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**Determinants of the Use of Financial Reporting Standards  
by Australian Pension Plans**

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# **Determinants of the use of financial reporting standards by Australian pension plans**

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# **Determinants of the use of financial reporting standards by Australian pension plans**

## **Abstract**

Previous empirical research demonstrates that the voluntary disclosure of defined benefit pension plan (DBPP) information by employers is value-relevant to investors and carries potential proprietary costs. This paper extends these findings in the context of the voluntary use of financial reporting standards (FRS) in annual reports sent by pension plans to their participants. FRS use is predicted to be related to proprietary costs for defined benefit pension plans (DBPPs) and to political visibility for defined contribution pension plans (DCPPs). Tests on the voluntary reporting practices of samples of 54 Australian DCPPs and 54 DBPPs during 1991-92 support these predictions.

*Keywords:* pension plans, financial reporting standards

*Classification codes:* D82, G22, J41.

## **1. Introduction**

Scott (1994) examines the voluntary disclosure of defined benefit pension plan (DBPP) information by a sample of 288 Canadian firms in 1987. Consistent with the implications of Verrecchia's (1983) proprietary cost theory, he finds that its disclosure is mitigated by both proprietary cost and news favorableness effects. However Scott (1994) does not examine the proprietary cost implications of reporting equivalent financial information to pension plan participants by managers of either (i) DBPPs, or (ii) defined contribution funded pension plans (DCPPs).<sup>1</sup>

The contractual relationship between pension funds and their participants differs substantially from that between managers and shareholders of companies. First, in common with other types of financial intermediary, pension funds benefit from regular inflows of funds on a contractual basis and from long term liabilities (Brennan, 1993). Second, contractual rights and obligations between participants and the pension funds (e.g.: entry, exit and annual reporting) are subject to rigid pre-determined rules rather than determined by market forces (Fama and Jensen, 1983). Third, proprietary cost disclosure theory assumes that voluntary corporate disclosure is directed at professional investors, whereas equivalent information in pension plan annual financial reports is sent to a much larger and more diffuse set of individual participants. Pension plans are increasingly attracting world-wide attention by public policy makers in many countries as a means of facilitating retirement income savings by the ageing workforce (World Bank, 1994). However, previous research has not examined incentives facing pension plan managers to voluntarily disclose financial information which has potential proprietary cost or political visibility implications.

Pension plans are usually either defined benefit or defined contribution funded, which may significantly affect incentives for voluntary financial reporting. Scott (1994) notes that the disclosure of DBPP information provides a rich environment to study disclosure and proprietary cost effects because of evidence that this information is value-relevant and carries potential proprietary costs. By contrast, defined contribution pension plan (DCPP) information is not value-relevant to firms because it does not affect the funding and investment policies of the pension plans they sponsor (Bodie, 1990). DCPP disclosure incentives are posited to be influenced by their political visibility (Lim and McKinnon, 1993).

This study extends Scott's (1994) empirical study by developing testable hypotheses and empirical surrogates for the proprietary cost and political visibility implications of the voluntary use of financial reporting standards by Australian DBPPs and DCPPs during 1991-92. Results are consistent with Verrecchia's (1983) proprietary cost theory for DBPPs and the political visibility hypothesis for DCPPs.

The remaining sections of this paper are organized as follows. Section 2 reviews the theoretical antecedents and provides an overview of alternative financial reporting standards which were available to Australian pension plans in the period 1991-92. Section 3 develops proprietary cost and political visibility hypotheses. Section 4 discusses the sample and develops empirical proxies. Section 5 presents results and section 6 contains a summary and conclusion.

## **2. Theoretical Background and Institutional Setting**

### *2.1. Disclosure theories explaining voluntary financial reporting by pension plans*

Scott (1994) reviews the testable implications of Verrecchia's (1983) proprietary cost theory, in which the threshold level of disclosure is measured in the favorableness of news and is increasing in proprietary cost. These effects are offsetting, so that the incentive not to disclose is increasing in the size of proprietary costs, resulting in the disclosure of only more favorable news. Thus, the theory divides into two general hypotheses. First, the probability of disclosing information is negatively associated with the proprietary costs attached to the disclosure, *ceteris paribus*. Second, the probability of a firm disclosing information is positively associated with the favorableness of the news in the disclosure, *ceteris paribus*.<sup>2</sup>

Verrecchia's (1983) proprietary cost theory has testable implications for explaining voluntary disclosure incentives facing firms whenever information is value-relevant and proprietary costs are important. However it does not directly bear upon settings where equivalent disclosures are made by entities absent proprietary costs.<sup>3</sup> Lim and McKinnon (1993) examine voluntary disclosure practices of 50 commercial and semi-commercial statutory authorities in the Australian State of New South Wales in 1984. They hypothesize that, compared to authorities with low political visibility, authorities with high political visibility will voluntarily disclose more information of a 'non-sensitive nature', but will not disclose more information of a 'sensitive' nature. Their results are consistent with these hypothesized relations.

However Lim and McKinnon (1993) fail to define precisely what is meant by 'sensitive information disclosure' or describe its consequences, noting only that it is financial in nature and "attracts unfavorable attention and questions which may lead to the imposition of political costs". Indeed, they acknowledge that the distinction between 'sensitive' and 'non-sensitive' is not clear-cut (p. 203). By contrast, Verrecchia (1983) posits that a potential proprietary cost is any possible reduction in

future cash flows attributable to a disclosure and cites the example of a union's response to an announcement that a firm's fortunes had improved (p. 182).

## *2.2. An institutional setting for voluntary disclosure*

Financial reporting by Australian pension plans to their participants is a suitable institutional setting for testing these disclosure theories for four reasons. First, Cramer and Neyhart (1980) show that pension plan financial information is value-relevant to plan participants. Second, in Australia this information is not readily available elsewhere. There are no accounting standards in Australia which require employer sponsors to disclose pension asset and liability information.<sup>4</sup> Third, anecdotal evidence indicates that Australian pension plans faced a very high level of political scrutiny in the early 1990s (Klumpes 1994b). This has testable implications for political visibility influencing voluntary financial reporting by DCPPs to pension plan participants. Fourth, during 1991-92, as part of the development of these regulations, alternative financial reporting formats were available and at least some DCPP and DBPP managers were expected to face political or economic incentives to voluntarily use either of these options.<sup>5</sup> Although the regulatory environment has now changed, this earlier period allows for powerful tests of the relation between disclosure incentives and the use of alternative financial reporting standards.

As the social, economic and political significance of Australian pension plans increased in the late 1980s and early 1990s, the Australian pension plan industry developed 'best practice' guidelines for annual reporting to participants ('industry recommended guidelines', hereinafter 'IRG'). IRG recommended that pension plan managers prepare abbreviated financial reports which comprised only a summary

statement of the net assets available to pay pension benefits. Under IRG the present value of future accrued pension obligations payable to employee participants ('accrued benefit obligation', hereinafter 'ABO') is deemed an actuarial calculation only and hence is not required for inclusion in pension plan annual reports.

In 1990 the Australian Accounting Standards Board issued a uniform financial reporting standard applicable to both DCPPs and DBPPs (Australian Accounting Standard AAS 25 – 'Financial Reporting by Superannuation Plans', hereinafter 'FRS') which required all pension plans to disclose their ABO, thus revealing their periodic net surplus or deficiency. However the Australian pension industry actively lobbied against FRS on the grounds that the recognition of the ABO would only serve to 'confuse and mislead' participants, and that disclosing the net surplus or deficit would cause DBPPs to develop more conservative investment and funding policies.<sup>6</sup> The industry's views were later endorsed by the ISC, which issued regulations based on IRG that mandated the disclosure of abbreviated statements of net assets and changes in net assets in annual financial reports sent by DBPPs and DCPPs to their participants (Klumpes, 1994b). These regulations applied for reporting periods ending on or after 30 June 1993, the same date at which FRS became effective. Table 1 summarizes major differences between FRS and IRG.

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### **3. Development of hypotheses**

In this section, I make predictions about the relation between FRS use and voluntary incentives faced by managers of Australian pension plans. Australian FRS are unusual because they impose uniform financial reporting formats on both DBPPs

and DCPPs. This setting thus provides an opportunity to investigate factors affecting the decision to use a single set of financial reporting choices that are both independent of managers' other economic decisions for DCPPs and endogenous with the choice of financing and investment choices for DBPPs. DCPPs are by definition fully funded at any point in time, since their ABO always equals the fair market value of their net assets. The decision to use FRS is a 'cosmetic' one for DCPP managers.

### *3.1. Proprietary costs*

Scott (1994) empirically tests Verrecchia's (1983) proprietary cost theory in the setting of Canadian companies' election to incorporate additional disclosures regarding DBPPs into their financial statements. It is likely that similar incentives face DBPP managers in disclosing equivalent information to pension plan participants, since disclosures are made to employees and their union representatives.

A proprietary cost to DBPPs of using FRS is that the fund's net surplus or deficit, which may be sensitive to minor fluctuations in investment or funding policy, must be reported to pension plan participants. Unlike DCPPs, the ownership of pension plan surpluses or deficits is a contentious issue for DBPPs. Section 4 develops surrogates for proprietary costs using results of prior empirical studies which indicate that the presence of certain pension plan financial characteristics, such as underfunding, investment policy and expenses, reveals the presence of a proprietary cost - the cost of controlling the size of the pension plan surplus/deficit - which is then influential in setting a pension fund disclosure policy when a new disclosure rule presents itself. The proprietary costs hypothesis is stated as follows:

H1: *Ceteris paribus*, the probability of a DBPP (DCPP) using FRS is

negatively (not) associated with the proprietary costs attached to its ability to insure participants against retirement income risk.

### *3.2. Political Visibility Costs*

For DCPPs, using FRS may avoid public visibility associated with not fully informing participants about the full financial picture. During the period 1991-2, three separate politically-motivated public enquiries were conducted into the adequacy of pension plan accountability (Klumpes, 1994a). As is argued below, such issues are more likely to be significant for DCPPs, whose investment and financing policies are less susceptible to conflicting interests than for DBPPs. By contrast, anecdotal evidence suggests that DBPPs which voluntarily used FRS suffered unfavourable political attention and political costs due to a mis-understanding about its financial impact (Walker, 1991).

I hypothesize that DCPPs with high political visibility would more likely voluntarily use FRS than those with low visibility. However such trade-offs do not arise for DBPPs because the disclosure is of a proprietary nature, which mitigates any political visibility-related disclosure incentives. The political visibility hypothesis is:

H2: *Ceteris paribus*, the probability of a DCPP (DBPP) using FRS is

positively (not) related to its political visibility

## **4. The Sample and Development of Variables**

### *4.1. Sample Selection*

Accounting data was obtained by random selection of equal-sized DCPP and DBPP samples from the 1992 edition of *The Blue Book*, an annual professional publication listing names and contact addresses of many Australian pension plans. The final sample comprises 5% (or 54) of the Australian DCPP population, and an equal number of DBPPs, which prepared annual accounts in the period 1991 to 1992.

For the sample pension plans and for all Australian pension plans in 1991-92, table 2 reports a comparison of the mean size, expense and income ratios (as percentages of total assets). Both fund size and income for the sample DCPPs and DBPPs exceed those for the population, and the expense ratio is smaller. These findings are expected because larger pension plans tend to have higher income and lower expense ratios than smaller pension plans.

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INSERT TABLE 2 ABOUT HERE

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#### *4.2. Variable descriptions*

An ordinal disclosure variable is used. ‘*FRS*’ is a categorical variable which proxies for the level of FRS used. In each DCPP or DBPP sample, the dummy dependent variable indicates whether the pension plans use (=1) or do not use (=0) FRS in the study period.<sup>7</sup>

The first two independent variables, *FUNDR* and *INVRISK*, are intended to capture proprietary costs related to the pension plan’s ability to insure participants against various sources of retirement income risk (Bodie, 1990). According to the proprietary cost hypothesis, the probability of DBPPs using FRS decreases for those with relatively low funding ratios or with relatively non-liquid investments.

‘*FUNDR*’ is the pension plan’s funding ratio. It is measured as the relationship of total contributions received, plus gross investment returns, less total benefit payments over the year ended 30 June 1992, divided by total assets of the pension fund as at 30 June 1992. Poorly funded pension plans are more likely to be sponsored by highly leveraged and unprofitable employer firms (Bodie et al., 1987), and/or to be voluntarily terminated by the employer sponsor (Stone, 1987).

‘*INVRISK*’ is a proxy for the reputation-related risk that the pension plan’s investment portfolio might be invested inappropriately by the financial intermediary from the pension fund’s viewpoint (e.g.: investing non-liquid securities that cannot be used to fund current benefit payments). It measures the percentage of pension plan total assets that comprised classes of risky assets (eg: fixed interest securities, stocks, property), as at 30 June 1992, that are not available to fund benefit payments for the year ended 30 June 1992. Pension plans which invest in more risky assets are likely to be sponsored by less reputable employer firms (Bodie et al., 1987).

The association between political visibility and voluntary reporting by DCPPs implies that their disclosures are subject to political attention, allowing a test of the political visibility hypothesis. Both contracting and political game incentives provide potential motivations for politicians to impose political costs on DCPPs during the time period at issue. In private sector research, firm size has typically been used as the proxy for political visibility (Watts and Zimmerman 1990, pp. 139-140). The political visibility hypothesis states that the probability of FRS use is greater for large DCPPs which are more politically visible than small DCPPs.

‘*SIZE*’ is a proxy for political costs used by prior empirical accounting studies.. It measures the net market value of assets of a pension plan in A\$ million, as at 30 June 1992.

However although size has been found to be an important factor in explaining accounting policy choice, Lim and McKinnon (1993) caution against the unquestioning acceptance of firm size as a proxy for political visibility. Mindful of these points, in addition to the traditional size proxy, I also select a pension plan's expense ratio (*EXPENSE*) as a measure of the political visibility of DCPPs during the period 1991-92.<sup>6</sup> The political visibility hypothesis states that the probability of DCPPs voluntarily using FRS is negatively related to the expense ratio incurred. By contrast, Bodie (1990) notes that a DBPP's expense ratio is likely to be subsidized by the employer sponsor's payroll system. Consequently the expense ratio is unlikely to be less politically visible than for DCPPs.

'*EXPENSE*' is the pension plan's periodic expense ratio for the period 1991-92. It is measured as the sum of all operating expenses, excluding taxes, as a percentage of net assets of the pension plan as at the nearest reporting date.

## **5. Results for the Hypotheses on Proprietary Costs and Political Visibility**

Table 2 presents correlations among the independent variables and collinearity diagnostics (Belsley et al., 1980). All variance inflation factors and condition numbers are well below the suggested guide of 10, indicating that collinearity among these variables is not a problem. Relatively unfunded DBPPs tend to have relatively higher expense ratios. Remaining correlations between independent variables are generally low.

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INSERT TABLE 3 ABOUT HERE

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Table 4 presents the results of the logistic model using all variables. For DCPPs (Panel A), the results indicate that the political visibility hypothesis has significant explanatory power for DCPP disclosures. Both political visibility proxies are in the predicted direction and are highly significant and the overall model chi-squared statistic is highly significant. By contrast, none of the proprietary cost proxies are statistically significant for DCPPs, as predicted in the null hypothesis H1. For DBPPs (Panel B), both variables representing the proprietary cost hypothesis have the predicted signs and are statistically significant. The *SIZE* proxy for political visibility is insignificant, consistent with the null hypothesis H2. However contrary to predictions, the *COST* proxy is statistically significant. The overall model chi-square statistic is highly significant.

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INSERT TABLE 3 ABOUT HERE

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## **6. Summary and Conclusion**

The results support proprietary cost explanations for voluntary disclosure by DBPPs and political visibility explanations for voluntary disclosure by DCPPs. These results corroborate and extend those of Scott (1994), by examining incentives facing managers to disclose information to pension plan participants which is equivalent to that provided by employers to the sharemarket.

A limitation of this study is that the proprietary cost and political cost hypotheses may in fact be partially overlapping and that both attempt to capture elements of political visibility. This concern is reflected by the evidence that expense variable appears to be statistically significant for both DCPPs and DBPPs, suggesting

that it has both proprietary cost and political visibility implications. However this is mitigated by alternative empirical proxies which suggest that differentiable incentives for FRS use influence pension plan managers of these types of pension plan.

This study extends the literature that attempts to empirically examine proprietary and political visibility factors influencing managers' voluntary disclosure incentives. Future research is expected to develop methods and identify settings which allow further examination of these incentives.

## **Endnotes**

1. Defined benefit pension plans are those for which pension benefits are a function of a multiple of years of service, multiplied by a factor and by average final salary level. Defined contribution pension plans benefits are based on amounts contributed and investment income earned on the accumulated contributions only.
2. Scott (1994) tests both hypotheses in his study, but notes that news favorability can only be tested for disclosing firms, reducing the generalizability of the results. In this study, only the proprietary cost hypothesis is considered in order to distinguish between disclosure incentives facing managers of DCPPs and DBPPs.
3. Grossman (1981) and Milgrom (1981) investigate disclosure incentives in the special case where proprietary costs are absent.
4. Unlike Canada, the United Kingdom and the United States, there are currently no professional Australian accounting standards for the disclosure of pension plan information by employer sponsors.
5. Anderson and Sharpe, 1992, Klumpes, 1994 and Herbohn and Sharpe, 1994 survey the level of voluntary compliance with FRS by samples of DBPPs and DCPPs during the period 1991-92. The results of these studies generally find a lower level of voluntary compliance with FRS by DBPPs than for DCPPs.
6. Walker (1991) cites the example of a large DBPP which voluntarily disclosed its investments at market value in accordance with AAS 25, thus revealing both large write-downs in real estate investments and a large net deficit. Politicians erroneously charged that the pension plan was bankrupt.
7. Brennan (1995) finds evidence that the financial intermediary spread, or the difference between the rates of return on a mutual fund's portfolio and the amount made available to retail investors, can be economically significant. DCPPs are

similarly structured to mutual funds and are managed by financial intermediaries. During 1991-92, an Australian Parliamentary Committee of Inquiry publicly criticized the high level of expenses charged by DCPPs by certain financial intermediaries (Senate Select Committee of Inquiry, 1992).

8. Scott (1994) uses ordinal and categorical dependent variables in his empirical tests. Empirical tests are also conducted for three-level and two-level FRS use. The results are similar to those in Table 4 and thus are not reported separately.

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**Table 1**  
**Alternative Financial Reporting Standards Available to Australian Pension  
Plans in 1991/1992**

	Financial Reporting Standard (FRS)	Industry Recommended Guidelines (IRG)
Issuing authority	Australian Accounting Standards Board	Australian Pension Industry (endorsed by Insurance and Superannuation Commission)
Form of standard	Australian Accounting Standard AAS 25 (1990)	Schedule 8 to Occupational Superannuation Standard Regulations (1991)
Issue date	August 1990	June 1991
Effective date	Reporting periods on or after 30 June 1993	Reporting periods ending on or after 30 June 1993
Financial reports to be produced	Operating statement Statement of financial position Cash flow statement	Statement of net assets Statement of changes in net assets available to pay benefits

**Table 2**  
**Descriptive Statistics for Sample and Population of Australian Pension Plans<sup>a</sup>**

	Sample Mean <u>(A\$ million)</u>	Population Mean <u>(A\$ million)</u>
<i>Panel A: Defined Contribution Pension Plans</i>		
N	54	1,938
Size	79.1	21.5
Expenses	1.73	1.92
Income	7.61	7.36
<hr/>		
<i>Panel B: Defined Benefit Pension Plans</i>		
N	54	3,325
Size	283	34.7
Expenses	0.61	0.66
Income	4.32	3.87

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<sup>a</sup> The comparison is for the year 1991-92. The population is based on a census of all Australian pension funds conducted by the Insurance and Superannuation Commission (1993) in 1991-92.

**Table 3**  
**Collinearity Diagnostics and Correlations Among Explanatory Variables**

Collinearity Diagnostics				Pairwise Correlation Coefficients				
	Variance	Eigen-value	Condition number	<i>COST</i>	<i>SIZE</i>	<i>INVRTN</i>	<i>INVRISK</i>	<i>FUNDR</i>
<i>Panel A: Defined Contribution Pension Plans</i>								
<i>COST</i>	1.18	1.65	1.00	1.00	-	-	-	-
<i>SIZE</i>	1.17	1.50	1.05	0.04	1.00	-	-	-
<i>INVRTN</i>	1.07	0.85	1.39	-0.02	-0.03	1.00	-	-
<i>INVRISK</i>	1.08	0.65	1.59	0.14	-0.19 <sup>b</sup>	0.03	1.00	-
<i>FUNDR</i>	1.34	0.34	2.21	0.27 <sup>a</sup>	0.21 <sup>b</sup>	-0.31 <sup>a</sup>	-0.15	1.00
<i>Panel B: Defined Benefit Pension Plans</i>								
<i>COST</i>	1.34	1.44	1.00	1.00	-	-	-	-
<i>SIZE</i>	1.31	1.19	1.10	-0.32 <sup>b</sup>	1.00	-	-	-
<i>INVRTN</i>	1.06	1.14	1.13	0.05	0.07	1.00	-	-
<i>INVRISK</i>	1.16	0.78	1.36	-0.18 <sup>b</sup>	-0.11	0.04	1.00	-
<i>FUNDR</i>	1.06	0.44	1.80	0.06	-0.14	0.17 <sup>b</sup>	0.09	1.00

Table notes: Variables are as defined in table 3. a < 0.01, b < 0.05

**Table 4**  
**Logistic Model of Determinants of Use of Financial Reporting Standards by  
Australian Pension Plans**

*Panel A: Defined Contribution Pension Plans*

Number of Observations	=	54			
Dependent Variable	=	1, if plan uses FRS (n = 36)			
	=	0, otherwise (n = 18)			
			<i>SIZE</i>	<i>COST</i>	<i>INVRISK</i>
Intercept					<i>FUNDR</i>
Expected Sign	?	+	-	?	?
Coefficient	4.195	0.451	-0.587	-0.010	0.004
Std Error	1.470	0.228	0.205	0.012	0.016
Significance	0.004	0.048	0.004	0.405	0.803

Chi-Squared statistic: 16.18 (p = 0.003)

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*Panel B: Defined Benefit Pension Plans*

Number of Observations	=	54			
Dependent Variable	=	1, if plan uses FRS (n = 38)			
	=	0, otherwise (n = 16)			
			<i>SIZE</i>	<i>COST</i>	<i>INVRISK</i>
Intercept					<i>FUNDR</i>
Expected Sign	?	?	?	-	+
Coefficient	6.764	0.315	-2.284	-0.083	0.062
Std Error	3.747	0.269	1.161	0.040	0.036
Significance	0.071	0.242	0.049	0.035	0.083

Chi-Squared statistic: 16.92 (p = 0.002)