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A substantial literature devoted to the use and impact of executive options schemes now exists. This literature has provided important insights into matters such as the frequency with which business enterprises employ options as an integral element of their compensation frameworks, the scale of options plans in use and the incentive and governance consequences of the employment of options as a component of executive remuneration. However, a majority of this literature has focused on the United States, and consequently comparatively little is known about the dimensions and impact of executives options plans in other advanced economies. This paper addresses part of that gap by providing an overview of the executive options plans adopted by a sample of top 100 Australian Stock Exchange (ASX - 100) listed companies between 1997 and 2004. In particular, this paper provides details of the number of organisations within the ASX 100 which used executive options in each year of the sample period, the magnitude of the options plans put in place, the degree to which options issued pursuant to these plans were concentrated into the hands of a small set of executives and estimates of the impact these schemes would have had on before tax earnings had a requirement that the cost of options be expensed existed during the period under review.

Key Words
Executive Options, Financial Reporting
INTRODUCTION

By the early years of the new millennium debate about the role, legitimacy and impact of executive options was endemic. Although academic literature had begun to produce troubling results in relation to links between the existence and magnitude of executive options schemes and opportunist behaviour on the part of recipient executives (e.g. Aboody & Kasnik 2000, Ali & Stapledon 2000, Chen, 2002), the issue which dominated public debate related to desirability of revising financial reporting rules to require that the cost of executive options be counted in the determination of the annual reported profitability of corporations granting options to their executives.

These debates reached and engulfed the actors entrenched at the commanding heights of the regulatory, political and financial institutions of the United States. Faced by a recalcitrant corporate sector largely unwilling to embrace the principle of recognising the cost of options in the process of calculating profits (despite the capacity to do so under the precepts of SFAS 123), apparently for fear of the negative impact this would have on reported profits, a number of high profile U.S figures made their views very plain indeed. In a speech delivered at New York University, U.S Federal Reserve Chairman Alan Greenspan is reported1 to have said:

“If investors are dissuaded by lower reported earnings as a result of expensing, it means that they were less informed than they should have been. Capital employed on the basis of misinformation is likely to be capital misused.”

Warren Buffet was even more direct, asking:

“If options aren’t a form of compensation, what are they? If compensation isn’t an expense, what is it? And if expenses shouldn’t go into calculations of earnings, where in the world should they go?”2

In the United States Senate, Senators Levin and McCain introduced a bill which, if enacted would have forced corporations either to expense options or to pay tax on them3. Inevitably, the repercussions of these debates were felt in other advanced market economies such as Australia, where the key issues were rendered even more tangible by the lack of even basic mandatory accounting rules on the subject of executive options (Carlin & Ford, 2003).

There, the announcement that an accounting standard requiring that the cost of options be recognised as an expense in the calculation of corporate profit would be operative by 20054 appears to have been taken as a signal for a return of collective calm and disinterest5 in what before the announcement of an impending standard had been a contentious issue. Remarkably, in our view, the debate in Australia receded without any systematic airing of key empirical issues relating to the magnitude and

2 Merrill Lynch, Global Industry Research Note, 7 May 2002, Accounting for Options.
3 The bill was introduced to the U.S Senate on February 12, 2002. It was not passed into law.
4 This did eventuate, in the form of Australian Accounting Standard AASB 2, Share Based Payment. Knowledge of the impending standard was widespread by early 2003.
5 As to which, see the data we set out on the frequency of newspaper articles in major Australian newspapers devoted to executive options in Table 3.
impact of options usage or the possible policy consequences flowing there from. Thus, in this paper, we contribute to the literature by providing an overview of a number of key parameters relating to the use of executive options in Australia. The paper proceeds as follows.

In section two, we describe our sample and the time period over which we conducted our research, and set out evidence on the frequency with which large listed Australian corporations used options schemes in the context of the remuneration of their employees during that period. In section three, we review the scale of these schemes by examining the number of options issued, the number of options outstanding and the number of options exercised by our sample of corporations during the period we studied. We also provide data relating to options holding concentration and present some preliminary thoughts on the implications of this data.

In section four we present some estimates of the impact the options schemes we observed would have had on the operating profit before taxation reported by our sample of corporations had they been under an obligation to factor costs associated with their options schemes into their annual earnings calculations. Finally, in section five we set out some conclusions and prognostications for future research.

**HOW PREVALENT ARE EXECUTIVE OPTIONS PLANS IN AUSTRALIA?**

In order to develop insights into the scope of use of executive options plans in Australia, we selected a sample consisting of the top 100 Australian listed corporations (as measured by market capitalisation) as at the conclusion of 1996. We then gathered data relating to the use of executive options plans by these organisations from 1997 through to 2004, inclusive.\(^6\)

We classified corporations within our sample as falling into one of three classes in each of the years we reviewed. The first group are labelled “no plan”. Corporations fell into this category in a particular year if their annual report for that period contained no reference to options plans. The second group are labelled “has plan”. These corporations did include references to the existence of options plans within their annual financial reports.

The final group are labelled “exit”. These firms either merged or were delisted during the period under review, making it impossible to gather data in relation to their options schemes for the entire period under review. However, for the sake of completeness, these companies are also tracked in our dataset, allowing the calculation of the proportion of surviving firms within the sample which maintained an executive options plan in each year we studied.

Slightly more than half of the sample of large firms we examined had options plans in 1997. This grew rapidly to approximately 80% of our surviving firms by 2000, and stabilised thereafter. However, the data displays no convincing evidence that the turn of the millennium controversies surrounding the use and impact of options referred to above has resulted in any measurable dampening in the enthusiasm of Australian

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\(^6\) We initially set the commencement year for our study as 1996, but found that financial statement disclosures relating to options were so fragmented and inconsistent in that year that it was necessary to select a later year as the commencing period for the study.
corporations for the use of options schemes as an element of executive compensation. This data is set out in Table 1, below.

Table 1 – Proportion of Sample Organisations With Executive Options Plans

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<tbody>
<tr>
<td>No Plan</td>
<td>47</td>
<td>32</td>
<td>29</td>
<td>22</td>
<td>20</td>
<td>17</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Has Plan</td>
<td>53</td>
<td>68</td>
<td>71</td>
<td>78</td>
<td>77</td>
<td>75</td>
<td>62</td>
<td>62</td>
</tr>
<tr>
<td>Exit</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Sample Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>% Survivors with Plan</td>
<td>53%</td>
<td>68%</td>
<td>71%</td>
<td>78%</td>
<td>79%</td>
<td>82%</td>
<td>78%</td>
<td>78%</td>
</tr>
</tbody>
</table>

While this data clearly shows a pattern of growth in the application of executive options schemes in first half of the period reviewed, followed by a period of stabilisation, it does not permit direct insight into the size and level of activity (both in terms of fresh grants and exercises of options) of these schemes. This is discussed in section three below.

SIZE, ACTIVITY AND CONCENTRATION OF THE OBSERVED OPTIONS SCHEMES

In order to gauge the scale of options schemes and the degree of activity of those schemes, we measured three variables. These were: the volume of new option grants each year, the volume of option exercises each year and the volume of outstanding options at the end of each year. We also examined the degree of holdings concentration evident in Australian executive options schemes. This provides a higher resolution view of the nature of these schemes than would otherwise be available, and provides data on a variable which has been relatively little researched but which, as we explain later in this section, may be of significance in influencing the impact of executive options schemes.

To take account of variations in the size of the organisations we studied and the changes in the total number of organisations which had active options plans in each of the years we studied, we express the data relating to each variable as a percentage of outstanding ordinary equity at the conclusion of each year studied. The first two variables, “Grants” and “Exercises” measure the level of activity in the options plans we examined⁷ while the third variable, “Vol. Outstanding” provides a scale measure. Our findings are presented in Table 2, below.

⁷ One other form of event, lapses, also provides a measure of turnover activity in corporate options plans. However, in the context of our sample of companies and the timeframe of our analysis, lapses represented only a minor phenomenon, dominated by grants and exercises. Bearing this in mind, and for reasons of space, we do not discuss lapses in this paper.
Two features of the data in particular are worth noting. First, between 1997 and 2000, there was much higher growth in the scale of the options plans we observed than in the propensity of corporations within our sample to employ options plans. Recall that 53% of our sample had options plans in 1997, versus 78% by 2000. This represents growth of approximately 50% across that period. However, over the same timeframe, the volume of options on issue as a proportion of outstanding ordinary equity capital rose from 1.56% to 6.27%, a fourfold increase in scale. Thus, on average, not only did more corporations choose to use options schemes, but the scale of those schemes grew significantly.

Second, it would appear that corporations using options schemes significantly changed their behaviour from 2001 onwards. Observe, for example, how the volume of options grants recorded in 2001 fell to approximately a quarter of the level observed in 2000. This was not a transient event. The level of grant activity for the remainder of the time period reviewed also remained within a tight range of the 2001 grant volume level.

Balanced against this, there was no material fall in the proportion of our sample which continued to operate executive options plans, and in consequence, taking account of the lagged effect associated with exercises, the average scale of options plans (as measured by options outstanding as a proportion of outstanding ordinary equity capital) declined during the final years we studied, settling in a range closer to what it had been in the first two years for which we collected data.

We cannot draw firm conclusions as to the cause of this material change in grant volume and scheme size. Market factors may account for part of these occurrences: the five year period leading up to 2000 had been one of steady growth in the Australian All-Ordinaries Share Price Index, but the two year period 2000 – 2001 was one characterised by little growth and high volatility. The Index then showed substantial decline over the year 2002 and the first quarter of 2003. These patterns could be linked to options schemes becoming less attractive in the remuneration packages of executives over these periods in time.

Further, it does not seem too far fetched to suggest that the level of political and media attention focused on executive options during 2001 and 2002\(^8\) together with the looming likelihood that in the not too distant future the financial reporting rules would evolve to require expensing of options saw companies retreating from the expansive use of options schemes which they had adopted by 1999 and 2000. In this regard,

\(^8\) We have discussed these issues in greater detail elsewhere. See; Carlin & Ford, 2004.
Table 3 shows the number of articles in major Australian newspapers, on a year-by-year basis, between 1996 and 2004.

Table 3 – Newspaper Articles on Executive Options

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</tr>
</thead>
<tbody>
<tr>
<td>Number of articles</td>
<td>1</td>
<td>2</td>
<td>11</td>
<td>6</td>
<td>19</td>
<td>14</td>
<td>251</td>
<td>121</td>
<td>51</td>
</tr>
</tbody>
</table>

Following virtually no media interest in the period to 1996-2001, a substantial number of articles appear in 2002. From 2003, media articles decline almost as significantly as they rose in the preceding period. Though not comprehensive, this does provide at least some evidence which appears consistent with our thoughts on the possible drivers of the marked reduction in option grants which transpired in 2001 and later periods compared with grant activity in 1999 and 2000.

In addition to our investigation of the size and activity parameters we discuss above, we also gathered data on the holdings concentration of the option plans put in place by the organisations we studied.

The term “holding concentration” refers to a measurement of the degree to which the ownership of options issued pursuant to an organisation’s executive options scheme is concentrated in the hands of a select group of senior actors, defined in this study to include the board (including executive and non executive members), the chief executive officer, and highest remunerated five non director executives employed by the firm. Thus holdings concentration represents the percentage of outstanding options issued by an organisations held by the group of senior actors defined above.

We set out our data on this variable in Table 4, below. Even on cursory inspection, a number of matters are clearly apparent. The first such issue is the high proportion of executive options which are held (on average) by the chief executive officer. In our sample, CEOs on average held approximately one fifth of all outstanding options. This suggests a strong nexus between the total wealth of these individuals and the share prices of the organisations they lead.

It requires the aggregation of the option holdings of all the remaining board members and the next five non board executives to match the volume of options placed in the hands of the CEO alone. Nonetheless, a second important observation from the data is that board holdings dominate those by non board executives (though not to an enormous extent), and that together, the very elite of the executive ranks of the organisations we studied controlled a very significant proportion of the total number of options outstanding pursuant to their organisation’s executive options plan.

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9 Data extracted from the Factiva database, set to ‘all dates’, ‘Australia and New Zealand’, ‘major Australian newspapers’, ‘executive options’.

10 On the basis of disclosures contained within the annual financial statements of listed public corporations, it is possible to gather data on options issuance and holdings to this level of detail.
Table 4 - Concentration of option holdings among senior management
(average holdings by company)
1997-2004

<table>
<thead>
<tr>
<th>Year</th>
<th>Chairman</th>
<th>CEO</th>
<th>Executive Director</th>
<th>Non Executive Director</th>
<th>Board Senior Executive</th>
<th>Non Board Senior Executive</th>
<th>Total Senior Executives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>14%</td>
<td>31%</td>
<td>15%</td>
<td>12%</td>
<td>40%</td>
<td>7%</td>
<td>40%</td>
</tr>
<tr>
<td>1998</td>
<td>14%</td>
<td>26%</td>
<td>15%</td>
<td>10%</td>
<td>34%</td>
<td>12%</td>
<td>42%</td>
</tr>
<tr>
<td>1999</td>
<td>10%</td>
<td>20%</td>
<td>11%</td>
<td>8%</td>
<td>26%</td>
<td>11%</td>
<td>38%</td>
</tr>
<tr>
<td>2000</td>
<td>14%</td>
<td>19%</td>
<td>15%</td>
<td>11%</td>
<td>27%</td>
<td>10%</td>
<td>40%</td>
</tr>
<tr>
<td>2001</td>
<td>11%</td>
<td>20%</td>
<td>12%</td>
<td>9%</td>
<td>28%</td>
<td>12%</td>
<td>38%</td>
</tr>
<tr>
<td>2002</td>
<td>9%</td>
<td>17%</td>
<td>14%</td>
<td>10%</td>
<td>24%</td>
<td>17%</td>
<td>40%</td>
</tr>
<tr>
<td>2003</td>
<td>11%</td>
<td>21%</td>
<td>13%</td>
<td>7%</td>
<td>27%</td>
<td>18%</td>
<td>42%</td>
</tr>
<tr>
<td>2004</td>
<td>12%</td>
<td>18%</td>
<td>15%</td>
<td>6%</td>
<td>26%</td>
<td>19%</td>
<td>43%</td>
</tr>
</tbody>
</table>

Therefore, on the basis of our data we argue that the executive options plans of large Australian corporations are characterised by a significant degree of holdings concentration. In the only other published research of which we are aware which touches on this issue, Blasi et al (2003, p. 190) suggest senior executive holding concentration in top 100 U.S. based firms at around 33%. It would therefore seem that at least in aggregate, the Australian experience is similar to that of the United States.

To the extent that concentration has been associated with a greater tendency for firms to display shareholder value reducing (but option holder value increasing) behaviour, the apparent similarity in concentration levels between the U.S. and Australia might also assist in the interpretation of the applicability of U.S. empirical research results for Australian conditions.

Our rationale for gathering the data reported within this paper in relation to options holding concentration is based on a logical deduction rather than empirical analysis. We begin with the premise that the existence of options schemes as an element of executive remuneration brings with it the possibility of inducing incentives for behaviour which, while enriching the holder of the option, does nothing for or actually degrades shareholder wealth (Chen, 2002; Core & Guay, 2001; Ellis, 1998; Monks, 2003; Yermack, 2001). Upon examining the literature which examines this possibility, it became clear to us that most of the mechanisms for achieving these unfortunate wealth transfers were within the grasp of only a very select group of actors within an organisation.

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11 This is the sum of all board option holdings (irrespective of position on board, executive or non executive status) as well as the holdings of the top 5 non board executives employed by the firm. Because of the averaging technique used in deriving the data, it is not possible to sum the columns in any row on the table to reach this aggregate figure.

12 This suggestion is a key tenet of the arguments advanced by Blasi et al in relation to problematical design aspects of executive options plans. See Blasi et al, 2003, p. 190.
Altering capital structure mix, systematic alteration of firm risk profile, the management of information flows between the firm and capital markets, the timing of options issue and vesting and the execution of decisions to engage in reloads are all initiated by a very narrow but powerful constituency within a firm (Carlin & Ford, 2004). Yet our data demonstrates that this same constituency stands to gain disproportionately from an inflation of option value. Our basic intuition may therefore be put as simply as suggesting that the narrow decision making constituency holding a disproportionate exposure to outstanding options has both the means and the motive necessary to give effect to actions which endanger shareholder wealth creation and therefore represent poor governance outcomes.

This capacity for action is brought into even sharper relief when considering our surprising findings about the extent to which even non-executive directors participate in options schemes in some of the organisations in our sample. Whether or not this capacity has been brought to bear is an empirical question with which we propose to engage in future research. However, irrespective of additional empirical enquiry, the results reported within this paper stand alone, and serve as a reminder that while the careful design of incentive contracts (for example options packages) represents an important element of governance oversight, so too does the maintenance of a careful watch on the dispersion or concentration of ownership of options issued by firms as part of overall remuneration policy.

Having considered the question of options holding concentration, we turn to the question of the cost of the executive option schemes we studied. This is set out in section four, below.

**ESTIMATED COST OF EXECUTIVE OPTIONS SCHEMES**

At no time during the period we studied was there any requirement that Australian corporations with executive options schemes reflect the cost of these schemes in their annual profit calculations, and none of the companies we studied did so voluntarily. However, from the late 1990s onwards, the organisations we studied typically made reasonably detailed disclosures relating to their options plans in the notes to their accounts.

Coupled with disclosures (not forming part of their annual financial reports) about their options plans these companies were required to make to the Australian Stock Exchange, we were able to gather sufficient data to support the estimation of the expense associated with the options schemes employed by our sample of companies, but not recognised in the calculation of their reported profits.

The question of how best to estimate expenses associated with options schemes and reflect these expenses within corporate financial statements remains controversial and contested (Coulton & Taylor, 2002). In particular, though most approaches accept the use of techniques such as the Black-Scholes model to estimate the fair value of options at the date of grant\(^{13}\), the question of how such values might be recognised in

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\(^{13}\) A representative example is Australian Accounting Standard AASB 2- Share Based Payment, which specifically recognises the use of the Black-Scholes and Binomial approaches to the estimation of the fair value of options as at the date of grant. In the United States, FAS 123 also recognises the use of
financial statements and subsequently modified in light of changing circumstances (for example changing market prices for the underlying equity securities, options failing to vest) is highly controversial.

It is not our objective to engage with the financial reporting debate in this paper. However, because we report data in Table 5 below which represents our estimate of the degree to which the reported operating profit before tax of our sample of companies would have been reduced had the cost of options been factored into the calculation of that number, it is necessary to briefly explain the valuation and reporting methodology we employed in constructing our expense estimates.

We began by using a Black-Scholes model to estimate the fair value of options granted in any given year. We then treated that entire amount as an expense of the period during which the grant occurred. At each subsequent balance date, we marked outstanding options to market, again using the Black-Scholes model as our basis for estimating fair value.

Any resulting valuation increments (or decrements) were taken to each period’s profit and loss calculation as expenses (or expense reversals). Any lapses of options were accounted for as expense reversals in the period during which the lapse occurred. The net effect of this mark to market based approach to accounting for executive options, is that over the life of the option, the expense which is distributed through the profit and loss statement of the granting entity will equal the intrinsic value of the option at the point in time when it is exercised.

Thus, in net terms, expenses will only be recognised over time when a transfer of intrinsic economic value between employer and employee actually does transpire. Consequently, the expense to shareholders is exactly the same as the opportunity cost of the foregone cashflows which they could have enjoyed as a result of the issue of equity at market prices, but did not because equity was issued to employees at below market prices.

The chief objection to this approach to the financial reporting of the impact of executive options schemes is that its reliance on the mark to market process may result in substantial increases in the volatility of reported earnings (Berger et al 1991, Jones 1993, Robertson 1995). However, in other Australian settings where a mark to market accounting approach has long been the norm, its application is no longer seen as contentious nor has its application caused observable havoc (Carlin 2002).

We provide three basic data items in Table 5. The first of these is our estimate, expressed in millions of Australian dollars, of the per-period expense associated with the options schemes operated by our sample of listed corporations. The second item is the sum of the before tax operating profits reported by the subset of companies in our sample which had executive options schemes in each particular period. The final item expresses our estimate of the expense of the executive options schemes we identified models such as Black-Scholes to assist with the initial process of estimating the fair value of options granted pursuant to executive options plans.
in each period as a proportion of the reported before tax profits of the companies we identified as having executive options schemes in those periods.

Table 5 – Estimated Expense Associated With Options Plans

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<tbody>
<tr>
<td>Exp</td>
<td>$342.5</td>
<td>2,780</td>
<td>279</td>
<td>3,008</td>
<td>102.6</td>
<td>(753.3)</td>
<td>(52.3)</td>
<td>580.2</td>
</tr>
<tr>
<td>SM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14,550</td>
<td>18,644</td>
<td>16,756</td>
<td>27,550</td>
<td>23,707</td>
<td>8,206</td>
<td>27,139</td>
<td>30,389</td>
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<tr>
<td>OPBT</td>
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<td></td>
</tr>
<tr>
<td>Exp %</td>
<td>2.35%</td>
<td>14.91%</td>
<td>1.66%</td>
<td>10.92%</td>
<td>.43%</td>
<td>(9.18%)</td>
<td>(.19%)</td>
<td>1.91%</td>
</tr>
<tr>
<td>OPBT</td>
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Though as discussed the application of a mark to market approach to the estimation of option expenses has resulted in noticeable between periods volatility, the more important consideration is that the average impact of options related expenses across all companies and years we reviewed was in the order of 3% of the before tax profits reported by companies using options schemes. While this is lower than some published estimates of the average impact of expensing the options schemes of samples of U.S listed companies\textsuperscript{14}, the effect is material nonetheless\textsuperscript{15}.

CONCLUSIONS

Our data provides a preliminary overview of the frequency of use, size, concentration and potential cost impact of executive options schemes used by large listed Australian corporations. Though in this paper we do not provide directly measured evidence relating to impact on corporate performance, governance quality and risk behaviour associated with these schemes, our data makes it plain that in an Australian context, executive options schemes have been and remain economically significant and an important subject for continuing research.

This is particularly the case for options holding concentration, which has been an under researched variable, though one which may hold the key to a more detailed and meaningful understanding of the nature of executive options plans and thus a greater capacity to predict their impact on corporate performance, governance standards and risk behaviour.

\textsuperscript{14} Merrill Lynch published a study in 2002 in which they estimated the impact of expensing the options schemes of all companies in the Dow Jones Industrial Index. They concluded that the average impact on the 2001 earnings of that group of companies would have been 7%. (Merrill Lynch, 2002.)

\textsuperscript{15} The sum of our expense (and expense reversal) estimates for our sample of companies between 1997 and 2004 is approximately AUD$6.3 Billion.
REFERENCES


