

EXECUTIVES' REMUNERATION AND COMPANY PERFORMANCE: AN EVALUATION

*Mohammad Istiaq Azim**, *Joyce Chua Ai Mei***, *Samina Rahman****

Abstract

Executive pay became a much discussed issue during the recent global financial crisis. Substantial research has been done in the United States and United Kingdom, while research in Australia is still limited, especially in terms of using the data for the financial crisis. This paper will investigate the relationship between Australian executives' remuneration and their companies' performance during the global financial crisis.

Two approaches were used to examine the relationship: firstly, an investigation of the pay-for-performance relationship that existed during the global financial crisis; and secondly, checking the robustness test by using one year before-and-after data. The sample is taken from the Top 200 companies from the Australian Stock Exchange (ASX) list for 2007 and 2008. In order to achieve a better understanding of this relationship, a conceptual model has been developed. Results show that Australia's business reward system is quite effective because executives' remuneration were reduced by their respective companies when they underperformed during this particular crisis.

Overall, this study concludes that there is a positive and significant relationship between executives' remuneration and company performance during the global financial crisis, with higher sensitivity to market-based performance measures than accounting-based performance measures.

Keywords: CEO, Compensation, Company Performance, Corporate Governance

**Correspondence Author, Accounting and Finance, Faculty of Business and Enterprise, Swinburne University of Technology, Hawthorn VIC 3122, Australia*

Internal Mail Number: H23

Tel: +61 3 9214 4500

Fax: +61 3 9819 2117

Email: mazim@swin.edu.au

***Accounting and Finance, Faculty of Business and Enterprise, Swinburne University of Technology, Hawthorn VIC 3122, Australia*

****Accounting and Finance, Faculty of Business and Enterprise, Swinburne University of Technology, Hawthorn VIC 3122, Australia*

1. Introduction

During the 2008-09 financial year the Productivity Commission (2009) found that the level of executives' remuneration for the top 20 CEOs was approximately 27 times larger than that for CEOs of the smallest listed companies. This reveals the potential for paying excessive amounts to executives of large Australian companies and may lead shareholders to lose confidence in companies' management.

The current regulatory framework's emphasis is on aligning shareholders' interests with executives' remuneration and incorporates accountability and transparency practices. Substantial research has been done in the United States and United Kingdom (Murphy 1985; Jensen & Murphy 1990; Gregg, Machin & Szymanski 1993; Main, Bruce & Buck 1996; Ozkan 2007). However, Australia is an important country to analyze because one can then determine whether its company executives are paid too much while shareholders receive reduced or no dividends when the company performs poorly.

The recent global financial crisis made structuring of remuneration packages more important than ever. Well-designed remuneration packages are always wanted – this would make it interesting to discover

whether company performance is reflected in company executives' remuneration during the global financial crisis. This research will make two contributions to the literature. Firstly, it will assess the effectiveness of the remuneration package for the Top 200 companies. Remuneration of CEOs and senior managers of large companies in Australia has increased considerably regardless of their performance (Fels, 2010). Both Australian public and policy makers, including the Australian Stock Exchange (ASX), are aware of this issue by having introduced regulations and recommendations on executives' remuneration (Brown & Samson 2003; Hill & Myablon 2002; Woldring 1995).

Secondly, investigating this relationship in different periods of time is necessary because varied economic conditions have an impact on the rationale of remunerating executives. For example, in a difficult business environment, hiring the right person may be more important than retaining existing executives. Companies may reward executives more if that person can resolve a problem and minimize losses. The Productivity Commission (2009) points out that a previous director remuneration strategy may not be suitable in a situation when capable executives are needed. In the worst case scenario, applying inappropriate remuneration practices may compromise a company's business performance.

These factors lead to the overarching research question: what was the relationship between executives' remuneration and company performance during the global financial crisis? In order to fully answer this question, two major objectives have been identified:

1. *To examine the extent of the relationship between executives' remuneration and company performance in the recent crisis*, i.e. to discover if there is any significant relationship between each remuneration component (salaries, bonuses, stock options and other types of remuneration) and company performance measures in 2007 and 2008.
2. *To understand the pay-for-performance relationship before and after the global financial crisis*, i.e. to compare the 2007 and 2008 pay-for-performance relationship with 2006 (before the financial crisis) and 2009 (after the financial crisis).

The next section of this paper will review the literature followed by developing a conceptual framework. Section 3 will discuss research design, data collection, and resources. Descriptive analysis, findings and results will be discussed in section 4. Finally the concluding section will include a summary and limitations of the research.

2. Literature Review

Berle and Means (1932) have pointed out that a company's management will not pay much attention to utilizing its assets efficiently, acting as if they are the shareholders of a company. The usual scenario is that shareholders contribute funds to the company and assume managers will maximize the value of their share price and declare dividends. Conversely, managers may choose to act in a way that will benefit their own private interests while ignoring shareholders' value maximization. The agency problem will influence management's motivation to invest in projects offering short-term rather than long-term returns (Murphy & Zimmerman 1993).

One solution to encourage executives to act in the interests of shareholders is to rely on incentive pay, particularly if monitoring mechanisms are ineffective due to information asymmetries (Jensen & Murphy 1990; Bloom & Mikovich 1998). Furthermore, the costs of perfect contracting and monitoring are usually high most of the time. Compensation from incentive schemes depends on the possible actions which executives may undertake (Murphy 1999). This solution concurs with Doucouliagos, Haman and Askary's (2007) recommended strategies, whereby remuneration to company executive executives and rewarding their proven effectiveness are appropriate in aligning management's interest with those of the shareholders. The rationale is: remuneration would motivate managers to behave better, particularly during times when they have to make decisions affecting shareholders' wealth.

However, Yermack (1997), Bertrand and Mullainathan (2001), and Bebchuk and Fried (2003) drew attention to the fact that remuneration to managers is not only a solution to the agency problem but is also an agency problem itself if the remuneration systems are not designed properly. Some conditions have to be met in order to provide an effective pay-for-performance system, yet they are difficult to achieve. Lawler (1990) and Milkovich and Wigdor (1991) pointed out that: firstly, the level of remunerations

should be large enough to motivate managers. Secondly, the pay-for-performance relationship should present a clear link. Thirdly, remuneration should be awarded to managers in line with their contributions to the company.

Incentive to Executives

Coulton and Taylor (2002) analyzed executives' compensation specifically for the year 2000. Their study on Australian remuneration practices is very detailed, in that: firstly, every company in their sample awarded salaries to executives and this considered being the largest proportion (65 percent); secondly, 51 percent of companies awarded cash bonuses to their CEOs; and thirdly, not every company awarded options to executives. In comparing the findings of Chalmers et al. (2006) and Coulton and Taylor (2002), the proportion of cash bonuses and share options used to remunerate executives seemed to increase in that two-year period, while a decrease in the level of salary remunerated was noted.

Erkens, Hung and Matos (2009) discovered that the recent global financial crisis deeply affected companies that offered higher levels of cash bonuses rather than equity-based compensation. They suffered great losses and had to bear more risk before the crisis as a result of the large cash outflow. Sharfman (2009) highlighted the impact of remunerating executives with large bonuses during this crisis. Orlizky and Swanson (2010) pointed out that even though shareholders are suffering from losses, executives still received large remuneration in terms of options.

Most studies have focused on salaries, bonuses and options. Only a few studies (Stapledon 2004; Stapledon 2005; Capezio, Shields & O'Donnell 2007; Windsor & Cybinski 2009) have examined other types of remuneration. These include superannuation, director's fees, non-cash benefit, allowances, motor vehicle, committee fees, termination payment, long-term incentive pay, consulting fee and accrued entitlements. However, superannuation and termination payments were the main considerations in previously published research. Stapledon (2005) examined companies listed on the ASX over a six year period from 1999 to 2004 and found that termination payments were paid excessively, the average being \$3.65 million.

The Australian government has stipulated that companies need to contribute at least 9% of their salary costs in superannuation. Some large companies contribute a higher percentage of superannuation, which depends on their employment contract. It is expected that superannuation will not affect the company's performance (Windsor & Cybinski 2009). However, it is still possible for executives to maximize the company's performance in the hope that their salaries will increase and therefore their superannuation is closely linked to their salaries.

Company's Performance Measures

A company's performance can be divided into two main measures: accounting-based performance and market-based performance. Accounting measures are based on variables obtained from financial statements, while market-based performance measures take the market value of the organization into consideration (Carton & Hofer 2006). Carton and Hofer (2006) further expand the classification of accounting measures into four subcategories: (i) profitability; (ii) growth; (iii) leverage, liquidity, and cash flow; and (iv) efficiency. Some contradictions emerge when trying to classify performance into those measures. For example, Murphy, Trailer and Hill (1996) classified return on investment (ROI), return on equity (ROE) and return on assets (ROA) as efficiency measures, whereas Carton and Hofer (2006) considered them as profitability measures. Similarly, Murphy, Trailer and Hill (1996) classified price to earnings ratio, earnings per share, price to book value into profitability measures, while Brealey, Myers and Marcus (2001), classified them as market measures. Different classifications may end up with different explanations and provide inadequate recommendations. As both accounting-based performance measures and market-based performance measures have their 'pros and cons', this research will use both measures in order to add credibility to the findings.

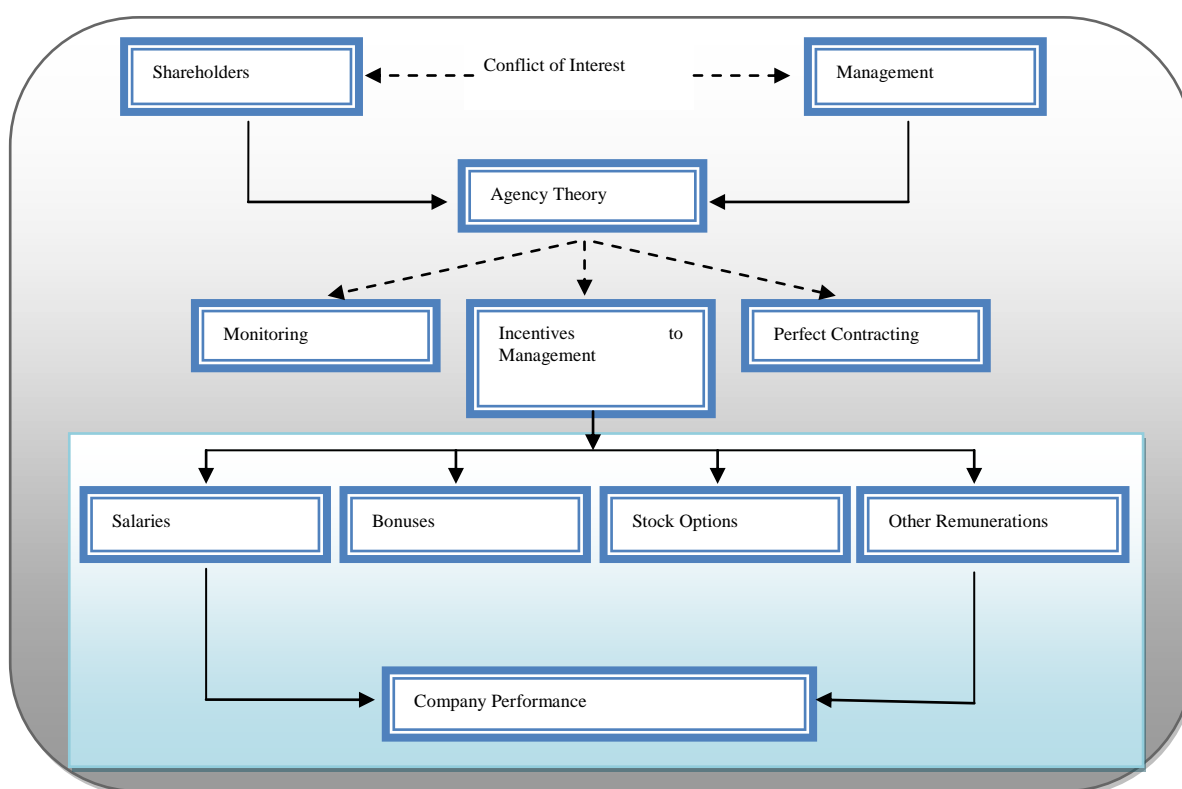
Again, most studies have focused on both accounting- and market-based performance measures such as ROA, ROE, EPS and shareholder return as their company performance measurements (Doucouliagos et al. 2007). Kato and Kubo (2006) measured the changes in ROA and shareholder return, while Firth, Lohne, Ropstad and Sjo (1996) used ROA, ROE and stock return to measure companies' performance in Norway. Conversely, some studies focus on a single performance measures, such as Lee (2009) who

focused on accounting-based performance measures (change in ROE) because market-based performance measures involve factors that are not in company executives' control. Therefore, it is difficult to measure whether executives' performance declines or improves. However, Murphy (1985), Dogan and Smyth (2002), and Ozkan (2007) focused on market-based performance measures because they measured shareholders' wealth. In this research accounting-based performance measures will include ROA, ROI and ROE, while market-based measures will include PER, dividend yield, price/book value, and EPS.

Executives' Remuneration and Company's Performance

Executives' remuneration is expected to be positively related to company performance since remuneration is one of the mechanisms used to minimize the agency problem. Figure 1 illustrates how this problem begins, possible solutions to reduce it, and the research focus (see shaded section of Figure 1).

Figure 1. Conceptual Model



A number of studies (Gibbons & Murphy 1989; Gregg, Mchin & Szymanski 1993; Firth et al. 1996; Main, Bruce & Buck 1996; Krauter and Sousa 2009; Hall & Liebman 1998; Abdullah 2006; Doucouliagos et al. 2007) have investigated the relationship between executives' remuneration and company performance. Firth et al. (1996) in their research on Norway, used share returns and accounting profitability to measure company performance and yet they discovered that the relationship between CEO remuneration and company performance was not significant. Abdullah (2006) reported that in Malaysia, executives' remuneration is not linked to return on assets. With reference to Australia, Doucouliagos et al. (2007) found that the relationship between executives' remuneration and performance in the banking/finance sector is non-existent and realized that executives' remuneration has no association with the previous year's performance. Stapledon (2004) believed that superannuation has little bearing on company performance.

Conversely, other studies, such as Gibbons and Murphy (1989), Main, Bruce and Buck (1996) and Hall and Liebman (1998) found that the pay-for-performance relationship is significant. Although Hall and Liebman (1998) noted a strong relationship between CEO compensation and company performance, salary and bonuses had a weak relationship with performance, suggesting equity-based payment may be the best remuneration package to reduce agency problems. Using evidence from the United States,

Gibbons and Murphy (1989) found that executives' remuneration and company performance are closely connected. Krauter and Sousa (2009) noted that there is a significant relationship between average salary and ROE. Main, Bruce and Buck (1996) discovered that there is significant relationship between share options for executives and company performance.

In Australia, linking remuneration arrangement to company performance with the support of director remuneration changes has increased (Productivity Commission 2009). Dogan and Smyth (2002) found that the sensitivity of the pay-for-performance relationship was higher during the Asian financial crisis in the late 1990s. The Productivity Commission (2009) found a significant decline in total remuneration for CEOs in the top 100 companies listed on the ASX in 2007 and 2008, amounting to 16 percent over the two years. This suggests that CEO remuneration in Australian companies was more likely to be linked to company performance during this financial crisis because most companies experienced waning fortunes during this period. Hence, discussion of the pay-for-performance relationship during the global financial crisis is essential because many businesses suffered huge losses. In line with the latest survey from the Productivity Commission (2009), the following hypothesis is developed:

Hypothesis development

A positive relationship is expected to exist between Australian executives' remuneration and companies' performance during the global financial crisis while controlling the external factors that will influence this relationship.

H₁: There is a significant and positive relationship between executives' salaries and company performance.

H₂: There is a significant and positive relationship between executives' bonuses and company performance.

H₃: There is a significant and positive relationship between executives' options and company performance.

H₄: There is no significant and positive relationship between executives' other remunerations and company performance.

3. Research Design

Ordinary Least Square (OLS) multiple regression is used to test the relationship between executives' remuneration and firm performance. Regression analysis is used because this research would like to verify the strength of the relationship between the dependent and independent variables. Control variable such as company size, log of total assets and market capitalization are used to standardize the company size measure and enhance the regression model:

$$Performance = a + b_1Salary + b_2Bonus + b_3Options + b_4Other\ remunerations + b_5Control\ variables$$

To add credibility to the outcomes of this research, sensitivity analysis is conducted as well. Using sensitivity analysis, the relationship between executives' remuneration and company performance before and after the crisis can be understood.

In terms of sample selection, this research is based on secondary information from Australian Stock Exchange (ASX) listed companies. Australia's Top 200 companies listed on the ASX from 2007 and 2008 are analyzed. This research investigates the Top 200 largest companies because they have the largest resources (Merhebi et al. 2006), and hold the largest market capitalization. Large corporations are also expected to have high quality corporate governance because they are answerable to large stakeholders. Although this research aims to analyze Australia's Top 200 companies, the number of analyzed companies for 2007 and 2008 has been reduced to 177 companies in total due to the lack of information on executives' remuneration and performance. The information on executives' remuneration and companies' performance in 2006 and 2009 will be used for sensitivity analysis. In comparison for 2006 and 2009 there are 152 companies and 170 companies respectively.

Finance companies are excluded from the sample when analyzing the relationship between executives' remuneration and ROI because of their unique accounting procedures (see Dogan & Smyth 2002). Therefore, the sample for analyzing the relationship between executives' remuneration and ROI in 2007

and 2008 includes only 165 companies for each year. There are 139 companies and 157 companies respectively for 2006 and 2009.

Data Collection

Both accounting-based measures and market-based measures are used. Accounting-based measures include return on equity (ROE), return on asset (ROA), and return on investment (ROI). Among all the other accounting performance measures, ROE is chosen because it is suitable for different sectors as long as the shareholders receive a satisfactory return. ROI is said to be better than ROE and ROA because it involves debts and equity used to finance the company, and therefore company managers will find it difficult to manipulate.

For market-based performance measures, price earnings ratio (PER), price to book value, earnings per share (EPS) and dividend yield are selected. EPS measures how much earnings a shareholder can receive from one shareholding. Shareholder return instead of net profit is used because this measurement can check whether executives of a firm act in the interest of their owners, considering the share price movement and dividends.

In terms of data collection and analysis tool, the qualitative information will be collected from newspapers and reports, while quantitative data will be collected from companies' annual reports and research databases, such as Connect 4, Aspect and FinAnalysis. Connect 4 and the companies' annual reports are used to collect the data for executives' remuneration. This database provides details of each director's salary, options and shares, bonus, superannuation, and other benefits. This research also uses Connect 4 to categorize companies based on market capitalization, total revenue, number of employees, and total remuneration. Aspect and FinAnalysis are employed to collect data on business performance. Aspect and FinAnalysis databases provide a whole range of accounting-based and market-based measurements.

4. Results

Australian executives' average total remuneration rose dramatically from 2006 to 2007; however, it seems to have fallen during the recent crisis and was constant until 2009. Although executives' average total remuneration fall during the crisis, the executives' average salaries tend to increase rapidly from 2006 to 2009 at about 33%. The average bonuses decreased significantly during the crisis with the decrement of up to around \$1 million. In contrast, the executives' options tend to fall only after the financial crisis.

Table 1 shows mean, standard deviation, minimum and the maximum value of executives' salaries between 2006 and 2009. During the crisis, the average executives' salaries stood at approximately between \$3.6 million and \$3.7 million. However, the highest paid executives' salaries during that period are nearly ten times more than the average. One of the most significant trends shows that over the four year period, the maximum values of executives' salaries are 5 to 8 times more than the average level. As a comparison between the movement of mean, minimum value and maximum value of executives' salaries, the mean and minimum value of salaries tends to share the same trend and move in the same direction, in that they increased gradually throughout the four year period. However, the maximum value of the salaries experiences a sudden decrease in 2008.

The standard deviations for bonuses during that period of time are higher than the mean. The maximum value for 2006 and 2008 are extremely higher than the mean. Although the maximum values for 2007 and 2009 are lower than their previous year, they are still 5 to 9 times more than the mean. When comparing the pattern, the maximum value in 2007 has decreased significantly but the mean moved in the opposite direction.

One of the unique scenarios is the drastic decline in the minimum value of options from 2007 to 2008. This is most probably due to the awareness of the global financial crisis and loss of confidence in the stock market, whereby executives may prefer to lose less than more in the actual crisis since no one will know for how long the crisis will last. Although the maximum value of executives' options is extremely higher than the sample average executives' options, it drops dramatically by nearly 50% of its value in 2007.

The average value of executives' other remunerations falls within a range of \$3.1 million and \$4.6 million from 2006 to 2009. The mean of other remunerations increases significantly from 2006 to 2007, decreased in 2008 and rose again in 2009 but the minimum value of other remunerations tends to drop steadily. The maximum value and minimum value of other remunerations actually decrease in 2009 but the average value is increased. This indicates that most of the sample companies increase the amount of other remunerations to executives more often than not. Another highlight is that the minimum value from 2006 to 2009 turned out to be negative, which is most probably due to the increased superannuation liability that a company held for its executives.

Table 2 shows the descriptive statistics of company performance for 2006 – 2009. Again, the correlation matrix is presented in Table 3.

Executives' remuneration: Current Year Performance

Salary and Performance

Table 3 presents the correlation between executives' salaries and accounting-based company performance from 2007 to 2008. The result shows there is no significant relationship between executives' salaries and both ROE and ROA during the global financial crisis. Although there is no significant relationship between executives' salaries and ROI in 2007, the executives' salaries show a negative correlation with ROI ($p=0.075$) at 11.3% in 2008. The implication is that executives receiving higher salaries will generate a decline in ROI 2008.

The correlation between executives' salaries and market-based company performance. The results show that executives' salaries are significantly related to price/ book value ($p=0.063$; $p=0.078$), EPS ($p=0$; $p=0.007$), and dividend yield ($p=0.066$; $p=0.022$) in both 2007 and 2008 respectively. Executives' salaries are significant and negatively related to price to book value but positively related to EPS and dividend yield.

The outcome of this relationship between executives' salaries and company performance seems to be mixed. It fails to reject *hypothesis H₁* which states that there is a positive and significant relationship between executives' salaries and company performance. However, executives' salaries are more likely to be linked to market-based performance in comparison to accounting-based performance.

Bonuses and Performance

Table 3 highlights the relationship between executives' bonuses and accounting-based performance measures from 2007 to 2008. The result points out that there is no significant relationship between executives' bonuses and ROE, ROA and ROI.

Similar to executives' salaries, executives' bonuses are significant and positively related to EPS in 2007 ($p=0$) and 2008 ($p=0$). In 2008, executives' bonuses are significant and positively related to dividend yield ($p=0.046$) as well. In contrast, there is no significant relationship between executives' bonuses and price to book value in both years when compared to executives' salaries.

In summary, this research fails to reject *hypothesis H₂* which states that there is a positive and significant relationship between executives' bonuses and company performance because at least it is positive and significantly related to market-based company performance for both years.

Table 1. Descriptive Statistics of Executives' Remuneration for 2006 - 2009

Remuneration	2007				2008			
	Mean	Standard Deviation	Minimum	Maximum	Mean	Standard Deviation	Minimum	Maximum
Salaries	\$ 3596637.85	3553252.54	\$ 55046.00	\$ 33464579.38	\$ 3730919.91	3070584.65	\$ 60550.00	\$ 28698241.54
Bonuses	\$ 3072653.57	9330523.08	0	\$ 16301075.27	\$ 2767623.14	6582700.00	0	\$ 78870233
Options	\$ 1160966.28	2011558.91	0	\$ 16301075.27	\$ 1263803.47	2004200.00	\$ (2909976.78)	\$ 9842951.00
Other Remunerations	\$ 4549011.30	8521285.31	\$ (278866.73)	\$ 57018309.00	\$ 4054914.34	7550674.48	\$ (1458061.00)	\$ 81652044.90

Remuneration	2006				2009			
	Mean	Standard Deviation	Minimum	Maximum	Mean	Standard Deviation	Minimum	Maximum
Salaries	\$ 3122537.34	2353315.66	\$ 50000.00	\$ 18096638.00	\$ 4151557.82	3603214.51	\$ 66055.00	\$ 35739043.49
Bonuses	\$ 2510996.21	8195157.17	0	\$ 98248396	\$ 2113068.35	3106743.42	0	\$ 19125272.63
Options	\$ 944955.46	1706070.00	0	\$ 11736776.00	\$ 948542.57	1845720.00	\$ (2151598.00)	\$ 12855480.00
Other Remunerations	\$ 3110263.53	4748202.73	\$ (160360.68)	\$ 29717007.00	\$ 4462371.63	8385522.17	\$ (7208852.00)	\$ 78471277.70

Table 2. Descriptive Statistics of Company Performance for 2006 - 2009

Performance	2007				2008			
	Mean	Standard Deviation	Minimum	Maximum	Mean	Standard Deviation	Minimum	Maximum
ROE	0.17	0.30	(1.20)	2.43	0.16	0.22	(0.66)	1.62
ROA	0.08	0.18	(0.87)	1.80	0.08	0.10	(0.19)	0.82
ROI	0.95	4.15	(9.51)	43.41	0.93	3.92	(4.01)	40.18
PER	10.39	84.28	(935.29)	43.41	11.16	64.07	(319.01)	594.78
P/ Book Value	5.02	7.56	(7.49)	53.63	3.03	4.03	(20.35)	20.29
EPS	73.47	111.46	(65.80)	716.40	64.21	129.66	(155.30)	928.30
Dividend Yield	0.03	0.02	0.00	0.09	0.05	0.05	0.00	0.44

Performance	2006				2009			
	Mean	Standard Deviation	Minimum	Maximum	Mean	Standard Deviation	Minimum	Maximum
ROE	0.09	0.13	(0.50)	0.90	0.05	0.12	(1.19)	0.46
ROA	0.04	0.06	(0.21)	0.38	0.03	0.04	(0.20)	0.14
ROI	(0.17)	2.87	(33.33)	1.57	0.08	0.18	(0.82)	1.64
PER	154.50	1316.69	(25.36)	16153.85	85.71	372.24	(3.78)	4525.86
P/ Book Value	4.13	3.81	0.00	18.77	2.48	2.44	(0.29)	15.99
EPS	61.47	93.51	(153.30)	710.60	35.15	153.87	(876.80)	804.70
Dividend Yield	0.04	0.02	0.00	0.12	0.41	0.04	0.00	0.26

Table 3. Correlation Matrix for 2007 and 2008

	Salary	Bonus	Options	O Rem	ROE	ROA	ROI	PER	P/BV	EPS	DY
(1) Salaries 07	1.0000										
(2) Bonuses 07	0.373**	1.0000									
(3) Options 07	0.353**	0.289**	1.0000								
(4) Other Remunerations 07	0.638**	0.658**	0.228**	1.0000							
(5) ROE 07	0.43	0.027	(0.004)	0.048	1.0000						
(6) ROA 07	(0.005)	(0.38)	(0.087)	(0.028)	0.867**	1.0000					
(7) ROI 07	(0.084)	(0.058)	(0.082)	(0.054)	0.617**	0.760**	1.0000				
(8) PER 07	0.053	0.023	0.008	0.036	0.109*	0.124*	0.046	1.0000			
(9) Price/ Book Value 07	(0.116)*	(0.066)	0.155**	(0.077)	0.283**	0.319**	0.390**	0.25	1.0000		
(10) EPS 07	0.266**	0.428**	0.171**	0.534**	0.235**	0.150**	(0.020)	0.063	(0.058)	1.0000	
(11) Dividend Yield 07	0.114*	0.070	(0.088)	0.013	0.141*	0.050	(0.005)	0.25	(0.287)**	0.091	1.0000
	Salary	Bonus	Options	O Rem	ROE	ROA	ROI	PER	P/BV	EPS	DY
(1) Salaries 08	1.0000										
(2) Bonuses 08	0.273**	1.0000									
(3) Options 08	0.170**	0.223**	1.0000								
(4) Other Remunerations 08	0.786**	0.435**	0.000	1.0000							
(5) ROE 08	0.076	0.046	(0.058)	0.072	1.0000						
(6) ROA 08	0.012	(0.062)	(0.131)*	0.083	0.654**	1.0000					
(7) ROI 08	(0.113)*	(0.092)	(0.095)	(0.051)	0.123*	0.309**	1.0000				
(8) PER 08	0.044	0.010	(0.074)	0.022	0.090	0.155**	0.052	1.0000			
(9) Price/ Book Value 08	(0.107)*	(0.038)	0.065	0.035	0.192**	0.298**	0.016	(0.207)**	1.0000		
(10) EPS 08	0.183**	0.389**	0.117*	0.316**	0.294**	0.339**	(0.015)	0.039	0.254**	1.0000	
(11) Dividend Yield 08	0.151**	0.127*	(0.021)	0.033	0.053	0.062	0.128*	0.006	(0.162)**	0.033	1.0000

Options and Performance

Table 3 shows the relationship between executives' options and accounting-based performance measures from 2007 to 2008. Overall, executives' options are not significant and positively related to accounting-based performance measures but in 2008, there is a negative and significant ($p=0.041$) relationship between executives' options and ROA.

The relationship between executives' options and market-based company performance indicates that there is a positive and significant relationship between executives' options and EPS in 2007 ($p=0.011$) and 2008 ($p=0.061$). Furthermore, there is also a positive and significant ($p=0.02$) relationship between options and price to book value in 2007.

In brief, this research fails to reject *hypothesis H₃* which states there is a positive and significant relationship between executives' options and company performance. The sensitivity is higher in regard to market-based performance measures.

Other Remunerations and Performance

The correlation between executives' other remuneration and accounting-based company performance from 2007 and 2008 shows that there is no significant relationship between executives' other remuneration and accounting-based company performance.

Table 3 explains the relationship between executives' other remunerations and market-based company performance. Judging by this outcome, EPS emerge as the only performance variables that are related to executives' other remuneration. There is a positive and significant relationship between both variables during the recent crisis (2007, $p=0$; 2008, $p=0$).

From the results shown, it has failed to reject *hypothesis H₄* which states that there is no significant relationship between executives' other remunerations and company performance. In fact, other remunerations are significant and positively related to EPS.

Executives' remuneration: Before and After Financial Crisis

In this section, sensitivity analysis will be undertaken to discover what happened before and after the financial crisis and compare them with current year performance.

Salaries and Performance – Before and After Crisis

The result indicates that there is no significant relationship between executives' salaries and accounting-based company performance except for ROE in 2006, whereby a positive and significant relationship between them exists. Again, executives' salaries are positive and significantly related to EPS and dividend yield in 2006 but in 2009, none of the market-based performance measures has a significant relationship with executives' salaries. Overall, there is no significant relationship between executives' salaries and both accounting-based and market-based company performance measures in 2009, while in 2006 executives' salaries tend to be significantly related to market-based company performance.

Bonuses and Performance - Before and After Crisis

The correlation between executives' bonuses and ROE is the only accounting-based performance measure, which is significant. These two variables are positive and significantly related in 2009. The correlation between executives' bonuses and market-based company performance in 2006 and 2009 shows that there is a positive and significant relationship between executives' bonuses and EPS in 2006 and 2009. Apart from this finding, in 2009 executives' bonuses are negative and significantly related to PER. The only performance measure that is significant to executives' bonuses in 2006 is EPS. The result from 2009 suggests the correlation is mixed, in that executives' salaries are significantly related to both accounting-based (ROE) and market-based company performance (EPS and PER). Therefore, executives' bonuses are more sensitive to market-based company performance in 2006 but the sensitivity of executives' bonuses to company performance in 2009 is ambiguous.

Options and Performance - Before and After Crisis

Most of the accounting-based performance measures are not significantly related to executives' options except ROI (significant and negative) in 2009. EPS is positive and significantly related to executives' options, while dividend yield is negative and significantly related to executives' options in both years. Apart from that, in 2006, executives' options are also positive and significantly related to price to book value. In 2006, executives' options are significantly related to market-based performance measures but the directions of correlation are mixed, whereas in 2009 the correlation between executives' options and company performance remain unclear. This is the result of a mixture of significant relationships in accounting-based and market-based performance measures.

Other Remunerations and Performance - Before and After Crisis

There is no significant relationship between executives' other remunerations and accounting-based performance measures for both 2006 and 2009. The results point out that price to book value, EPS and dividend yield have a significant relationship with executives' other remunerations in 2006. However, the directions of correlation of these three performance measures to executives' other remunerations differ, in that EPS and dividend yield are positively related to executives' other remunerations, while price to book value is negatively related to it. Conversely, there is no significant relationship between executives' other remuneration and market-based performance measures in 2009. Executives' other remunerations are more sensitive to market-based rather than accounting-based performance measures since there is a positive and significant relationship between them in 2006. In contrast, executives' other remunerations are neither related to accounting-based nor market-based performance measures in 2009.

Analysis of the Results

In the Australian context, executives' remuneration relies on market-based performance measures. The findings of this research are similar to those of an early 1990s study by Defina, Harris and Ramsay (1994), who examined the pay-for-performance relationship in the largest companies in Australia using data from 1989 to 1990. They found that there is no relationship between salaries, bonuses, and options, and company accounting performance such as ROE and ROA. However, Crespi-Cladera and Gispert (2003) found that executives' remunerations are more sensitive to accounting-based performance measures than market-based performance measures because most Spanish companies linked their executives' remuneration to the previous year's profit.

The only accounting-based performance measure which salaries are significantly related to is ROI but they are negatively related. According to the descriptive analysis, there is a slight increase in 2008 salaries. Since the companies' average operating income decreases during the crisis, an increase in salary will increase companies' expenses and cause the total income to fall. This is because ROI is measured using two variables, these being total net profit and shareholder investment; usually, economic downturn will lead to a reduction in companies' total net profit. According to a report from Deloitte (2010), the largest 250 retail companies experienced falling profits as a result of the financial crisis. Therefore, it is reasonable to expect that salaries are negatively related to ROI.

There is a significant relationship between salaries and market-based performance measures. In theory, salaries are still believed to be an independent remuneration component because they are fixed and will not be affected by how well or otherwise companies perform. Similarly, most of the components of other remunerations, such as superannuation, allowances, termination payments and so on are also independent of company performance. However, in practice, salaries and other remunerations will still be affected slightly by company performance. There may be no target for executives to achieve in order to increase their salaries or other remunerations but if performance is poor, they may still face the risk of having their salaries and other remunerations reduced as a minor form of punishment (Brett 2010) or even being sacked by the company. This research found that the only performance variable which is significant and positively related to other remuneration is EPS, which is supported by Stapledon (2004), who believed that superannuation has only a very tenuous relationship with company performance. During the financial crisis, it is assumed that executives' salaries and other remunerations should be reduced in order to cut salary expenses but generally companies will increase executives' salaries because they are tax deductions (Productivity Commission 2009), while executives gain tax benefits from other remunerations such as superannuation and allowances.

The pay-for-performance relationship between bonuses and accounting returns is insignificant especially when there is a reduction in returns, which is consistent with the findings of Jackson, Lopez and Reitenga (2008). They further explained the reason behind this is that the accounting measures which are used to determine bonus compensation model are left out. This outcome is supported by Shaw and Zhang (2010) who examined the sensitivity of CEO bonus compensation to poor firm performance, using ROA as their performance measure. They found that the sensitivity of cash compensation to poor earnings is weak, meaning that a CEO's bonus compensation may still remain unchanged even if accounting performance declines.

In contrast, bonuses are significant and positively related to market-based performance measures, particularly EPS, similarly to options. This is because large Australian companies such as BHP Billiton, Woolworths, CSL, St. George Bank, Leighton Holdings and Harvey Norman linked their remuneration plan to EPS and total shareholder return (TSR), which involve dividends and changes the share price (Curry 2003; Productivity Commission 2009; Brett 2010). Executives are required to increase the company's EPS and meet certain targets in TSR in order to have their bonuses and options increased. Since executives' remunerations are linked to EPS during the financial crisis, it is possible that executives will buy back shares to increase EPS (Share Trading 2010).

In order to better understand the pay-for-performance relationship during the global financial crisis, sensitivity analysis was carried out to compare this relationship. In terms of 'before and after' it was found that the relationships are mixed. The relationship before the crisis appears to be the same as during the recent crisis, whereby salaries, bonuses, options and other remunerations are significant and positively related to EPS, yet, after the crisis, the only remunerations which are positive and significantly relate to EPS are bonuses and options. Salaries and other remunerations have no significant relationship with EPS in 2009. This is because most companies set their bonuses and options performance hurdles to EPS, while salaries and other remunerations are generally fixed. Executives will still receive them regardless of how well they performed. Subsequently the findings of this research are consistent with the research of the Productivity Commission (2009) and fail to reject the hypothesis, specifically that there is a positive and significant relationship between Australian executives' remuneration and companies' performance during the global financial crisis while controlling the external factors that will influence this relationship.

The results show that executives' remunerations are more sensitive to market-based measures than accounting-based measures, particularly earnings per share (EPS) during the crisis. According to the r^2 , the EPS explained 34.7% of its relationship with salaries, bonuses and options. The correlations between executives' salaries, bonuses, options and other remunerations and company performance during the financial crisis fall between 10.7% and 53.4% with a significance level of 95% and 99%. The variance inflation factor (VIF) for the 2007 and 2008 analysis is able to keep within 4 to minimize the standard error for the coefficient of the remuneration. In general, sensitivity analysis, lead and lag analysis also indicate that executives' remunerations are more sensitive to EPS before, during and after the global financial crisis.

5. Conclusion

The findings of this research differ in some ways to other studies, and the desired objectives of this research have been achieved. It is hoped that these results will draw the attention of management teams and shareholders of Australian companies. The first objective is *to examine the extent of relationship between executives' remuneration and company performance in the recent crisis* and this research finds that executives' remunerations (salaries, bonuses, options and other remunerations) tend to be more sensitive to market-based performance measures compared to accounting-based performance measures during the crisis. Specifically, these remunerations variables are more significant and positively linked to EPS.

The second objective is *to understand the pay-for-performance relationship before, during and after the global financial crisis* using sensitivity analysis and finds that this relationship is slightly different during each period. The findings for 2006 (prior to the crisis) show that executives' remunerations are more sensitive to market-based performance measures while in 2009, salaries and other remunerations show no significant link to any of the performance measures. Bonuses and options are the only remuneration components having a significant relationship with company performance. Therefore, these demonstrate that economic conditions will most likely affect this pay-for-performance relationship.

Previous studies emphasized the link between executives' remuneration and company performance focus on the basis of agency theory and most scholars raised their concerns on the absence of the interest between management and shareholders. However, this research proves that executives of Australian companies have at least attempted to align their interests to their shareholders' interests by linking their remunerations to market-based performance measures during the crisis. Market-based performance measures represent shareholders' interests because their main aim is to receive an increment in either capital (through changes in share price) or return (through dividend) or even both.

The findings of this research suggest that other companies not mentioned in this study may use market-based performance measures, especially EPS as their performance hurdle for executives' remunerations. Accounting-based performance measures may not be suitable for determining the proportion of executives' remuneration because it can be manipulated by managers.

Limitations

There are a number of limitations which may influence the results of this research and they need to be addressed. The first limitation is the data source. It is possible that having a different financial year for each company may affect the calculation of how well companies performed during the financial crisis. For example, if a company's financial year ends on 30th June, then their data for 2007 does not reflect the impact of the financial crisis. However, if another company's financial year ends on 31st December, its data will include the impact of the crisis and present a true picture of the financial crisis as it unfolded in 2007.

The second limitation is that the chosen remuneration and performance variables may not be the actual variables that will reveal the true relationship between them. There is a risk that the variables are chosen incorrectly and therefore, this study may not accurately report the real relationship between executives' remunerations and company performance. For example, executives' options may not represent the real value of the current year but instead they have been accumulated over several years. Furthermore, although it is appropriate to use the Top 200 Australian listed companies based on market capitalization, the results may be very different if the next 200 listed companies are used as the sample. This is because they have different remuneration systems and strategies.

In addition, some critiques have been developed on the use of accounting-based performance measures especially those related to earnings. First of all, accounting-based performance measures can be easily manipulated by company executives to their desired level of performance. Secondly, an earning does not reflect the true view of the cash in hand because it includes accruals and depreciation which do not involve cash. Last but not least, accounting-based performance measures will encourage executives to pay attention to short-term gains rather than long-term gains. This is because if a company sets its remuneration target based on accounting measures, executives have the opportunity to maximize performance during that period in order to increase their remunerations.

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