that, as the proportion of independent directors on the board increases as either executives or Gray directors are displaced, CEO pay should fall. Our finding that CEO pay falls with an increase in the proportion of executives and that the proportion of independents has no influence precisely rejects Hermalin and Weisbach's (1998) hypothesis as far as the Australian evidence is concerned.

In columns (3) and (4) the dependent variable is the proportion of shares on issue owned by the CEO (CEO PPS). Column (3) shows that this ratio falls significantly as the proportion of Dual Regular and Incentivized Gray directors on the board rises. This finding suggests that if there are already adequate numbers of highly knowledgeable and incentivized directors on the board, then the CEOs incentives are not as necessary. Hence, CEO incentives and those of monitoring Gray directors appear to be substitutes. Column (4) shows that not only does the presence of more subordinate executive directors on the board reduce CEO pay but it also encourages higher share holdings. CEOs that hold the dual role of board chair own more shares, commensurate with their enhanced firm leadership role.

In columns (5) and (6), the dependent variable is the value of Long-Term Incentives Payments (LTIP) as a proportion of the CEOs total compensation (CEO %LT). Column (5) shows that this ratio is increasing the more influence Regular Gray directors have on the board, but the presence of Incentivized Gray directors has no effect. Column (6) shows that the presence of a higher proportion of Real Independent directors has a negative influence on the provision of option grants and other incentives. Hence, in summary, we reach the surprising conclusion that executives who are subordinate to the CEO are the most effective at monitoring his pay level while Regular Grays are the most effective in setting the composition of the CEO's pay by providing incentives. Real Independent directors reduce incentives provided to CEOs, the reverse of what the CGC and other proponents of independent boards would expect.

3.5 Outside Director Compensation

There is an existing and fairly limited literature on the compensation structure of outside directors, with Yermack (2004) documenting some quite detailed characteristics of their pay. Fich and Shivdasani (2005) report that stock option awards to outside directors have a positive impact on firm value, especially when the existing shareholding of outside directors is low. Moreover, announcements of such incentive plans are favorably viewed by the market.

In Table 7 and the companion Figure 4, we examine the logarithm of average non-executive director total compensation (NED TCIL) in our large-firm sample after controlling for similar firm characteristics as in the

previous CEO compensation analysis. Once again, our methodology is based on the use of firm and year fixed effects. Examining the control variables first, there is a lower size element to pay than for CEOs. Pay increases by around 14% for every doubling in firm size. it also has a positive association with lagged stock returns, indicating some degree of pay for performance sensitivity that is consistent with Yermack's (2004) findings and, unsurprisingly, the elasticity coefficient of around 2.5% is substantially lower than for the CEO. In common with the CEO there is very little association with lagged accounting ROA.

[Table 7 and Figure 4 about here.]

Firstly, examining the logarithm of overall Non-Executive Director (NED) compensation in column (1), it is significantly falling in all three measures of Gray director influence, the proportion of Regular Gray, Incentivized Gray, and Dual Regular and Incentivized Gray directors. Once again, all the dependent variables are lagged by one year. The converse of these Gray directors is the proportion of Real Independent directors which has a highly significant positive influence on NED pay in column (2). Whereas the remaining converse element, executive director influence, is not significant unless incentivized, but is nonetheless positive in sign.

It would appear from these findings that the influence of incentivized Gray directors in particular on their own pay and that of Independent directors is significantly negative. At least a portion of this could be due to a desire to be paid via higher dividends, as for some high-income earners, franked dividends may be a more tax-effective means of extracting income. presumably, greater tax effectiveness was one of the motivations behind the decision by Steve Jobs of Apple to accept just $1 in pay once the US tax on dividends was substantially reduced.

Examining now the logarithm of average total compensation of Real Independent Directors in columns (3) and (4), the presence of Dual Regular and Incentivized Gray directors has an exceedingly negative impact on their pay in column (3) and on their own pay in column (5), and in column (4) the more Real Independent Directors dominate the board the higher is their own pay. Of considerable interest, the direct overall pay of Non-executive directors and that of Gray directors have significant stock market performance elasticities of as high as 4.5% for Gray directors but negligible for Real Independent directors. Conversely, the pay of Real Independent directors is linked to ROA instead, with these directors being rewarded for lowering the daily

volatility of stock returns. The R-Squared values remain high between 68% and 73% and Robust t-values with either firm- or industry-based clustering have been utilized.

3.6 Impact of Board Composition on Firm Dividends and Payout

Jensen (1986) argues that poorly governed firms destroy shareholder value by curtailing dividends and payouts, especially when the firm lacks positive NPV projects. He argues that the reason poorly governed firms leave more cash in the firm is to enable greater perquisite consumption and to enable management to do what it likes, even if this entails making negative NPV decisions, regardless of the wishes of shareholders. Once again, utilizing our firm and interacted industry and year fixed effects methodology, we find in columns (1) and (3) of Table 8 that a higher proportion of Dual Regular and Incentivized Gray directors on the Audit committee, raises both the overall payout rate and the dividend ratio in the following year, after controlling for the logarithm of total assets, the stock return and the extent to which dividends carry franking credits. In column (3) a higher proportion of Regular Gray directors raises the dividend payout rate in the following year.

[Table 8 and Figure 5 about here.]

Consistent with the idea that the dividend payouts are likely to be lower in the absence of positive NPV projects, we find a negative association between the payout rate and stock return. Surprisingly, the extent of franking credit does not appear to play a significant role in ensuring payout. In summary, our findings are consistent with the view that Real Gray directors possessing an intimate knowledge of the firm make better dividend decisions that are in the interests of shareholders.

3.7 Impact of Board Composition on Leverage

Table 9 investigates the impact of board structure on all firms in column (1), excluding financial firms in column (2), and just financial firms separately in column (3), with the caveat that debt is high in banks and financial firms and hence there is limited comparability in this dimension between the two firm types. Once again, our firm fixed effects combined with interacted year-industry fixed effects methodology obviates the need for a whole host of possible control variables since each firm is benchmarked against itself and only

changes in board structure matter. Our main finding is that it is the presence of a higher proportion of Dual Regular and Incentivized Gray directors on the board that significantly reduces the leverage ratio in all three columns. A dual CEO-chair also discourages the taking on of more debt in all firms and non-financial firms but has the opposite effect on financial firms, with the caveat that such dual-structure firms are rare in the financial sector.

[Table 9 about here.]

3.8 Overall Impact of ASX CGC Regulations

We use the actual coefficients of the relevant variables in columns (1), (3) and (5) of Table 4 to simulate the loss from the departure of Regular and Incentivized board members with an estimate of AUS $32.41 billion for all firms and since much of the market capitalization is in financial firms, if these are excluded the loss estimate is reduced to $9.975 billion. These estimates are dependent on the timing of board departures and the size of the firm where directors with good monitoring attributes depart. Figure 6 shows that these losses were concentrated in the early years following the introduction of the CGC recommendations and from 2010 onwards.

Table 10 shows that simply utilizing the estimated coefficients for the large-firm sample yields a higher overall loss estimate of $51.59 billion of which $25.2 billion is due to the departure of Regular Gray, $19.0 billion due to the departure of Incentivized Grays from the Audit committee and $7.4 billion due to abolishing dual CEO-chair positions. None of these estimates take into account the long-term dynamic losses that are likely to be much higher. The loss of shareholder value estimated from the coefficients presented in Table 4 is presumably comprehensive in that it includes all sources of shareholder loss due to the departure of Gray directors who seem better equipped to monitor than do independent directors. Hence, one component of the overall loss consists of the decline in stock acquirer performance of our sample of large firms that were identified in Table 5 above. We estimate the loss in takeover performance due to the departure of Regular Gray directors to be AUS $9.944 billion. The computation of this loss is relatively straight forward. It is simply based on the market capitalization of firms making takeovers and the coefficient for the impact of the

proportion of Regular Gray directors (Column 1 of Table 5) in reducing firm value.

[Table 10 and Figure 6 about here.]

3.9 Robustness to Dynamic Reverse Causality

Wintoki, Linck, and Netter (2012) argue that the comprehensive fixed effect methodology employed in the present paper assumes that the current values (or in our case, one-year lagged values) of board structure explanatory variables are independent of past values and in particular, past performance. For example, firms that were underperforming may have replaced Gray directors by Real Independent directors such that the underperformance we have identified is not due to the departure of desirable Gray directors at all. If this argument is correct then our methodology has successfully controlled for visible and invisible heterogeneity but at the cost of introducing dynamic reverse causality.

Such reverse causality arises in the model of Hermalin and Weisbach (1998) in which board structure is determined by bargaining between the CEO and the board with the firm and the CEOs past performance influencing the firms future board structure. For example, a high-performing, more talented manager may require less monitoring and thus a board with a smaller proportion of independent directors. Wintoki, Linck, and Netter (2012, Table 5) shows that for their US sample of firms with ROA as their performance measure that contemporaneous board structure variables such as the proportion of independent directors depends significantly on lagged ROA. Table 11 reports the replication of this dynamic estimation of board characteristics on past performance and past values for our Australian sample of large firms using our comprehensive set of firm and combined industry and year fixed effect methodology.

[Table 11 about here.]

The table shows that for four of our five board structure variables there is no trace of dependence on past performance, as measured by Tobin's Q. However, for the fifth variable, Board Size, there is a positive dependence on the lagged logarithm of Tobin's Q performance measure at the 10% level of significance. This finding is contrary to several US studies that find evidence of board size increasing following poor rather than

good performance. This almost complete lack of insignificant for four of the variables holds even though the contemporaneous values for the proportion of all five board structure variables are heavily dependent on their lagged values, indicating considerable persistence. In the lower panel the same regressions are repeated with the dependent variable being the difference between the contemporaneous variable and the lagged variable with the same result. Hence the evidence for Australia is quite different from that of the US.

Wintoki, Linck, and Netter (2012, Table 6) also test for strict exogeneity in fixed effect regressions using year dummies as fixed effects in which contemporaneous firm performance is regressed on contemporaneous board structure variables together with their future values. Many of the future board structure variables are statistically significant, showing that the hypothesis of strict exogeneity is rejected. Table 12 replicates their analysis for our variables and model structure with none of our board structure variables anywhere near statistically significant other than for board size. Future board size is higher, the better is Tobin's Q performance, the opposite to the US findings. Hence, our model meets the strictest tests for the exogeneity of our board composition variables of interest, making the need for dynamic analysis redundant.

[Table 12 about here.]

4 Conclusion

The Australian Securities Exchange (ASX) Corporate Governance Council (CGC) has required from the commencement of 2003 that all listed firms either adopt a majority of "independent" board members without links either to management or to substantial shareholders (i.e., 5% or greater shareholding) or explain "if not, why not". All APRA-regulated finance and insurance companies are required to meet all ASX CGC requirements by law. While the CGC rules are close to a global standard, it is the opposite to US exchanges who also require "independence from management" but are explicit in stating that significant shareholding need be no barrier to independence from management.

For 430 stocks that were at one point in the top-200 stocks listed on the ASX we investigate approximately 405 instances in which either a "Regular Gray" or "Incentivized Gray" director is replaced by an "independent" director. These changes perturb firms, and hence firm performance, by altering the proportions of the

different types on both the board and the Audit committee. Our findings are based on a very strict set of firm and interacted industry-year fixed effects with all variables of interest dynamically exogenous. The firm performance variables alter with board structure changes due to pressure from the ASX Council and powerful CEOs such that each firm is always compared with itself. All observable and unobservable heterogeneity due to both firm and iterated industry-year fixed effects is controlled for. This robust methodology produces exceptionally high levels of explanatory power.

Regular Gray directors make better acquisition decisions, increase the proportion of CEO pay incentives and raise dividend payouts. The presence of more executives on the board significantly reduces the CEOs pay while combining the role of CEO and chair adds to firm value. The presence of more Real Independent directors raises their own pay and lowers firm payout. We estimate the cost of the performance decline to be AUS $30.7 to $51.6 billion over the period 2002-2012 in the form of destruction of shareholder value for our sample of large firms. The loss due to making poor takeover decisions with the departure of knowledgeable Gray directors is responsible for approximately AUS $10 billion of the overall destruction in shareholder value.

The ASX CGC/APRA rules do not seem to be based on any quantitative research into the likely effects of the rules. Nor after these rules have been in place for over a decade does the ASX CGC appear to have even asked simple questions about what their rules may have actually have achieved. Was shareholder wealth actually created or destroyed? The Council has never suggested that their rules and recommendations are based on any quantitative analysis or have benefited from data analysis or even purview of the literature. Rules and recommendations are not evidence-based. Rather delegates from various groups making up the Council seek views and opinions from their members and vote on them at ASX CGC meetings without being held to any sort of account. This present paper represents the first independent attempt to evaluate the Council's success or failure over the last decade.

Our findings suggest that canvassing of opinions of industry groups by regulators and then implementing them as either rules, laws, or simply advice is fraught with difficulty. Would the 21 groups making up the Council wish to put their reputations on the line if they knew they were simply adding to the destruction of

shareholder value on a massive scale? Moreover, the claim made by the ASX Governance Council (2003, 2010, 2013) that their recommendations represent "international best practice" seems to be misleading and possibly deceptive. In fact, doing the reverse of their recommendations would seem to provide a better guide to genuine wealth creation and progress toward an effective corporate governance framework in many instances.

References

Adams, Rene B. (2012). "Governance and the Financial Crisis." *International Review of Finance* (special issue on Governance, Policy and the Crisis) 12, 7-38.

Adams, Rene B., and Daniel Ferreira (2007). "A Theory of Friendly Boards." *Journal of Finance* 62, 217-50.

Adams, Rene B., Benjamin E. Hermalin, and Michael S. Weisbach (2010). "The Role of Boards of Directors in Corporate Governance: A Conceptual Framework and Survey." *Journal of Economic Literature* 48, 58-107.

Agrawal, Anup and Charles R. Knoeber (1996). "Firm performance and mechanisms to control agency problems between managers and shareholders." *Journal of Financial and Quantitative Analysis* 31, 377397.

Agrawal, Anup and Tareque Nasser (2011). "Blockholders on Boards and CEO Compensation, Turnover and Firm Valuation." Working Paper, University of Alabama.

Angrist, Joshua D. and Jorn-Steffen Pischke, (2009). *Mostly Harmless Econometrics.* Princeton University Press, New Jersey.

Arellano, M. and S. Bond (1991). "Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations." *Review of Economic Studies* 58, 277-297.

Arellano, M. and O. Bover (1995). "Another look at the instrumental variable estimation of error-component models." *Journal of Econometrics* 68, 29-51.

Arena, Matteo P. and Marcus V. Braga-Alves (2013). "The discretionary effect of CEOs and board chairs on corporate governance structures." *Journal of Empirical Finance* 21, 121131.

ASX Corporate Governance Council (2003). "Principles of Good Corporate Governance and Best Practice Recommendations." See `http://www.asx.com.au/about/corporate_governance/principles_good_corporate_governance.htm`

ASX Corporate Governance Council (2010). "Corporate Governance Principles and Recommendations with 2010 Amendments." Second Edition.

ASX Corporate Governance Council (2013). "Corporate Governance Principles and Recommendations." Third edition, exposure draft. See `http://www.asx.com.au/documents/public-consultations/draft-cgc-3rd-edition.pdf`

Australian Prudential Regulation Authority (2012). "Prudential Standard CPS 510." July.

Barnea, Amir and Ilan Guedj (2009)."Director Networks." Working Paper, Claremont McKenna College (January).

Bhagat, S. and B. S. Black (2002). "The Non-Correlation Between Board Independence and Long-Term Firm Performance." *Journal of Corporation Law* 27, 231 - 273.

Bhagat, S. and Bolton, B. (2008). "Corporate Governance and Firm Performance." *Journal of Corporate Finance* 14, 264 269.

Boone, Audra L., Laura Casares Field, Jonathan M. Karpoff, and Charu G. Raheja (2007). "The Determinants of Corporate Board Size and Composition: An Empirical Analysis." *Journal of Financial Economics* 85, 66-101.

Brickley, J.A., J.L. Coles, and G. Jarrell (1997). "Leadership structure: separating the CEO and chairman of the board." *Journal of Corporate Finance* 3, 189220.

Cadbury Report (1992). "Report of the Committee on the Financial Aspects of Corporate Governance." Gee and Co. Ltd, London.

Cagan, Penny (2001). "HIH Insurance." *ERisk.com* November 2001.

Centro Judgement (27 June, 2011). Australian Securities and Investments Commission v Healey [2011] FCA 717. Judge: Middleton J.

Chhaochharia, V., and Y. Grinstein (2009). "CEO compensation and board structure. *Journal of Finance* 64, 231-261.

Cohen, Lauren, Andrea Frazzini, and Christopher J. Malloy (2012). "Hiring Cheerleaders: Board Appointments of Independent Directors." *Management Science* 58, 10391058.

Coles, Jeffrey L., Naveen D. Daniel, and Lalitha Naveen (2008). "Boards: Does one size fit all?." *Journal of Financial Economics* 87, 329-356.

Coles, Jeffrey L., Naveen D. Daniel, and Lalitha Naveen (2014). "Co-opted Boards." *Review of Financial Studies* 27, 1751-1796.

Cotter, James F., Anil Shivdasani, and Marc Zenner (1997). "Do independent directors enhance target shareholder wealth during tender offers?" *Journal of Financial Economics* 43, 195-218.

Demsetz, Harold (1983). "The Structure of Ownership and Theory of the Firm." *Journal of Law and Economics* 26, 375 - 390.

Dey, Aiyesha, Ellen Engel, and Xiaohui Liu (2011). "CEO and board chair roles: To split or not to split?" *Journal of Corporate Finance* 17, 15951618.

Duchin, Ran, John G. Matsusaka, and Oguzhan Ozbas (2010). "When Are Outside Directors Effective?." *Journal of Financial Economics* 96, 195-214.

Eisenberg, T., S. Sundgren, and M. Wells (1998). "Larger Board Size and Decreasing Firm Value in Small Firms." *Journal of Financial Economics* 48, 35 - 54.

European Commission (2005). "Recommendation on the Role of Non-Executive or Supervisory Directors of Listed Companies and on the Committees of the (Supervisory) Board." See `http://europa.eu.int/eurlex/`

Fama, Eugene (1980). "Agency problems and the theory of the firm." *Journal of Political Economy* 88, 288-307.

Faulkender, Michael and Rong Wang (2006). "Corporate financial policy and the value of cash." *Journal of Finance* 61, 19571990.

Fich, Eliezer M. and Anil Shivdasani (2005). "The Impact of Stock Option Compensation for Outside Directors on Firm Value." *Journal of Business* 78, 2229-2254.

Financial Reporting Council (FRC) (2012). "The UK Corporate Governance Code." September.

Fogel, Kathy, Liping Ma, and Randall Morck (2014). "Powerful Independent Directors." ECGI Working Paper Series in Finance, #404/2014.

Fracassi, C., and G. Tate (2012). "External Networking and Internal Firm Governance." *Journal of Finance* 67, 153 194.

Gillette, Anne B., Thomas. H. Noe, and Michael J. Rebello (2003). "Corporate Board Composition, Protocols, and Voting Behavior." *Journal of Finance* 58, 1997-2031.

Gormley, Todd A., and David A. Matsa (2014a). "Common Errors: How to (and Not to) Control for Unobserved Heterogeneity." *Review of Financial Studies* 27, 617-661.

Gormley, Todd A. and David A. Matsa (2014b). "Playing it Safe? Managerial Preferences, Risk, and Agency Conflicts." Working Paper, Wharton School.

Guner, A. Burak, Ulrike Malmendier, and Geoffrey Tate (2008). "Financial Expertise of Directors." *Journal of Financial Economics* 88, 323 354.

Gorton, Jeffrey N. (2007). "The Rise of Independent Directors in the United States,1950-2005: Of Shareholder Value and Stock Market Prices." *Stanford Law Review* 59, 1465-1568.

Guo, Lixiong and Ronald Masulis (2013). "Board Structure and Monitoring: New Evidence from CEO Turnovers." ECGI Finance Working Paper #351/2013.

Guthrie, K., J. Sokolowsky, and K. Wan (2012). "CEO Compensation and Board Structure Revisited." *Journal of Finance* 67, 1149-1168.

Harris, M. and A. Raviv (2008). "A Theory of Board Control and Size." *Review of Financial Studies* 21, 1797-1832.

Hauser, Roie (2013). "Busy Directors and Firm Performance: Evidence from Mergers." University of Chicago Booth School of Business Job Market Paper.

Hermalin, Benjamin E., and Michael S. Weisbach (1991). "The Effect of Board Composition and Direct Incentives on Firm Performance." *Financial Management* 20, 101112.

Hermalin, Benjamin E., and Michael S. Weisbach (1998). "Endogenously Chosen Boards of Directors and their Monitoring of the CEO." *American Economic Review* 88, 96118.

Hermalin, Benjamin E. and Michael S. Weisbach (2003). "Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature." *Federal Reserve Bank of New York Economic Policy Review* 9, 7-26.

Hwang, Byoung-Hyoun and Seoyoung Kim (2009). "It pays to have friends." *Journal of Financial Economics* 93, 138-158.

Jensen, Michael C. (1986). "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers." *American Economic Review* 76, 323-329.

Jensen, Michael C. (1993). "The Modern Industrial Revolution, Exit and Failure of Internal Control Systems." *Journal of Finance* 48, 831 - 880.

Klein, A. (1998). "Firm performance and board committee structure." *Journal of Law and Economics* 41, 275303.

Knyazeva, A., D. Knyazeva, and C. Raheja (2009). "Heterogeneity in Expertise and Incentives of Board Members. Working paper.

Knyazeva, A., D. Knyazeva, and R. Masulis (2013). "The Supply of Corporate Directors and Board Independence." *Review of Financial Studies* 26, 1561-1605.

Le Mire, Suzanne, and George Gilligan (2013). "Independence and Independent Company Directors." *Journal of Corporate Law Studies* 13, Number 2, 443-475.

Linck, J., J. J. Netter, and T. Yang (2006). "A Large Sample Study on Board Changes and Determinants of Board Structure." *Journal of Financial Economics* 87, 308 - 328.

Mace, Myles L. (1976). "The Changing Role of Directors in the 1970s." *The Business Lawyer* 31, Proceedings: "The Airlie House Symposium: An In-Depth Analysis of the Federal and State Roles in Regulating Corporate Management, June 13-14, 1975." (February 1976), 1207-1213.

Masulis, R., C. Wang and F. Xie (2007). "Corporate Governance and Acquirer Returns." *Journal of Finance* 62, 1851-1889.

Masulis, Ronald W., C. Wang, C., and F. Xie (2009). "Agency problems at dual class companies." *Journal of Finance* 64, 16971727.

Masulis, Ronald, and Shawn Mobbs (2013). "Where Do Talented Directors Spend Their Limited Time and Energy?," European Corporate Governance Institute, Finance Working Paper #355/2013.

Masulis, Ronald W., Christian Ruzzier, Sheng Xiao, and Shan Zhao (2012). "Do Independent Directors Matter?." Working paper, University of New South Wales.

Masulis, R. W., C. Wang, and F. Xie (2012). "Globalizing the Boardroom The Effects of Foreign Directors on Corporate Governance and Firm Performance." *Journal of Accounting and Economics* 53, 527-554.

Mehran, H. (1995). "Executive Compensation Structure, Ownership, and Firm Performance." *Journal of Financial Economics* 38, 163 - 184. Minnick, Kristina, Haluk Unal, and Liu Yang (2011). "Pay for Performance? CEO Compensation and Acquirer Returns in BHCs." *Review of Financial Studies* 24, 439-472.

NASDAQ (2003). "Corporate Governance Rule Changes." See www.nasdaq.com/about/CorpGovSummary.pdf

NYSE (2003). "Listed Company Manual, s303A Corporate Governance Rules," see www.nyse.com/pdfs/finalcorpgovrules.pdf

NYSE Listed Company Manual (2013). "303A.00 Corporate Governance Standards. NYSE Euronext.

OECD (2004). *Principles of Corporate Governance* see www.oecd.org

Perry, Todd (1999). "Incentive compensation for outside directors and CEO turnover." Working Paper, Arizona State University.

Pfeffer, J. (1972). "Size and Composition of Corporate Boards of Directors: The Organization and Environment." *Administrative Science Quarterly* 17, 218 229.

Raheja, Charu G. (2005). "Determinants of board size and composition: A theory of corporate boards." *Journal of Financial and Quantitative Analysis* 40, 283-305.

Ravina, Enrichetta, and Paola Sapienza (2010). "What Do Independent Directors Know? Evidence from Their Trading." *Review of Financial Studies* 23, 962-1003.

Ringe, Wolf-Georg (2013). "Independent Directors: After the Crisis." *European Business Organization Law Review* 14, 401-424.

Romano, Roberta (2005). "The Sarbanes-Oxley Act and the Making of Quack Corporate Governance." *Yale Law Journal* 114, 1521-1611.

Securities and Exchange Commission (2003). "Final Rule. Standards Relating to Listed Company Audit Committees." Release No. 34-47654. 17 CFR PARTS 228, 229, 240, 249 and 274.

Shivdasani, Anil and David Yermack (1999). "CEO Involvement in the Selection of New Board Members: An Empirical Analysis." *Journal of Finance* 54, 1829-1853.

Wintoki, M. Babajide, James S. Linck, and Jeffry M. Netter (2012). "Endogeneity and the Dynamics of Internal Corporate Governance." *Journal of Financial Economics* 105, 581-606.

Yermack, David (1996). "Higher market valuation of companies with a small board of directors." *Journal of Financial Economics* 40, 185-211.

Yermack, David (2004). "Remuneration, Retention, and Reputation Incentives for Outside Directors." *Journal of Finance* 59, 2281-2308.

Table 1: Descriptive Statistics

	Mean	Median	Std Deviation	5th Percentile	95th Percentile
Tobin's Q	2.0658	1.9666	1.9459	0.7541	5.6655
Market to Book	2.9565	1.8300	3.7518	0.5565	8.8824
Total Assets ($m)	9,679	680	55,504	11	21,581
Market Capitalization ($m)	3,036	662	9,074	16	11,440
CEO Total Compensation ($)	1,785,098	1,070,318	1,981,292	172,556	6,074,322
CEO Share Holdings	3.5392%	0.1789%	0.0884	0%	20.578%
CEO LT % Total Compensation	14.5084%	5.3224%	0.2682	0%	55.666%
Average RID Total Comp. ($)	110,960	90,756	79,317	16,942	280,000
Average NED Total Comp. ($)	112.197	89.925	88.581	13.540	288.920
Average Gray Total Comp. ($)	115,397	70,000	158,842	0	395,000
Board Size	6.7432	7	2.1570	4	11
Proportion RIDs	0.5493	0.5714	0.2351	0.1000	0.8750
Proportion EDs	0.1911	0.1667	0.1355	0	0.4444
Proportion RGs	0.1148	0	0.1592	0	0.4286
Proportion IGs	0.0783	0	0.1472	0	0.4000
Proportion dual IGs RGs	0.0101	0	0.0471	0	0.0100
Proportion dual IGs EDs	0.0564	0	0.1152	0	0.3333
Proportion IGs Audit Com.	0.0671	0	0.1625	0	0.4000
Proportion dual IGs RGs Audit Com.	0.0086	0	0.0582	0	0.0000

Table 2: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Ln Tobin's Q (1)	1													
Ln MTB (2)	0.92	1												
Ln CEO TCIL (3)	-0.03	0.06	1											
CEO PPS (4)	0.15	0.12	-0.20	1										
CEO LT % TCIL (5)	0.12	0.09	0.34	-0.14	1									
Ln NED TCIL (6)	-0.06	0.01	0.48	-0.17	0.18	1								
Ln RID TCIL (7)	-0.10	-0.02	0.58	-0.20	0.21	0.78	1							
Ln Gray TCIL (8)	-0.04	-0.01	0.24	-0.07	0.09	0.75	0.35	1						
Lag1 Prop RIDs (9)	-0.12	-0.09	0.23	-0.16	0.01	0.30	0.32	0.19	1					
Lag1 Prop EDs (10)	0.05	0.04	0.05	-0.14	0.11	0.06	-0.01	0.07	-0.29	1				
Lag1 Prop RGs (11)	-0.01	-0.02	-0.01	-0.09	0.02	-0.06	-0.01	-0.06	-0.40	-0.11	1			
Lag1 Prop IGs (12)	0.00	-0.03	-0.15	0.04	-0.06	-0.24	-0.19	-0.18	-0.39	-0.16	-0.34	1		
Lag1 Prop IGs A.Com (13)	0.11	0.08	-0.10	0.12	-0.02	-0.20	-0.20	-0.12	-0.36	-0.04	-0.28	0.74	1	
Lag1 Ln Board Size (14)	-0.22	-0.12	0.41	-0.18	-0.01	0.22	0.31	0.10	0.19	-0.10	0.08	-0.07	-0.14	1
Lag1 Ln Total Assets (15)	-0.41	-0.28	0.60	-0.23	0.04	0.48	0.54	0.29	0.35	-0.05	0.00	-0.16	-0.22	0.58

Table 3: Likelihood of a Decreasing Proportion of Gray Directors

This table illustrates the regression results of the probit regression approach applied to 430 top-200 firms, with observations between the financial year-ends of 2001 and 2012, utilizing an indicator of a decrease of the proportion Gray directors (column 1 and 2) and an indicator of a decrease of the proportion Executive directors as dependent variables. Columns (1) and (3) report the regression estimates using all firms, and columns (2) and (4) report the regression estimates when excluding financial firms. The variables of interest are the lagged proportion of Regular Gray directors on the board, the lagged proportion of Incentivized Gray directors on the board, the lagged proportion of directors considered to be both Regular Gray directors and Incentivized Gray directors on the board, the logarithm of lagged board size, the lagged CEO Shareholdings, the lagged CEO Total Compensation, and the logarithm of lagged Tobin's Q. Regressions (1) and (2) only include firms with a lagged proportion of Gray directors >0, and regressions (3) and (4) only include firms with a lagged proportion of Gray directors >0.

	Likelihood of Decreasing Proportion of Gray Directors		Likelihood of Decreasing Proportion of Executive Directors	
	(1)	(2)	(3)	(4)
	All Firms	Excl. Financial Firms	All Firms	Excl. Financial Firms
Lag1 Prop. RGs Board	1.529***	1.574***	−0.568***	−0.521***
	(5.86)	(5.65)	(2.90)	(2.60)
Lag1 Prop. Dual RGs IGs Board	0.762	0.562	−0.112	0.104
	(1.22)	(0.86)	(0.16)	(0.14)
Lag1 Prop. IGs Board	0.825***	1.020***	−0.201	−0.364
	(3.02)	(3.41)	(0.84)	(1.44)
Lag1 Ln Board Size	−0.105	−0.145	−0.533***	−0.454***
	(0.88)	(1.13)	(4.75)	(3.90)
Lag1 CEO PPS	0.393	0.265	0.0368	0.215
	(0.95)	(0.61)	(0.10)	(0.54)
Lag1 Ln CEO TCIL	0.112***	0.107***	0.0906***	0.0962***
	(3.06)	(2.63)	(2.88)	(2.83)
Lag1 Ln Tobin's Q	0.00120	−0.0223	0.152***	0.168***
	(0.02)	(0.40)	(3.20)	(3.38)
Constant	−2.005***	−1.862***	0.174	−0.0727
	(4.18)	(3.54)	(0.43)	(0.17)
Observations	1,818	1,590	2,849	2,441
Wald χ^2	36.91	33.52	49.07	42.75
Prob > χ^2	0.000	0.000	0.000	0.000

Absolute t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Fixed Effects Regression Analysis of the Impact of Board Composition on Firm Performance

This table illustrates the regression results of the Firm and combined Industry-Year Fixed Effects approach applied to 430 top-200 firms, with observations between the financial year-ends of 2001 and 2012, utilizing the logarithm of Tobin's Q and the logarithm of Market-to-Book as Performance Variables. Columns (1) and (2) report the fixed effects estimates using all firms, columns (3) and (4) report the fixed effects estimates when excluding financial firms, and columns (5) and (6) report the fixed effects estimates for financial firms. The variables of interest are the lagged proportion of Regular Gray directors on the board, the lagged proportion of Incentivized Gray directors on the Audit committee, the lagged proportion of directors considered to be both Regular Gray directors and Incentivized Gray directors on the Audit committee, an indicator for whether the CEO is the chairman of the board, and the logarithm of board size. The dependent variables have been winsorized at the 1% tails to avoid extremal skewness.

	All Firms		Excl. Financial Firms		Financial Firms	
	(1)	(2)	(3)	(4)	(5)	(6)
	T's Q	MTB	T's Q	MTB	T's Q	MTB
Lag1 Prop. RGs Board	0.244**	0.350**	0.262**	0.384**	0.143	0.114
	(2.17)	(2.20)	(2.08)	(2.19)	(0.88)	(0.40)
Lag1 Prop. Dual RGs IGs Board	0.304	0.871**	0.239	0.867**	0.853	0.995
	(1.17)	(2.17)	(0.93)	(2.10)	(0.70)	(0.70)
Lag1 Prop. IGs Audit Com.	0.234**	0.161	0.287**	0.278*	−0.157	−0.630***
	(2.28)	(1.11)	(2.45)	(1.71)	(1.21)	(3.09)
Lag1 CEO Chairman	0.214***	0.169*	0.247***	0.214**	−0.682***	−0.968***
	(2.68)	(1.65)	(3.18)	(2.11)	(6.92)	(8.15)
Lag1 Ln Board Size	−0.0109	−0.00257	−0.00222	0.0518	−0.113	−0.509***
	(0.16)	(0.03)	(0.03)	(0.48)	(1.05)	(2.86)
Observations	2,877	2,835	2,418	2,377	459	458
R^2	0.720	0.709	0.698	0.696	0.830	0.806

Absolute t statistics in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Clustered by Firm

Table 5: Fixed Effects Regression Analysis of the Impact of Board Composition on Takeovers Performance

This table illustrates the regression results of the Firm and combined Industry-Year Fixed Effects approach applied to top-200 firms, with observations between the financial year-ends of 2001 and 2012, utilizing the 5 days market adjusted CAR as dependent variable. Column (1) reports the fixed effects estimates using all firms, column (2) reports the fixed effects estimates when excluding financial firms, and column (3) reports the fixed effects estimates for financial firms. The variables of interest are the proportion of Regular Gray directors on the board, the proportion of Incentivized Gray directors on the Audit committee, the proportion of directors considered to be both Regular Gray directors and Incentivized Gray directors on the Audit committee, an indicator for whether the CEO is the chairman of the board, and the logarithm of board size. The included control variables are the logarithm of firm size, Tobin's Q, leverage, free cash flow, relative size and an indicatot for whether the takeover was a stock acquisition or cash-hybrid.

	(1) All Firms	(2) Excl. Financial Firms	(3) Financial Firms
Prop. RGs Board	0.0989***	0.107***	−0.125*
	(2.73)	(3.17)	(1.81)
Prop. IGs Audit Com.	0.00391	−0.00683	0.116
	(0.07)	(0.13)	(1.01)
Prop. Dual RGs IGs Audit Com.	−0.242	−0.893***	−0.419
	(0.79)	(3.42)	(1.32)
CEO Chairman	−0.0681	−0.107**	0.149***
	(1.35)	(2.29)	(4.63)
Ln Board Size	−0.00836	−0.0265	0.0144
	(0.26)	(0.75)	(0.39)
Ln Firm Size	−0.0210*	−0.0268**	0.0508***
	(1.75)	(2.21)	(3.05)
Tobin's Q	−0.00858**	−0.00789**	−0.0897***
	(2.52)	(2.40)	(3.26)
Leverage	0.0000419	0.000255	−0.355
	(0.11)	(0.56)	(1.37)
Free Cash Flow	−0.0124	−0.0237	0.0128
	(0.62)	(0.88)	(1.40)
Relative Size	−0.0107	−0.00467	−0.00578
	(1.52)	(0.27)	(1.12)
Stock Acquisition	0.0107	0.00235	0.0435***
	(0.73)	(0.14)	(3.60)
Observations	734	590	144
R^2	0.481	0.528	0.443

Absolute t statistics in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Clustered by Firm

Table 6: Fixed Effects Regression Analysis of the Impact of Board Composition on CEO Compensation Variables

This table illustrates the regression results of the Firm and Year Fixed Effects approach applied to 430 top-200 firms, with observations between the financial year-ends of 2001 and 2012. Dependent variables are the logarithm of CEO Total Compensation Including Long Term Compensation (i.e. TCIL) (1 & 2), CEO Shareholdings as a percentage of total number of outstanding shares (i.e., PPS) (3 & 4) and Long Term Compensation as a percentage of Total Compensation (i.e., CEO%LT) (5 & 6). The variables of interest are the lagged proportion of Regular Gray directors on the board, the lagged proportion of Incentivized Gray directors on the Audit committee, the lagged proportion of directors considered to be both Regular Gray directors and Incentivized Gray directors on the Audit committee, an indicator for whether the CEO is the chairman of the board, and the logarithm of lagged board size. The included control variables are an indicator for whether the CEO is the chairman of the board, the logarithm of total assets, the lagged volatility of daily stock return, lagged stock return and lagged ROA. The CEO is excluded when determining the proportion of Executive Directors and Executive Incentivized Directors. The logarithm of CEO Total Compensation Including Long Term Compensation has been winsorized at the 1% tails to avoid extremal skewness.

	(1) CEO TCIL	(2) CEO TCIL	(3) CEO PPS	(4) CEO PPS	(5) CEO %LT	(6) CEO %LT
Lag1 Prop. RGs Board	0.0971		−0.0115		0.0698***	
	(0.97)		(1.57)		(2.63)	
Lag1 Prop. IGs Board	−0.188		0.0128		0.133	
	(1.03)		(0.46)		(1.41)	
Lag1 Prop. Dual RGs IGs Board	−0.0758		−0.144**		−0.00820	
	(0.17)		(2.45)		(0.10)	
Lag1 Prop. RIDs Board		0.0219		0.00397		−0.0928**
		(0.25)		(0.29)		(2.19)
Lag1 Prop. EDs Board		−0.323***		0.0471**		−0.0784
		(6.81)		(2.05)		(1.39)
Lag1 Prop. Dual EDs IGs Board		−0.765***		0.0514		0.0881
		(5.43)		(0.83)		(1.07)
Lag1 Ln Board Size	0.194*	0.188*	−0.00631	−0.00593	0.00895	0.0248
	(1.76)	(1.71)	(1.47)	(0.93)	(0.21)	(0.58)
CEO Chairman	0.135	0.127	0.0791*	0.0801**	−0.00647	−0.00510
	(1.31)	(1.29)	(1.90)	(2.00)	(0.14)	(0.11)
Ln Total Assets	0.227***	0.231***	−0.00378	−0.00353	0.00795	0.00807
	(17.22)	(18.76)	(1.42)	(1.46)	(0.89)	(0.84)
Lag1 Volatility of Daily Returns	−0.110	0.155	−0.209	−0.209	0.425**	0.407*
	(0.11)	(0.17)	(1.39)	(1.38)	(2.04)	(1.78)
Lag1 Stock Return	0.0742***	0.0750***	0.00152	0.00134	0.0232***	0.0230***
	(4.97)	(4.79)	(1.17)	(1.02)	(9.98)	(8.39)
Lag1 ROA	0.0153*	0.0136	0.00218	0.00283	0.00012	−0.00078
	(1.86)	(1.58)	(0.81)	(1.02)	(0.01)	(0.07)
Observations	2,746	2,746	2,837	2,837	2,810	2,810
R^2	0.780	0.781	0.707	0.706	0.241	0.241

Absolute t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Clustered by Industry

Table 7: Fixed Effects Regression Analysis of the Impact of Board Composition on Non-Executive Directors' Compensation

This table illustrates the regression results of the Firm and Year Fixed Effects approach applied to 430 top-200 firms, with observations between the financial year-ends of 2001 and 2012. Columns (1) and (2) report the fixed effects estimates with the logarithm of non-executive directors' average total compensation as dependent variable (i.e., NED TCIL), columns (3) and (4) report the fixed effects estimates with the logarithm of Real Independent directors' average total compensation (i.e., RID TCIL) as the dependent variable, and columns (5) and (6) report the fixed effects estimates with the logarithm of Gray directors' average total compensation (i.e., GRAY TCIL) as the dependent variable. The variables of interest are the lagged proportion of Regular Gray directors on the board, the lagged proportion of Incentivized Gray directors on the Audit committee, the lagged proportion of directors considered to be both Regular Gray directors and Incentivized Gray directors on the Audit committee, an indicator for whether the CEO is the chairman of the board, and the logarithm of lagged board size. The included control variables are an indicator type of chairman of the board, the logarithm total assets, lagged volatility of daily stock return, lagged stock return and lagged ROA. The dependent variables have been winsorized at the 1% tails to avoid extremal skewness.

	(1) NED TCIL	(2) NED TCIL	(3) RID TCIL	(4) RID TCIL	(5) GRAY TCIL	(6) GRAY TCIL
Lag1 Prop. RGs Board	−0.198*		0.0879		−0.194	
	(1.65)		(1.04)		(0.94)	
Lag1 Prop. IGs Board	−0.320**		−0.123		−0.200	
	(2.27)		(1.19)		(0.73)	
Lag1 Prop. Dual RGs IGs Board	−0.832**		−0.599***		−1.008	
	(2.27)		(3.25)		(1.58)	
Lag1 Prop. RIDs Board		0.298***		0.135**		0.218
		(2.92)		(2.55)		(1.04)
Lag1 Prop. EDs Board		0.210		−0.253*		0.334
		(1.38)		(1.91)		(1.09)
Lag1 Prop. Dual EDs IGs Board		0.352		−0.173		0.509
		(1.48)		(0.98)		(1.05)
Lag1 Ln Board Size	0.0402	0.0493	0.0592	0.0463	0.0898	0.125
	(0.48)	(0.58)	(1.00)	(0.76)	(0.65)	(0.89)
NED Chairman	0.325***	0.322***				
	(4.65)	(4.62)				
RID Chairman			0.269***	0.258***		
			(8.23)	(8.32)		
Gray Chairman					0.477***	0.472***
					(6.06)	(5.96)
Ln Total Assets	0.143***	0.147***	0.136***	0.141***	0.120***	0.123***
	(6.37)	(6.89)	(12.55)	(13.60)	(3.52)	(3.66)
Lag1 Volatility of Daily Returns	−1.547	−1.473	−1.654***	−1.487***	−1.658	−1.656
	(1.14)	(1.11)	(2.81)	(2.63)	(0.69)	(0.71)
Lag1 Stock Return	0.0261**	0.0261**	0.00382	0.00536	0.0471**	0.0452*
	(2.19)	(2.19)	(0.22)	(0.30)	(2.04)	(1.94)
Lag1 ROA	0.0170	0.0147	0.0218***	0.0161**	−0.00235	−0.00373
	(1.21)	(1.03)	(3.21)	(2.23)	(0.14)	(0.22)
Observations	2,936	2,936	2,827	2,827	1,728	1,728
R^2	0.724	0.723	0.733	0.734	0.675	0.674
Cluster	Firm	Firm	Industry	Industry	Firm	Firm

Absolute t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Fixed Effects Regression Analysis of the Impact of Board Composition on Dividend and Payout Variables

This table illustrates the regression results of the Firm and combined Industry-Year Fixed Effects approach applied to 430 top-200 firms, with observations between the financial year-ends of 2001 and 2012. Columns (1) and (2) report the fixed effects estimates with the payout ratio, taking into account dividend and buy-backs, as dependent variable, and columns (3) and (4) report the fixed effects estimates with the Aspect Huntley dividend ratio as the dependent variable. Only firm-year observations with positive earnings are included. Variables of interest are the lagged proportion of Regular Gray directors on the board, the lagged proportion of Incentivized Gray directors on the Audit committee, the lagged proportion of directors considered to be both Regular Gray directors and Incentivized Gray directors on the Audit committee, the lagged proportion of Real Independent directors (defined as independent directors who are not past executives of the firm) on the board, the lagged proportion of Executive directors on the board, the lagged proportion of Incentivized Executive directors on the board and the lagged logarithm of board size. The included control variables are the logarithm total assets, stock return and franking credits on the final dividend.

	(1) Payout Ratio	(2) Payout Ratio	(3) Dividend Ratio	(4) Dividend Ratio
Lag1 Prop. RGs Board	0.660		0.362**	
	(1.41)		(2.34)	
Lag1 Prop. IGs Audit Com.	0.182		0.147*	
	(1.58)		(1.92)	
Prop. Dual RGs IGs Audit Com.	0.586**		0.460*	
	(2.03)		(1.74)	
Lag1 Prop. RIDs Board		−0.550		−0.357
		(1.10)		(1.59)
Lag1 Prop. EDs Board		−0.619		−0.409
		(1.61)		(1.24)
Lag1 Prop. Dual EDs IGs Board		−0.567		−0.579
		(1.08)		(0.98)
Lag1 Ln Board Size	−0.495	−0.405	−0.112	−0.0966
	(1.36)	(1.51)	(0.75)	(0.86)
Lag1 Ln Total Assets	−0.103	−0.187	−0.0361	−0.126
	(0.82)	(1.48)	(0.79)	(1.61)
Stock Return	−0.199	−0.173	−0.138**	−0.121***
	(1.01)	(1.33)	(2.00)	(2.65)
Franking	0.119	0.142	0.0586	0.0638
	(0.75)	(0.87)	(0.67)	(0.76)
Observations	1,960	2,062	1,881	1,982
R^2	0.296	0.298	0.545	0.530

Absolute t statistics in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Clustered by Industry

Table 9: Fixed Effects Regression Analysis of the Impact of Board Composition on Leverage

This table illustrates the regression results of the Firm and combined Industry-Year Fixed Effects approach applied to 430 top-200 firms, with observations between the financial year-ends of 2001 and 2012, utilizing the logarithm of leverage (defined as liabilities divided by market value of assets) as dependent variable. Column (1) reports the fixed effects estimates using all firms, column (2) reports the fixed effects estimates when excluding financial firms, and column (3) reports the fixed effects estimates for financial firms. The variables of interest are the lagged proportion of Regular Gray directors on the board, the lagged proportion of directors considered to be both Regular Gray directors and Incentivized gray directors on the board, the lagged proportion of Incentivized Gray directors on the Audit committee, a lagged indicator for whether the CEO is the chairman of the board, and the lagged logarithm of board size.

	(1) All Firms	(2) Excl. Financial Firms	(3) Financial Firms
Lag1 Prop. RGs Board	−0.271	−0.310	−0.0226
	(1.39)	(1.42)	(0.09)
Lag1 Prop. Dual RGs IGs Board	−1.266**	−1.272**	−1.107***
	(2.32)	(2.13)	(3.54)
Lag1 Prop. IGs Audit Com.	−0.150	−0.200	0.298
	(0.80)	(0.93)	(1.59)
Lag1 CEO Chairman	−0.271*	−0.305*	0.575***
	(1.75)	(1.90)	(10.01)
Lag1 Ln Board Size	−0.180	−0.200	0.0536
	(1.61)	(1.64)	(0.23)
Observations	2,878	2,419	459
R^2	0.781	0.764	0.856

Absolute t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Clustered by Firm

Table 10: Simulation of the Impact of Loss of Gray Directors on Firm Value, 2003-2012

	(1) Decreasing proportion of Regular Gray directors	(2) Decreasing proportion of Incentivized Gray directors on the audit committee	(3) Decreasing average of CEO Chairmen	(4) Total Cost
Coefficient	0.2440	0.2340	0.2140	
Decrease in absolute values 2002-2012	-0.0215	-0.0169	-0.0067	
% impact = exp(Coefficient * decrease) - 1	-0.52%	-0.39%	-0.14%	
Average Total Assets ($m)	9,679	9,679	9,679	
Average Total Liabilities ($m)	8,109	8,109	8,109	
Average Market Cap ($m)	3,048	3,048	3,048	
Tobin's Q (calculated by averages)	1.1527	1.1527	1.1527	
Updated Tobin's Q = Tobin's Q / (% Impact + 1)	1.1587	1.1572	1.1543	
$m Impact on Market Cap/Firm (Holding assets and liabilities constant)	-$59	-$44	-$16	
% Impact on Market Cap	-1.92%	-1.45%	-0.53%	
Total Impact = $m Impact on Market Cap/Firm * Number of Firms	-$25,209.32	-$18,998.89	-$7,383	-$51,591

Table 11: Relationship between Board Composition and Past Performance

This table illustrates the regression results of the Firm and combined Industry-Year Fixed Effects approach applied to 430 top-200 firms to 430 top-200 firms, with observations between the financial year-ends of 2001 and 2012. The dependent variables are contemporary board composition variables. The variables of interest are lagged board composition variables and lagged performance, utilizing the logarithm of Tobin's Q as performance variable.

	(1) Prop. RGs	(2) Prop IGs A.Com.	(3) Prop Dual RGs IGs	(4) CEO Chairman	(5) Board Size
Dependent variable is the contemporary value					
Lag1 Ln Tobin's Q	−0.00584	0.00197	−0.00000244	0.000188	0.0230*
	(0.84)	(0.32)	(0.00)	(0.02)	(1.95)
Lag1 Prop. RGs Board	0.370***	0.0154	0.000740	−0.0212	−0.0177
	(12.54)	(0.69)	(0.13)	(0.71)	(0.48)
Lag1 Prop. IGs Audit Com.	0.0208	0.391***	0.00801	−0.00361	0.0144
	(0.86)	(10.57)	(1.56)	(0.09)	(0.51)
Lag1 Prop. Dual RGs IGs Board	0.150*	−0.00458	0.530***	−0.0747	−0.156
	(1.93)	(0.08)	(8.10)	(0.70)	(1.36)
Lag1 CEO Chairman	0.0172	0.0245*	0.0132*	0.469***	−0.0116
	(1.09)	(1.71)	(1.66)	(8.99)	(0.45)
Lag1 Ln Board Size	0.0306*	−0.0151	0.00679*	−0.0488**	0.405***
	(1.72)	(1.03)	(1.73)	(2.13)	(14.69)
Observations	2,864	2,836	2,864	2,864	2,864
R^2	0.688	0.720	0.756	0.782	0.814
Dependent variable is the difference between the contemporary value and the lagged value					
Lag1 Ln Tobin's Q	−0.00584	0.00197	−0.00000244	0.000188	0.0230*
	(0.84)	(0.32)	(0.00)	(0.02)	(1.95)
Lag1 Prop. RGs Board	−0.630***	0.0154	0.000740	−0.0212	−0.0177
	(21.37)	(0.69)	(0.13)	(0.71)	(0.48)
Lag1 Prop. IGs Audit Com.	0.0208	−0.609***	0.00801	−0.00361	0.0144
	(0.86)	(16.49)	(1.56)	(0.09)	(0.51)
Lag1 Prop. Dual RGs IGs Board	0.150*	−0.00458	−0.470***	−0.0747	−0.156
	(1.93)	(0.08)	(7.19)	(0.70)	(1.36)
Lag1 CEO Chairman	0.0172	0.0245*	0.0132*	−0.531***	−0.0116
	(1.09)	(1.71)	(1.66)	(10.17)	(0.45)
Lag1 Ln Board Size	0.0306*	−0.0151	0.00679*	−0.0488**	−0.595***
	(1.72)	(1.03)	(1.73)	(2.13)	(21.62)
Observations	2,864	2,836	2,864	2,864	2,864
R^2	0.400	0.426	0.327	0.335	0.401

Absolute t statistics in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Clustered by Firm

Table 12: Board Composition Adjustments to Past Performance

This table illustrates the regression results of the Firm and combined Industry-Year Fixed Effects approach applied to 430 top-200 firms to 430 top-200 firms, with observations between the financial year-ends of 2001 and 2012. The dependent variable is the lagged logarithm of Tobin's Q. The board composition variables are the lagged and contemporary proportion Regular Gray directors on the board, the lagged and conemporary proportion Incentivized Gray directors on the Audit Committee, the lagged and contemoporary proportion of directors considered to be both Regular Gray directors and Incentivized Gray directors, a lagged and contemporary indicator for whether the CEO is the chairman of the board, and the lagged and contemporary logarithm of board size.

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Variable is lagged the logarithm Tobin's Q					
Lag1 Prop. RGs Board	0.217**	0.175	0.185	0.185	0.187*	0.207**
	(2.06)	(1.49)	(1.61)	(1.61)	(1.65)	(1.99)
Lag1 Prop. IGs Audit Com.	0.263**	0.253**	0.261**	0.261**	0.258**	0.253**
	(2.13)	(2.39)	(2.12)	(2.11)	(2.10)	(2.48)
Lag1 Prop. Dual RGs IGs Board	0.254	0.262	0.241	0.241	0.264	0.332
	(0.92)	(0.87)	(0.93)	(0.89)	(0.97)	(1.18)
Lag1 CEO Chairman	0.192*	0.182	0.190*	0.190*	0.192*	0.215**
	(1.77)	(1.60)	(1.76)	(1.94)	(1.72)	(2.12)
Lag1 Ln Board Size	0.0269	0.0408	0.0242	0.0243	−0.0375	−0.0359
	(0.40)	(0.61)	(0.36)	(0.36)	(0.59)	(0.60)
Prop. RGs Board	−0.0885					−0.0806
	(0.84)					(0.74)
Prop. IGs Audit Com.		0.0318				0.0283
		(0.32)				(0.27)
Prop. Dual RGs IGs Board			−0.000456			−0.0777
			(0.00)			(0.21)
CEO Chairman				0.00172		−0.0605
				(0.02)		(0.59)
Ln Board Size					0.152**	0.190**
					(1.98)	(2.47)
Observations	2.864	2.836	2.864	2.864	2.864	2.836
R^2	0.698	0.700	0.698	0.698	0.699	0.702

Absolute t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: Board Composition

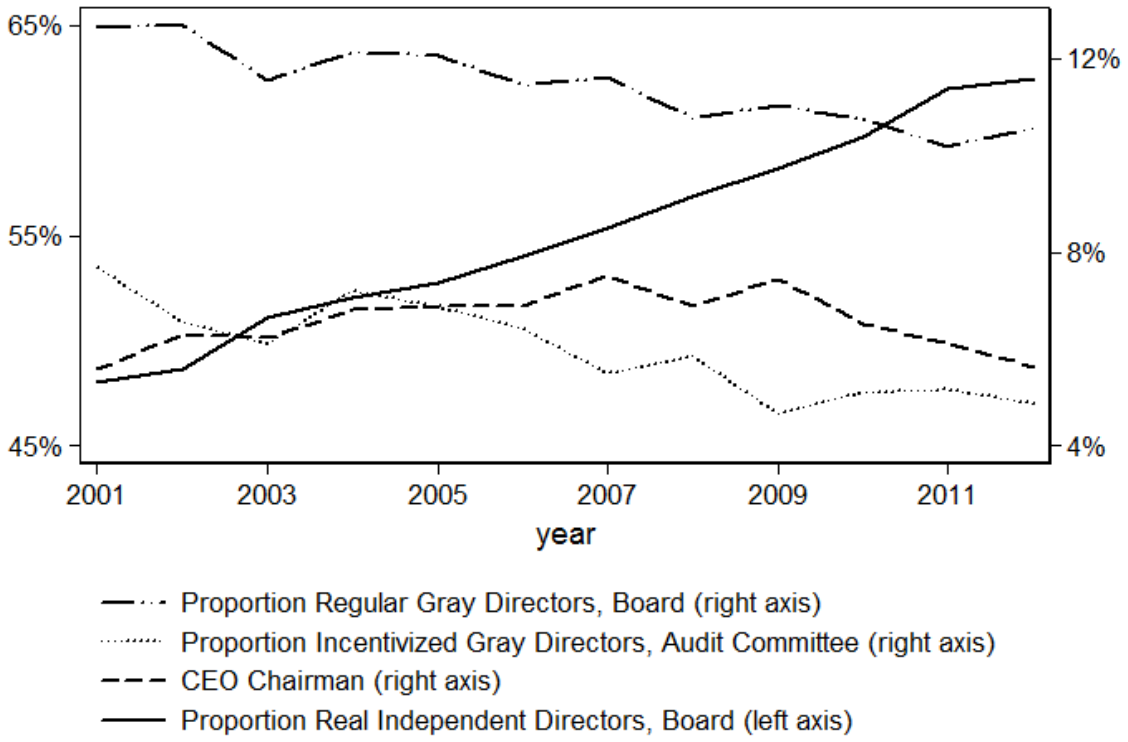

Figure 2: Average Shareholdings per Director-Type

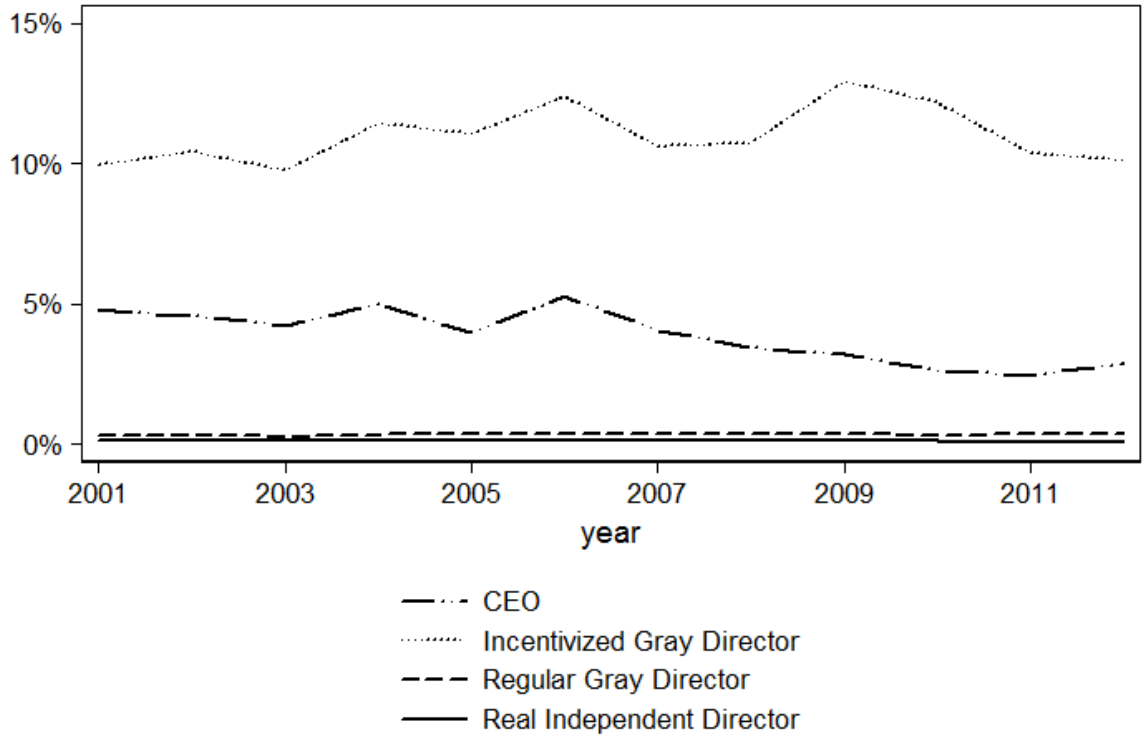

Figure 3: Tobin's Q - Impact of Board Composition

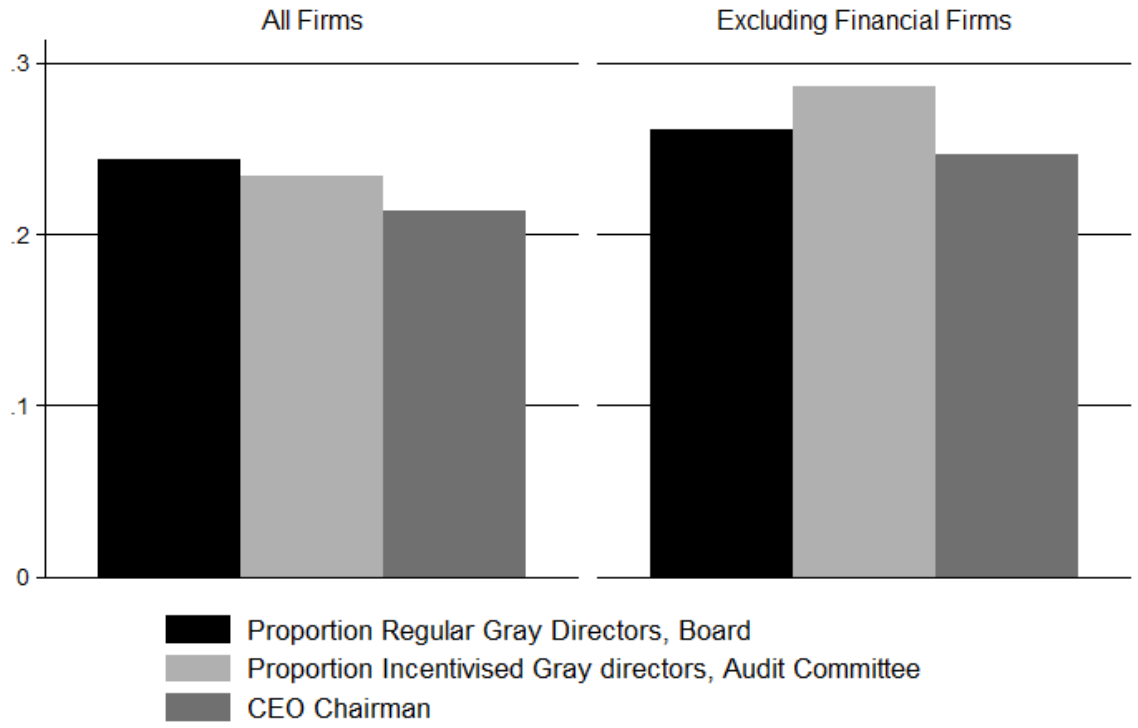

Figure 4: Non-Executive Directors' Compensations - Impact of Board Composition

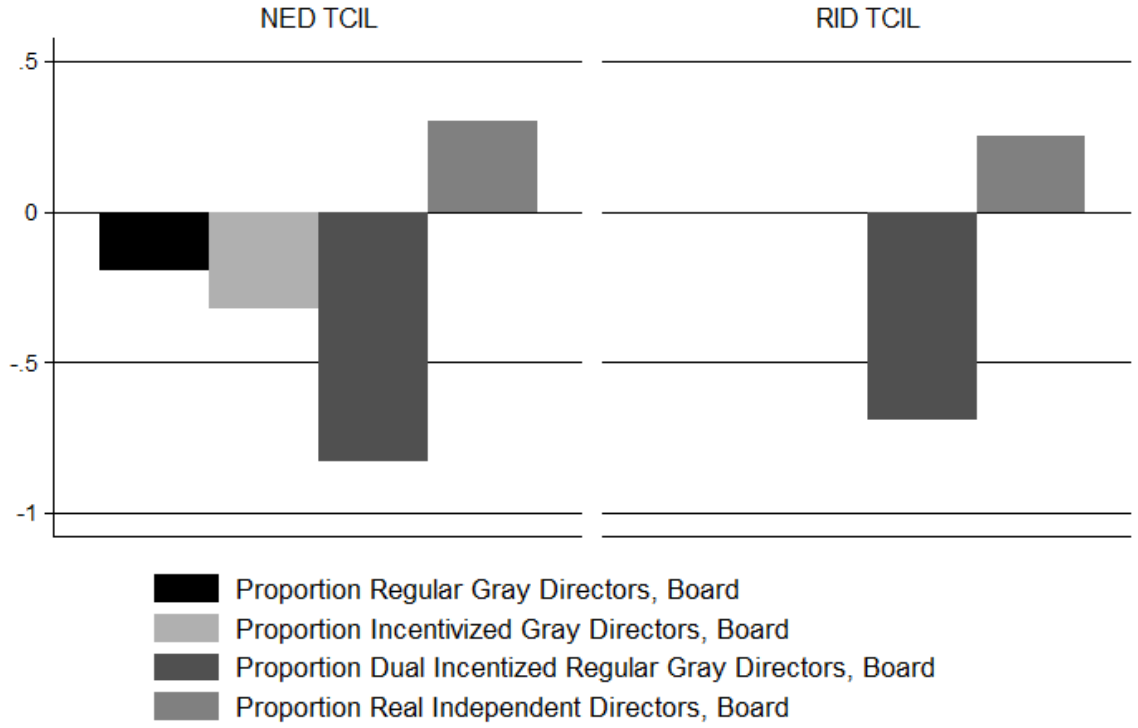

Figure 5: Payout Ratios - Impact of Board Composition

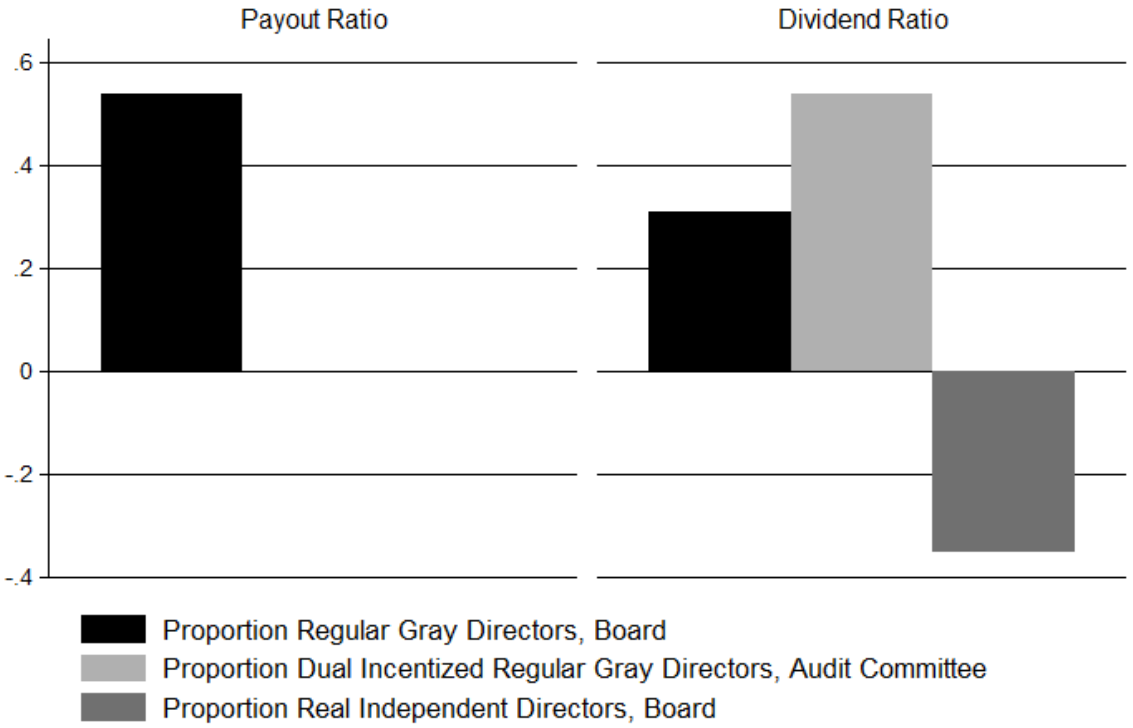

Figure 6: Simulation of Cost ($ Million)- Impact of Board Composition