Does Board "Independence" Destroy Corporate Value?
Outcome of a Quasi-Natural Experiment[*]

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Abstract

Commencing in 2003 the Australian Securities Exchange (ASX) Corporate Governance Council (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". 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 from management. Within a framework of both fixed firm and year effects, we show that firm performance declines significantly as both Regular and Incentivized "Gray" directors depart the firm to make way for "Independents". We estimate the cost of the performance decline to be AUS $85 billion (5.1%) over the period 2002-2012 in the form of destruction of shareholder value, with a $17.8 million (2.17%) rise in CEO pay and another $2.1 million (1%) rise in director fees.

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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 suggest that independent directors free of personal associations with senior executives and major shareholders[3] should be more dispassionate and less biased in favour 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. The two remaining board groups, executives who constitute the management and outside "Gray" (i.e., "Regular" outside directors that retain links with management and "incentivised" directors that retain links with significant shareholders), are both more likely to have interests better aligned with shareholders than are "independent" non-executive directors that are barred from either being substantial shareholders themselves or being associated with them.[4] According to the Australian Securities Exchange's (hereafter ASX) Corporate Governance Council's (hereafter 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

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[3]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.

[4] 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.

"independent". Commencing in 2003, the CGC[5] 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.

In this paper we investigate the effect of the Australian Securities Exchange (ASX) Corporate Governance Council (CGC) recommendations in altering the board structure of 459 of the largest ASX listed companies that have appeared in the Top 200 in the period 2001-2012, inclusive. In particular, we find that on 1,103 occasions, the proportion of either Regular "Gray" directors, with some current or previous association with management, or Incentivized "Gray" directors, either a significant shareholder or associated with one, on boards was reduced as the result of the appointment of an additional "Independent" director. Controlling fully for all observable and unobservable firm and year fixed effects and with an overall level of explanation of around 74%, we identify a sizeable loss in shareholder value (fall in Tobin's Q), a rise in CEO pay combined with a fall in their share-based incentives, and also a rise in outside board member fees, due to weakened board monitoring. We estimate the destruction of shareholder value at about AUS $85 billion (5.1% fall per firm) over the period 2002-2012, with a $17.8 million (2.2% per CEO) rise in CEO pay and another $2.1 million (1.1%) rise in individual director fees.

In order to understand why the ASX CGC recommendations have had such a sizeable negative impact it is important to examine the differences across each of the director classes. In 2002 the average "Incentivised Gray" director owned about 13% of the total shareholding, and by 2009 this had gone up to 19% prior to falling back substantially to 12% by 2012. The average "Regular Gray" director in 2002 owned only 0.36%, subsequently rising slightly to 0.374% by 2012. The average

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[5]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 groups…that avoids government imposing detailed corporate governance rules." (Andrew White in *The Australian*, 28/03/2014). Delegates receive advice from their constituents but the Council does not carry out any research of its own.

CEO in 2002 owned 5.1% of stock outstanding, falling to 2.7% by 2012. The average "Independent" director owned only 0.18% in 2002, falling even more to 0.125% in 2012. Thus by 2012, Regular Gray Directors had three times the incentives of "Independent Directors", CEOs 22 times higher than Independents (28 times higher in 2002), and Incentivised Gray directors, 94 times higher (105 times in 2009).[6] "Independent" directors that are typically free to pursue their own self-interest unburdened by concerns for management or especially substantial shareholders, have little reason to monitor, apart from possible reputational concerns or pure public spiritedness, as their personal wealth is largely unaffected if the stock under-performs.[7]

In contrast to the ASX rules, the New York Stock Exchange (NYSE) and NASDAQ exchanges take a contrary position to the ASX in recognizing that governance is only effective if there is incentive alignment between directors and shareholders. 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." Thus neither exchange sets an upper limit on share ownership, or lack of association with a significant shareholder, as a requirement for "independence". 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, but exempts smaller companies from the requirement of a majority of independent directors, requiring only two such directors.[8] Moreover, the board can determine that a director is "independent" even if one or more of the checklist of factors for consideration are violated, so long as an explanation is given under the "if not, why not"

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[6] See Figure 2 below.

[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.

[8] The Cadbury Report (1992, para 4.12) which is the forerunner of 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". Of relevance, no mention is made of significant shareholders.

provisions. In Australia, companies such as Network 10 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 with 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 board's audit committee to be made up entirely of independent directors since December 1999. Following a number of spectacular bankruptcies, the Cadbury Report (1992) and Smith Report (2003) 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 firm's 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.

Regulators seemed to take the view that the case for independence was self-evident and thus did not require compelling empirical evidence that in any case was 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 company's 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[9], as have 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).

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.[10] 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.

Independent directors also by definition have either no prior experience with the firm, or at least no recent experience. Moreover, many are professional directors with no specific knowledge or background in the industry and their part-time nature means that acquisition of such information is

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[9]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.

[10]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.

difficult and is never likely to be comparable to that of full-time executives.[11] 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 firm's 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.[12]

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 monitors (e.g., Jensen (1993), Adams and Ferriera (2007), and Harris and Raviv (2008)). This is especially so 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. 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.

In 2003 the ASX CGC took, in our view, a more commendable position than did the United States regulatory counterparts in one respect only. The CGC required all listed firms to either adopt a

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

[12] 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 company's affairs which might reasonably be expected to attract inquiry, even outside the area of the director's expertise."

majority of independent directors or opt out on an "if not, why not" basis, whereas all United States listed firms where required by the Securities and Exchange Commission (SEC) to comply. If the saving grace of rather strange 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.

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. This difference greatly compounds the problem of governance in Australia.

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 Weisbach's 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, it is difficult to separate out true impacts from unobservable heterogeneity.

One of the few studies of board composition based around a natural experiment that we are aware of 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. 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.

In recent years a number of legal scholars have become critical of the notion of "independent" directors and how rules have been interpreted. For example, 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." Le Mire and Gilligan (2013) are also critical of the performance of independent directors.

Despite the strong regulatory support for increased board independence, empirical studies examining the relationship between executive directors and independent directors on overall firm performance have until present produced rather mixed results and conflicting evidence. An early

study by Pfeffer (1972) suggests a negative relationship between board proportion constituted by outsiders and firm performance. More recent studies, on the other hand, do find an inverse relation between the proportion of independent directors and firm performance (Bhagat and Bolton (2008)) or no robust correlation between a greater proportion of independent directors and firm performance despite controls for endogeneity (Hermalin and Weisbach (1991) and Bhagat and Black (2001)). Fracassi and Tate (2012) provide evidence that powerful CEOs appoint external directors with strong network links to the CEO. Another explanation for the conflicting evidence with respect to the effects of independent directors on firm performance is that existing studies typically treat these directors as a homogenous group. However, individual directors almost certainly have different characteristics in relation to individual experience, professional connections and expertise (Masulis, Ruzzier, Xiao, and Zhao (2012); Knyazeva, Knyazeva and Raheja (2009); Guner, Malmendier, and Tate (2008); Kor and Fredrickson (2008); and McDonald, Westphal, and Graebner (2008)). In an effort to depart from conventional methods to treating independent directors homogenously as a proxy for board independence, Masulis, Ruzzier, Xiao and Zhao (2012) introduce heterogeneous independent director characteristics to their analysis and find evidence in support of directors with relevant industry experience to be significantly correlated with earnings restatements, cash holdings, CEO pay-for-performance sensitivity and stock market reactions to directorship appointments. Additionally, 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.

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 (Tobin's 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 Tobin's Q is because ASX-listed stocks are dominated by financial stocks (largely APRA regulated banks) and resource stocks. The exceedingly high leverage of financials means that there is only limited variation in Tobin's Q performance around, whereas Market-to-Book varies more with respect to financial firm performance.

The core data in this study is sourced from SIRCAs[13] 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. Since 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 made use of an existing governance database[14] 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 very small ones. The 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 SIRCA's 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 data set population covers corporate board and executive variables for 1,414 distinct firms and 11,965 firm-year observations and for top-200 firms, 459 distinct firms constituting 3,784 firm-years. Our firm and

[13]Securities Industry Research Centre of Asia-Pacific located in Sydney.
[14] We wish to thank Peter Pham, Jo-Ann Suchard, and Jason Zein for generously making available access to this data.

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 Aspect Huntley database.[15] 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.

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. The average board size is close to seven members, the overall proportion of independent directors is approximately 54%, the proportion of executives is 25%, and the proportion of "Regular Gray" directors who do not meet the CGC management independence criterion is 11%, with the remaining "Incentivized Gray" directors making up 8.4%. On average, CEOs are paid $1.8 million and average director fees are $90,500. Table 2 indicates a negative association between Tobin's Q and CEO Total Compensation, Director Fees, board size, and leverage, while performance is increasing in both the proportion of Regular Grays and Incentivised Grays, as well as firm size, the CAPEX ratio, Cash ratio, and Idiosyncratic Risk. Both CEO Total Compensation and Director fees 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. Larger boards and the presence of more independent board membership (smaller proportion of Gray Directors) are associated with lower idiosyncratic risk.

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

Figure 1 indicates how the ASX CGC recommendations and compulsory APRA requirements have led to a rise in the proportion of "independent" directors from 48% to about 63% from 2002 to 2012. Over the same time frame the proportion of Regular Gray directors has fallen from nearly 14% to just over 9% and the proportion of Incentivized Gray directors from just under 10% to below 8% as "independent" directors have supplanted these two director categories. Figure 2 shows that the average shareholding of Incentivized Gray directors dominates all shareholding and incentives over the entire period. This average is mostly between 12 and 14% but rises to 19% in 2009 prior to declining back to 12% by the year 2012. The average CEO shareholdings at close to 6% mirror those of all Gray directors until 2007 when both represent 4% each but subsequently CEO shareholdings decline to about 2.5% by 2012 while average Gray shareholdings remain in the 5 to 6% range. The average shareholdings of both independent and Regular Gray directors are both exceedingly low but by 2012 the Regular Gray shareholdings are three times higher than the negligible independent holdings.

2.2 Methodology

The methodology employed in this paper is both simple while at the same time we believe, rigorous. Either the lagged proportion of Regular or Incentivized Gray directors or the lagged combined shareholdings (incentives) of all the Incentivized Gray directors explain various logged proxies for firm performance and board monitoring after controlling for lagged board size and both firm and year fixed effects. We pick up dynamic effects by examining lag structures over a number of years and by the inclusion of the lagged dependent variable. In addition, three logged and lagged ratios for

leverage, CAPEX, and Cash are included and an additional logged and lagged variable, idiosyncratic risk, is included in the CEO pay and incentive regressions and director fee regressions. The inclusion of firm and 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. Since we match each firm exclusively against itself, we control for all observable and unobservable firm characteristics. Since we include year fixed effects, 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 has no influence on the outcome.

An important issue in any study of board composition is to recognize that, even though firms are largely, but not necessarily entirely, responding to the recommendation by the CGC and APRA requirement by reducing the proportion of Gray directors in order to accommodate a higher proportion of "Independent" directors, other factors may have prompted firms to make these changes as well. For example, many firms increase the proportion of "Independent" directors far 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.

3. RESULTS

3.1 Propensity to Lower the Proportion of Gray Directors

Table 4 displays our findings with respect to the propensity to lower the proportion of Gray directors based on Probit regression analysis. In recognition of inevitable lags in the system and responses that are not immediate, we lag all variables of interest by one year and we 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. Perhaps not surprisingly we find that firms with a high proportion of Regular Gray directors are more likely to reduce the overall proportion of Grays and this is highly statistically significant. However, the proportion of Incentivized Gray directors does not play a significant role and, in fact, the higher is the average incentive of this group on the board the less likely the firm is to shed Gray directors. This finding suggests that Incentivized Grays are influential on Boards and resist urgings to hire more Independents. Figure 2, showing a rise in the average shareholdings of Incentivized Grays over the course of the period, suggests that the least incentivized of this group leave first.

The CEO seems to play a potentially surprising role in ensuring the departure of Gray directors. The more he is incentivized and the higher is the logarithm of his total compensation the more likely are Gray directors to depart. These findings suggest that already more powerful, highly paid CEOs owning significant shareholdings succeed in ousting more knowledgeable and incentivized directors. One might think that they would anticipate losses on their substantial shareholdings following the resulting performance decline but perhaps the expectation of higher pay and the consumption of more perks more than compensates. The logarithm of market capitalization is both positive and significant, suggesting that larger firms are more likely to displace Gray directors who are more likely to act as effective monitors. This could be because, not only are large firms more in the public eye and thus more beholden to CGC regulation, but also larger firms generate more quasi-rents for shareholders and thus present a more tempting prize for some managerial teams to gain a larger share. The final propensity score is lagged firm performance, as captured by the logarithm of Tobin's Q, and it has no statistically significant effect on the propensity of the firm to discard Gray directors.

This means that it is highly unlikely that our findings are driven by endogeneity of board composition and "reverse causality" that might be the case if poorly performing firms chose to become "treated" by discarding effective Gray monitors. Finally, we note that the R-Squared of the regression at 3.5% is low, suggesting that "treatment", in the form of displacing Gray directors by "Independents", is largely random. Once again, this suggests that our findings are unlikely to be subject to endogeneity concerns.

3.2 Tobin's Q Performance

Table 4 and Figure 3 summarize our main firm performance results with the logarithm of Tobin's Q (market to book value of all assets) as our dependent variable. Short-run impact in Column (1) shows that it is largely the falling lagged proportion of Regular Gray directors on the board that is responsible for the performance decline. There is also a very significant coefficient for the lagged dependent variable indicating that the distributed lag model shows only partial adjustment after one year. The long-run impact in Column (1) shows that in the longer run the impact is much higher. Similarly, in the short- and long-run impacts making up Column (2), the decline in the total Incentivized Gray director shareholdings also significantly reduces performance while Column (3) shows that the disappearance of Regular Gray directors is also responsible for a decline in the market-to-book ratio. Note that the R-Squared values are exceedingly high and around 73% in magnitude. We report Robust t-values with industry clustering.

<<Insert Table 4 and Figure 3 about here>>

3.3 CEO Total Compensation and Pay Sensitivity Performance

Table 5 and Figure 4 are very similar in structure to Table 4 and Figure 3 except that the dependent variable is now the logarithm of Total Compensation. The one-year and two-year lag results and the long-term results show that it is the decline in the proportion of Incentivized Gray

directors that is raising CEO total compensation while the final column shows that it is only after a lag of three years that the decline in the total shareholding of Incentivized Gray directors significantly raises CEO pay. Unsurprisingly, Total Compensation is also significantly increasing in both firm size and idiosyncratic risk. Table 6 shows that one must wait four years following the decline in the proportion of Regular Gray directors before the CEO disposes of a significant proportion of his shareholdings that provide pay for performance sensitivity. This decline is consistent with the halving in CEO pay-for-performance sensitivity over the period, 2002-2012, seen in the summary statistics (Figure 2). The R-Squared values remain high and are in the range, 75% to 81%. Once again, Robust *t*-values with industry-based clustering have been utilized.

<<Insert Tables 5 and 6 and Figure 4 about here>>

3.3 Outside Director Fees

In Table 7 we examine director fees at the level of the individual outside director after controlling for director characteristics. Figure 5 displays these findings based on individual director fees. The regression coefficients indicate that it is the decline in the proportion of Incentivized Gray directors after one-year, two-years, and three-year lags that produces a significant both short-and long-term rises in director fees. Fees also rise substantially with board size, firm size, and leverage suggesting that the departure of effective Gray monitors leads an accommodation between management and directors such that both groups gain from weaker monitoring. Fees do not differ significantly between director types, with the exception that the Chair paid significantly more. Moreover, the Chair is predominantly an independent director but if an Incentivized Gray then the Chairman's premium is significantly lower. The R-Squared values remain high at about 75% and Robust *t*-values with firm-based clustering have been utilized.

<<Insert Table 7 and Figure 5 about here>>

3.4 Overall Impact of ASX CGC and APRA Regulations

Table 8 shows how the impact of changes in board structure has been to reduce shareholder value by $63 billion (3.74%) due to the decreased proportion of Regular Grays, and an additional $23 billion (1.36%) due to decreased shareholdings by Incentivized Gray directors. Table 9 shows that CEO pay has increased in aggregate by $17.8 million (2.2%) and Table 10 shows that director fees have risen by $2.1 million (1.1%), due to a decreasing proportion of incentivized Gray directors.

<<Insert Tables 8, 9, and 10 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 469 stocks that were at one point in the top-200 stocks listed on the ASX we investigate close on 700 instances in which either a "Regular Gray" or "Incentivized Gray" director was replaced by an "independent" director. These changes perturb firms, and hence firm performance, by altering the ratio of the two types of Gray directors to total board size and by lowering the total "Incentivized Gray" shareholding for the firm. We compare the performance of these perturbed firms with their prior state by imposing firm fixed-effects and each year with every other year by also introducing year fixed-effects so that our results are unaffected by stock price movements shared in common by all large stocks. We estimate these losses conservatively at about AUS $85 billion (5.1%) over the period 2002-2012 in the form of destruction of shareholder value,

with an aggregate increase in CEO pay of $17.8 million (2.2%) and a rise in director fees of $2.1 million (1.1%).

The CGC/APRA rules do not seem to be based on any quantitative research into the likely effects of the rules or what these rules have actually achieved or shareholder wealth actually destroyed. Rather delegates from various groups such as the Australian Institute of Company Directors and the Australian Shareholders Association seek views and opinions from their members and vote on them at ASX CGC meetings. Our findings suggest that canvassing of opinions by regulators and then implementing them as either rules, laws or simply advice is fraught with difficulty and may result in outcomes that not all group members would wish to subscribe to.

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Table 1: Descriptive Statistics

Variable	Mean	Standard Deviation
Tobin's Q	2.3415	14.5321
CEO Total Compensation ($)	1,778,959	2,785,696
Directors Fees ($)	90,487	196,555
Board Size	6.6826	2.2575
Proportion IDs	0.5420	0.2440
Proportion EDs	0.2524	0.1644
Proportion NEDs	0.7476	0.1644
Proportion Incentivised Grays	0.0835	0.1513
Proportion Regular Grays	0.1134	0.1611
Total Assets ($m)	9,779	54,835
Market Cap ($m)	3,650	18,876
Total Liabilities ($m)	8,079	51,169
Leverage Ratio	0.6449	10.8686
CAPEX Ratio	0.0915	0.1642
Cash Ratio	0.1404	0.1846
Idiosyncratic Risk	0.4262	0.2900

Table 2: Partial Correlation Matrix

	T's Q	CEO TC	Avg. DF	B Size	Prop I	Prop NI	Mcap	Lev	CAPEX	Cash
Ln Tobin's Q	1									
Ln CEO Total Compensation	-0.043	1								
Ln Average Directors Fees	-0.158	0.201	1							
Lag 1 Board Size	-0.179	0.174	-0.084	1						
Lag1 Prop. Incentivised Grays	0.044	-0.041	-0.101	0.097	1					
Lag1 Prop. Regular Grays	0.066	-0.058	-0.140	0.159	-0.147	1				
Ln Lag1 Market Cap	0.205	0.415	0.358	0.286	-0.091	0.001	1			
Ln Lag1 Leverage	-0.019	0.088	0.127	0.145	-0.044	0.020	-0.073	1		
Ln Lag1 CAPEX Ratio	0.126	0.039	0.021	-0.023	-0.065	-0.014	-0.053	0.023	1	
Ln Lag1 Cash Ratio	0.289	0.045	0.108	-0.029	-0.058	-0.023	-0.082	-0.295	0.040	1
Ln Lag1 Idiosyncratic Risk	0.041	0.079	0.036	-0.063	-0.039	0.106	-0.464	-0.132	0.087	0.122

Table 3: Likelihood of a Decreasing Proportion of Gray Directors

This table illustrates the regression results of the probit regression indicating the likelihood of decreasing the proportion of Gray Directors. The regression only includes firms with a lagged proportion of gray directors that is non-zero making up a total of 2,138 firm-years and of these observations there are 1,103 instances of a reduction in the proportion of Gray Directors. Absolute t-values are shown in brackets below each coefficient. The superscripts ***, **, * indicate 1%, 5%, and 10% statistical signigicance levels, respectively.

	Likelihood of a Decreasing Proportion of Gray Directors (1)
Lag1 Proportion Regular Gray Directors	1.3942***
	(8.01)
Lag1 Incentivised Gray Directors Average Shareholdings	-0.5933***
	(2.78)
Lag1 CEO Shareholdings	0.8613***
	(3.09)
Lag1 Ln(CEO TCIL)	0.0143**
	(2.19)
Lag1 Ln(Market Capitalization)	0.0414***
	(2.59)
Lag1 Ln(Tobin's Q)	-0.0093
	(0.22)
R-squared	0.0355
Observations	2,138

Table 4: Fixed Effects Regression Analysis of the Impact of Decreasing Proportion Incentivised and Regular Gray Directors (1) and (3) and of Total Shareholdings of Incentivised Gray Directors (2) on Tobin's Q and Market-to-Book Firm Performance

This table illustrates the regression results of the Firm and Year Fixed Effects with a Lagged Dependent Variable approach applied to 459 top-200 firms, with observations between the financial year-ends of 2001 and 2012, utilizing Tobin's Q and Market-to-Book as the performance criteria. The long-term impact is calculated by dividing the coefficient of independent variable by unity minus the lagged dependent variable's coefficient, when on a minimum 5% significance level. Absolute t-values are shown in brackets below each coefficient. The superscripts ***, **, * illustrate 1%, 5% and 10% statistical signigicance, respectively.

| | Ln(Tobin's Q) | | | | Ln(Market-to-Book |
| | (1) | | (2) | | (3) |
	Short-term Impact	Long-term Impact	Short-term Impact	Long-term Impact	Short-term Impact
Variables of Interest					
Lag1 Incentivised Gray Directors Shareholdings			0.1276**	0.2537**	
			(2.02)		
Lag1 Proportion Incentivised Gray Directors	0.0739				0.0333
	(0.94)				(0.24)
Lag1 Proportion Regular Gray Directors	0.1672***	0.3313***			0.1877*
	(3.17)				(1.93)
Lag1 Board Size	-0.0015		-0.0001		0.0039
	(0.25)		(0.01)		(0.46)
Lag1 Ln(Tobin's Q)	0.4952***		0.4970***		
	(16.58)		(16.59)		
Lag1 Ln(Market-to-Book)					0.4736***
					(8.40)
Control Variables					
Lag1 Ln(Leverage)	0.0287**		0.0306**		0.0281
	(2.06)		(2.12)		(0.80)
Lag1 Ln(Capex Ratio)	0.0080		0.0069		0.0251***
	(0.67)		(0.55)		(2.94)
Lag1 Ln(Cash Ratio)	0.0240***		0.0239***		0.0205**
	(2.58)		(2.62)		(2.08)
Lag1 Ln(Market capitalization)	-0.0523***		-0.0523***		-0.0417
	(4.15)		(4.58)		(1.33)
Year Fixed Effect	Yes		Yes		Yes
Company Fixed Effect	Yes		Yes		Yes
R-squared	0.7334		0.7334		0.7387
Observations	3,059		3,060		3,000

Table 5: Fixed Effects Regression Analysis of the Impact of Decreasing Proportion Incentivised and Regular Gray Directors (1) and of Total Shareholdings of Incentivised Gray Directors (2) on CEO Total Compensation (Including Long-Term Compensation)

This table illustrates the regression results of the Firm and Year Fixed Effects with a Lagged Dependent Variable approach applied to 459 top-200 firms, with observations between the financial year-ends of 2001 and 2012, with the Log of CEO Total Compensation as the dependent variable. The long-term impact is calculated by dividing the coefficient of independent variable by unity minus the lagged dependent variable's coefficient, when on a minimum 5% significance level. Absolute t-values are shown in brackets below each coefficient. The superscripts ***, **, * illustrate 1%, 5% and 10% statistical signigicance, respectively.

| | Ln(Total Compensation CEO) | | | |
| | (1) | | | (2) |
	1 Year	2 Years	Long-term	3 Years
Variables of Interest				
Incentivised Gray Directors Shareholdings				-0.2140***
				(2.71)
Proportion Incentivised Gray Directors	-0.0625	-0.2041		
	(0.39)	(1.53)		
Proportion Regular Gray Directors	-0.2770**	-0.2443***	-0.6081**	
	(2.32)	(2.58)		
Board Size	0.0025	0.0077		0.0127
	(0.14)	(0.98)		(0.98)
Lag1 Ln(Total Compensation CEO)	0.1479***	0.1369**		0.1128
	(2.96)	(2.48)		(1.54)
Control Variables				
Lag1 Ln(Leverage)	0.0060	-0.0158		-0.0123
	(0.25)	(0.68)		(0.42)
Lag1 Ln(Capex Ratio)	-0.0260**	-0.0242		-0.0352*
	(2.08)	(1.46)		(1.83)
Lag1 Ln(Cash Ratio)	0.0059	0.0099		0.0171
	(0.53)	(0.68)		(0.90)
Lag1 Ln(Market capitalization)	0.2114***	0.2053***		0.2218***
	(13.05)	(9.23)		(10.86)
Lag1 Ln(Idiosyncratic Risk)	0.4087**	0.3965***		0.4735***
	(2.24)	(3.02)		(3.08)
Year Fixed Effect	Yes	Yes		Yes
Company Fixed Effect	Yes	Yes		Yes
R-squared	0.7680	0.7592		0.7516
Observations	2,741	2,426		2,106

Table 6: Fixed Effects Regression Analysis of the Impact of Decreasing Proportion Incentivised and Regular Gray Directors on CEO Pay for Performance Sensitivity (Shareholdings) with a Four-Year Lag

This table illustrates the regression results of the Firm and Year Fixed Effects with a Lagged Dependent Variable approach applied to 459 top-200 firms, with observations between the financial year-ends of 2001 and 2012, with the CEO Shareholdings as the dependent variable. The lagged dependent variable is not significant, and therefore no long-term impact is reported. Absolute t-values are shown in brackets below each coefficient. The superscripts ***, **, * illustrate 1%, 5% and 10% statistical signigicance, respectively.

	CEO Shareholdings
	(1)
	4 Years
Variables of Interest	
Proportion Incentivised Gray Directors	0.1247
	(0.76)
Proportion Regular Gray Directors	0.0312***
	(2.93)
Board Size	-0.0005
	(0.75)
Lag1 CEO Shareholdings	0.2721
	(1.62)
Control Variables	
Lag1 Ln(Leverage)	-0.0008
	(0.72)
Lag1 Ln(Capex Ratio)	-0.0003
	(0.21)
Lag1 Ln(Cash Ratio)	-0.0013
	(0.87)
Lag1 Ln(Market capitalization)	-0.0022
	(1.55)
Lag1 Ln(Idiosyncratic Risk)	-0.0090
	(0.63)
Year Fixed Effect	Yes
Company Fixed Effect	Yes
R-squared	0.8131
Observations	1,934

Table 7: Fixed Effects Regression Analysis of the Impact of Decreasing Proportion Incentivised and Regular Gray Directors on Individual Directors Fees

This table illustrates the regression results of the Firm and Year Fixed Effects with a Lagged Dependent Variable approach applied to 459 top-200 firms, with observations between the financial year-ends of 2001 and 2012, with the Log of Directors Fees as the dependent variable. The long-term impact is calculated by dividing the coefficient of independent variable by unity minus the lagged dependent variable's coefficient, when an a minimum 5% significance level. Absolute t-values are shown in brackets below each coefficient. The superscripts ***, **, * illustrate 1%, 5% and 10% statistical signigicance, respectively.

	Ln(Directors Fees)			
	(1)			
	1 Year	2 Years	3 Years	Long-term
Variables of Interest				
Proportion Incentivised Gray Directors	-0.2026***	-0.1468**	-0.1312*	-0.6196**
	(2.70)	(2.05)	(1.77)	
Proportion Regular Gray Directors	-0.0559	0.0024	-0.0441	
	(1.03)	(0.04)	(0.78)	
Board Size	0.0176***	-0.0024	-0.0027	0.0305***
	(3.39)	(0.42)	(0.44)	
Lag1 Ln(Director' Fees)	0.4245***	0.4513***	0.4410***	
	(13.50)	(12.79)	(11.48)	
Control Variables				
Lag1 Ln(Leverage)	0.0436***	0.0439***	0.0382***	
	(2.99)	(2.97)	(2.34)	
Lag1 Ln(Capex Ratio)	-0.0067	-0.0059	-0.0097	
	(0.80)	(0.63)	(0.84)	
Lag1 Ln(Cash Ratio)	0.0109	0.0080	0.0060	
	(1.21)	(0.84)	(0.54)	
Lag1 Ln(Market Capitalization)	0.0620***	0.0664***	0.0630***	
	(4.77)	(4.70)	(4.01)	
Lag1 Ln(Idiosyncratic Risk)	0.0147	0.0435	0.0635	
	(0.20)	(0.53)	(0.69)	
Incentivised Gray Director Dummy	-0.0106	-0.0255	-0.0244	
	(0.58)	(1.37)	(1.17)	
Chairman Dummy	0.4224***	0.4059***	0.4201***	
	(19.21)	(17.43)	(16.62)	
Inc. Gray Director * Chairman Dummy	-0.0963**	-0.0844**	-0.0733*	
	(2.14)	(2.02)	(1.95)	
Year Fixed Effect	Yes	Yes	Yes	
Company Fixed Effect	Yes	Yes	Yes	
R-squared	0.7545	0.7507	0.7426	
Observations	12,987	11,649	10,232	

Table 8: Impact of Governance Recommendations on Tobin's Q

This table illustrates the long-term impact of the decreasing proportion of regular gray directors and decreasing shareholdings of incentivised gray directors on Tobin's Q and Market Capitalization. Total Impact is the $ value (in million) of the increase of Market Capitalization for the 459 firms, estimated by using average values of the components of Tobin's Q and average decrease of the proportion of Regular Gray Directors and shareholdings of Incentivised Gray Girectors. The % Impact illustrates the % increase of Tobin's Q and Market Capitalization, respectively.

Tobin's Q	Decreasing Proportion of Regular Gray Directors	Decreasing Shareholdings of Incentivised Gray Directors
Long term coefficient	0.3313	0.2537
Decrease in absolute values 2002-2012	-0.0354	-0.0167
% Impact on Tobin's Q= exp(long term * decrease) - 1	-1.16%	-0.42%
Average Total Assets ($m)	9,779	9,779
Average Total Liabilities ($m)	8,079	8,079
Average Market cap ($m)	3,650	3,650
Tobin's Q (calculated by using averages)	1.1993	1.1993
Updated Tobin's Q = (% Impact + 1) * Tobin's Q	1.1854	1.1943
$m Impact on Market Cap/Firm (Holding assets and liabilities constant)	-$137	-$50
% Impact on Market Cap	-3.74%	-1.36%
Total Impact = $m Impact on Market Cap/Firm * number of Firms	-$62,702	-$22,774
Sum ($Billion)	-$85.48	

Table 9: Impact on the Logarithm of CEO Total Compensation (Including Long-Term Compensation)

This table illustrates the long-term impact of the decreasing proportion of Regular Gray Directors on CEO Total Compensation. Total Impact is the $ value of the increase in CEO TCIL payments for the 459 firms, estimated by using the average decline of the proportion of Regular Gray Directors and average CEO TCIL. The % Impact illustrates the % increase in CEO TCIL as a result of the decreasing proportion of Regular Gray Directors.

CEO TCIL	Decreasing Proportion of Regular Gray Directors
Long term coefficient	-0.6081
Decrease in absolute values 2002-2012	-0.0354
% Impact = exp(long term * decrease) - 1	2.17%
Average CEO TCIL	$1,778,959
$ Impact = % Impact * average CEO TCIL	$38,673
Total Impact = $ Impact * number of firms (459)	$17,750,912

Table 10: Impact of Governance Recommendations on the Fees of Individual Outside-Directors

Directors Fees	Decreasing proportion of Incentivised Gray Directors
This table illustrates the long-term impact of the decreasing proportion of Incentivised Gray Directors on Directors Fees. Total Impact is the $ value of the increase of Directors Fees payments for the 459 firms, estimated by using average decline of proportion Incentivised Gray Directors and average Directors Fees. The % Impact illustrates the % increase in Directors Fees as a result of the decreasing proportion of Incentivised Gray Directors.	
Long term coefficient	-0.6196
Decrease in absolute values 2002-2012	-0.0162
% Impact = exp(long term * decrease) - 1	1.01%
Average Directors Fees	$90,487
$ Impact = % Impact * average Directors Fees	$911
Impact per firm = Average number of NEDs per firm * $ Impact	$4,646
Total Impact = Impact per firm * number of firms	$2,132,588

Figure 1: Proportion Independent Directors and Impact on "Gray" Directors

A "Gray" Director is a Non-Executive Non-Independent Director.

The "Gray" Director is considered to be incentivised if he/she is a substantial shareholder, or is associated with a substantial shareholder.
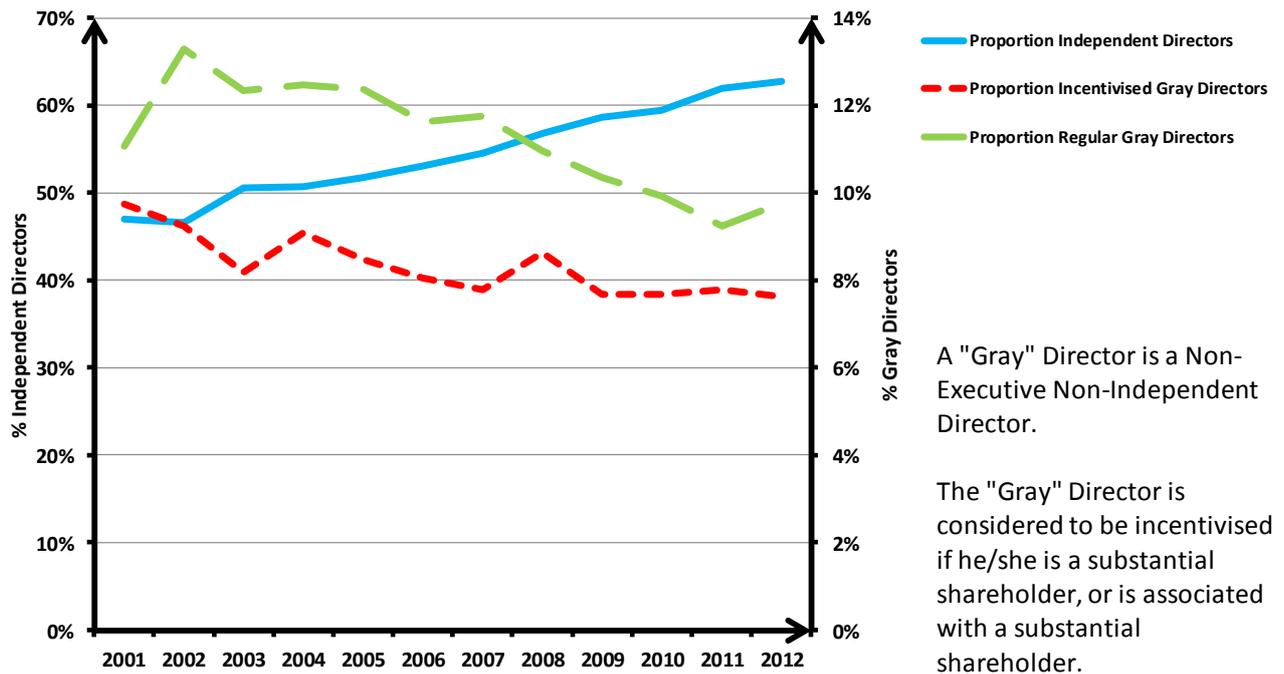
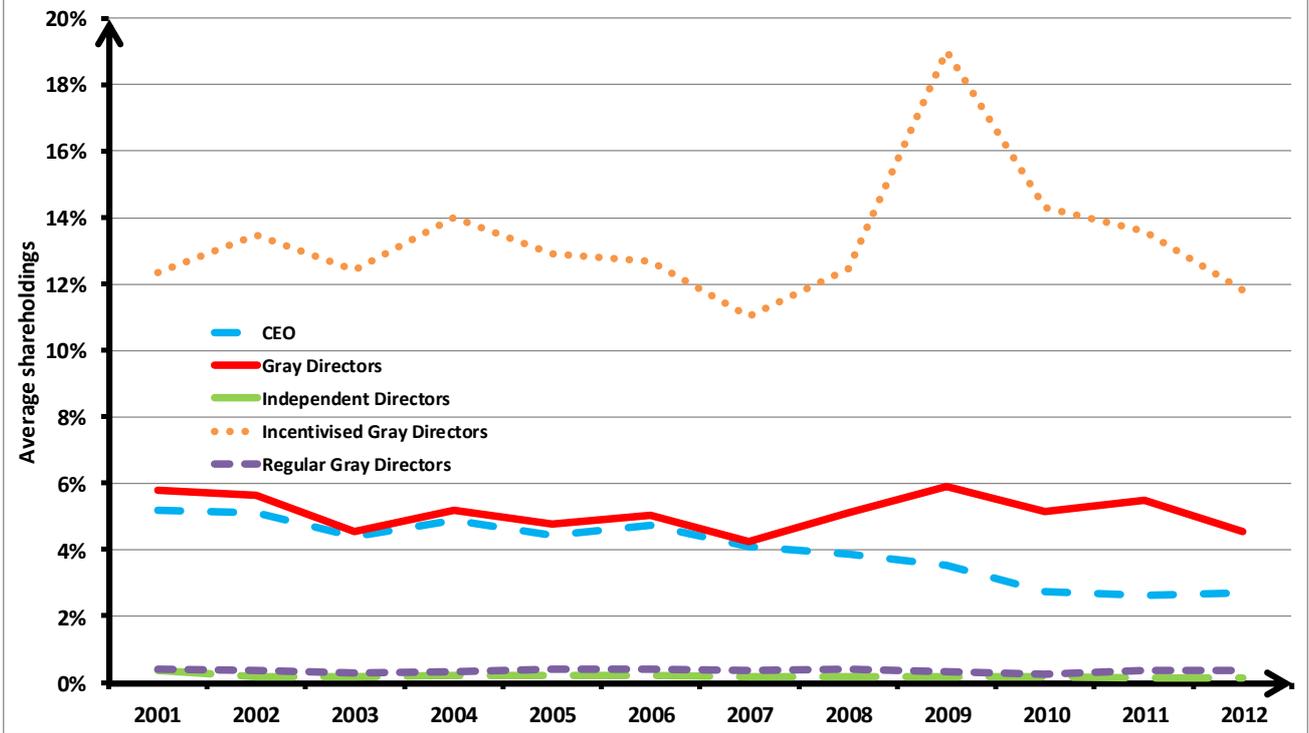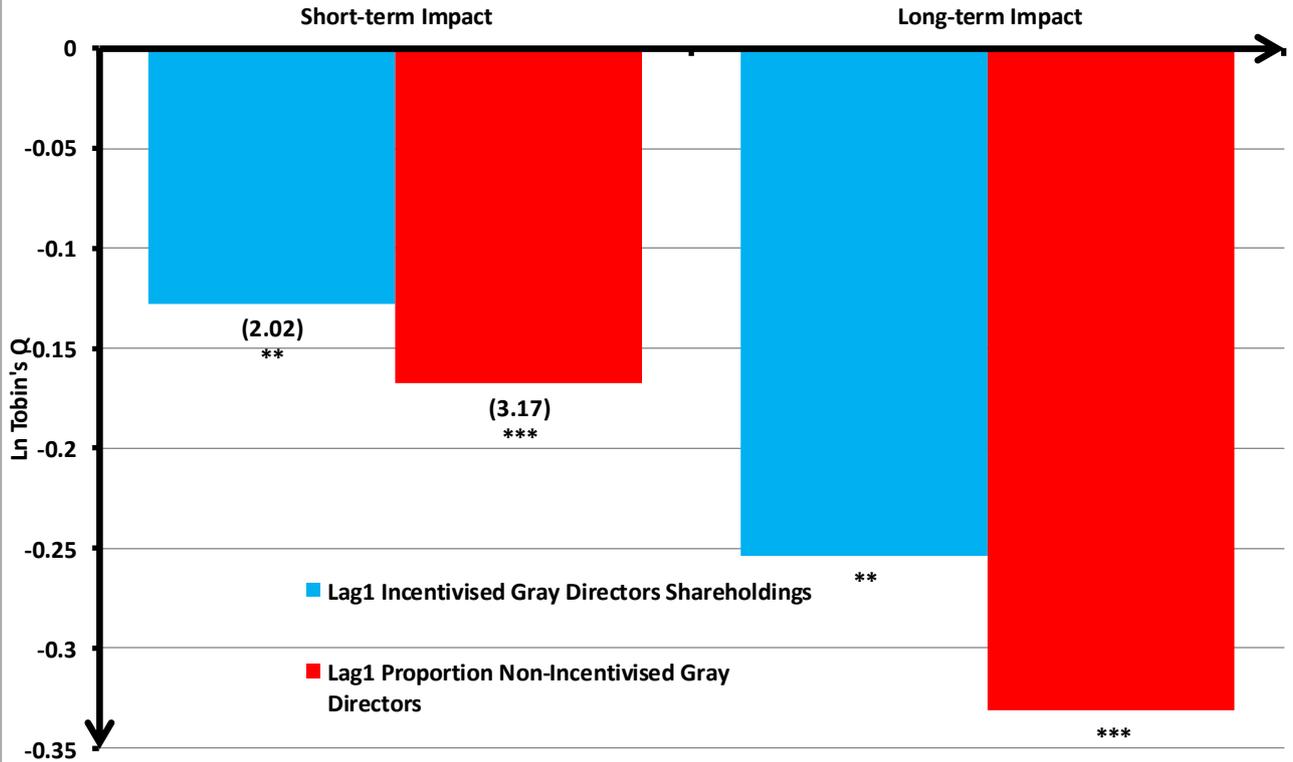Figure 2: Average Shareholding per Director -Type per Firm

Figure 3: Tobin's Q - Impact of Decreasing Proportion of "Gray" Directors

Figure 4: CEO Total Compensation - Impact of Decreasing Proportion of "Gray" Directors

Figure 5: Director Fees - Impact of Decreasing Proportion of "Gray" Directors