# INFLUENCES OF PROPRIETARY AND POLITICAL COSTS ON VOLUNTARY DISCLOSURE RELATING TO FINANCIAL INSTRUMENTS BEFORE AND AFTER MANDATORY REQUIREMENTS

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**Abstract**

The study examines whether the introduction of an accounting standard relating to the disclosure of financial instruments affects voluntary corporate disclosure, and the impact of proprietary and political costs on such disclosure decisions. Using the annual reports of 70 Australian listed companies over a period of 6 years giving 420 firm-year observations, this study investigates the comparative impacts of proprietary and political information costs on management's voluntary disclosure decisions relating to financial instruments. The regulatory disclosure environment, the impact of proprietary costs (proxy by a firm's investment growth opportunities) and political costs (proxy by a firm's probability of financial distress, size of a company and negative media attention) relating to the voluntary disclosure of financial instruments were investigated. Results of this study provide evidence that the mandatory disclosure of non-proprietary information relating to financial instruments has resulted in an increase in the voluntary disclosure of related proprietary information. For the effects of proprietary and political costs, findings from the study suggest that a firm's growth opportunities are significant in limiting voluntary disclosure of proprietary information in the period prior to regulation. Consistent with political cost hypothesis, legitimacy theory and media agenda-setting theory, the size of a company and high negative media attention are significantly positively related to voluntary corporate disclosure. However, financial distress has no effect on the voluntary disclosure of financial instruments-related information.

**Keywords:** Financial Instruments, voluntary disclosure, regulatory disclosure environment, proprietary cost, political cost

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## 1. Introduction

Various factors influence management's decision to voluntarily disclose information in their external financial reports. This study investigates whether a change in the regulatory disclosure environment relating to financial instruments and the impact of proprietary and political costs affect such disclosure decisions. Management may be willing to disclose non-proprietary information but they may be reluctant to disclose proprietary information, as the disclosure of such information will result in the company incurring proprietary costs. However, failure by such companies to voluntarily disclose information due to its proprietary nature may result in these companies incurring political costs. This study draws on signalling theory, legitimacy theory and media agenda setting theory to underpin explanations of the influence of proprietary and political costs on management's decision to voluntarily disclose information when there is a change in the regulatory environment. The aspect of the regulatory environment, which is of concern in this study is whether the introduction of mandatory disclosure requirements relating to financial instruments disclosure inhibits or enhances management's incentives to voluntary disclose additional information. To test the impact of proprietary costs, this study will use firms' investment growth opportunities to proxy for proprietary costs. To test the impact of political costs, a major global incident relating to a corporate failure, arising from the use of derivative financial instruments that received negative media coverage was studied, as this incident is likely to threaten the perceived legitimacy of other corporations and, in turn, increase the political costs that could result for these corporations. This study seeks to examine how these corporations respond to the perceived threat to their legitimacy resulting from such an incident, and whether the voluntary corporate disclosure decisions of managers are affected by the incident especially for companies that are politically visible and for companies that have a higher probability of facing financial distress.

## 2. Motivation for the Study

In the area of corporate financial reporting it is important to understand what motivates managers to voluntarily disclose corporate information to external stakeholders. Such an understanding will have important policy implications regarding the formulation and subsequent refinement of accounting standards. There has been relatively little empirical evidence to support the proprietary cost perspective. This research attempts to extend the proprietary cost perspective of voluntary disclosure by considering the effect of political costs on voluntary disclosure of financial instruments.

## 3. Literature Review and Generation of Hypotheses

### 3.1 Regulatory Environment and Voluntary Disclosure

The existing literature on the voluntary disclosing strategy of firms indicates that voluntary disclosures are influenced by the changes in mandatory disclosure requirements (Aggarwal & Simkins, 2004; Berkman et al., 1997; Chalmers, 2001; Chalmers & Godfrey, 2004; Chow et al., 1996; Dye, 1985, 1986; Gonedes, 1980; Nagarajan & Sridhar, 1996; Taylor & Redpath, 2000; Verrecchia, 1982). It is argued by Dye (1985), Gonedes (1980), Nagarajan & Sridhar (1996) and Verrecchia (1982) that as the mandatory reporting requirements become more detailed, voluntary disclosures may decline. However, according to Dye (1986) and Taylor & Redpath (2000), the mandatory disclosure of non-proprietary information would provide incentives for the voluntary disclosure of correlated proprietary information as the increase in the mandatory disclosure of non-proprietary information would reduce the benefits of withholding correlated proprietary information.

The issuance of an accounting standard on financial instruments disclosure imposed mandatory disclosure requirements on financial instruments, making such information non-proprietary. Drawing on Dye's (1986) model, it is expected that this will result in an increase in the voluntary disclosure of related proprietary information relating to financial instruments.

**H1**: An increase in the mandatory disclosure of non-proprietary information relevant to financial instruments increases the voluntary disclosure of related proprietary information.

Chalmers (2001) provides evidence that the quantity of voluntary derivatives disclosure made by firms progressively increases over the period leading to the introduction of the mandatory disclosure requirements, and that there is a significant increase in voluntary disclosure in the year when the mandatory disclosure requirements became effective. Chalmers & Godfrey (2004) and Taylor & Darus (2006) confirm these findings. The second hypothesis is to test the voluntary disclosure of financial-instruments related information in the period before the introduction of the standard, in order to investigate whether the likelihood of a proposed standard becoming mandatory has any effect on the voluntary disclosure of proprietary information related to non-mandatory disclosure items.

**H2**: The likelihood of a proposed standard relating to financial instruments becoming mandatory increases the voluntary disclosure of proprietary information related to non-mandatory disclosure items.

### 3.2 Signalling Theory, Proprietary Costs and Voluntary Disclosure

The standard on financial instruments disclosure set minimum disclosure requirements in terms of types of information that need to be disclosed about financial statements, while allowing considerable discretion in the amount of detail to be given about particular financial instruments. Where accounting standards allow such flexibility in details of disclosure, high quality firms might be expected to use the opportunity to provide 'fine' information signals to reveal their type of quality. The decision to withhold or release additional information to signal the firm's type of quality however may be influenced by the extent of proprietary costs that would be incurred as a result of the disclosure. Proprietary information is defined as 'information whose disclosure potentially reduces the present value of cash flows of the firm endowed with the information' (Dye, 1986). The disclosure of proprietary information will reveal proprietary information which will not only benefit user groups such as shareholders but also competitors who can act on the information disclosed to the competitive disadvantage of the disclosing firms (Darrough & Stoughton, 1990; Feltham & Xie, 1992; Harris, 1998; Hayes & Lundholm, 1996; Kelly, 1994; Newman & Sansing, 1993; Verrecchia, 1983; Wagenhofer, 1990). Wagenhofer (1990) argues that the disclosing firm with private information will incur proprietary costs either in the form of lost profits because of the strategic action taken by an opponent or in the form of political costs imposed by regulators, trade unions or adverse media reports.

### 3.3 Hypothesis about Proprietary Cost Using Investment Growth Opportunities

The independent variable, investment growth opportunities are of a nature that contains high proprietary information. Investment growth opportunities are use to proxy for proprietary costs. Companies with investment growth opportunities have the characteristics of having proprietary information and indicate the presence of proprietary

costs, which will influence firms' voluntary disclosure policy.

The evidence from prior studies of the hypothesised inverse relationship between firms' investment growth opportunities and the dependent variable is conflicting (i.e. Bamber & Cheon, 1998 and Harris, 1998 find an inverse relationship, but Taylor & Redpath, 2000, find a positive relationship).

**H3**: The higher the investment growth opportunities, the lower will be the voluntary disclosure of proprietary information relevant to financial instruments.

### 3.4 Legitimacy Theory, Media Agenda Setting Theory, Political Cost and Voluntary Disclosure

In this study, the strategic approach to legitimacy theory is adopted in explaining managers' decisions to voluntarily disclose information in their annual reports in order to avoid incurring political costs. The strategic approach assumes that managers have a high level of managerial control over their organization's legitimation process, and that legitimation is purposive, calculated, and frequently oppositional (Suchman, 1995). Thus, the voluntary corporate disclosure of financial instruments-related information by management in their annual reports is viewed as a strategy adopted by management in order to remain legitimate and to reduce the impact of political costs.

'Political costs are wealth re-distributions away from the entity to the government and other sectors of the economy' (Whittred & Zimmer 1990, p. 32-33). The extent to which an entity fails to report accounting numbers and related disclosures can affect whether it is criticized or supported by members of the public (e.g. consumers, employees, environmental groups) and whether such public scrutiny results in impositions of regulations or taxes by governments aimed at the entity (Lemon & Cahan, 1997). Holthausen & Leftwich (1983) argue that a firm's political visibility is affected by its reported accounting numbers as accounting numbers are used by parties such as consumers or politicians as a basis for them to criticize or support these firms. Empirical evidence on the political cost hypothesis confirms that a firm's political visibility influences its voluntary disclosure practices (Aggarwal & Simkins, 2004; Belkaoui & Karpik, 1989; Deegan & Caroll, 1993; Deegan & Hallam, 1991; Hutchings & Taylor, 2000; Lemon & Cahan, 1997; Lim & McKinnon, 1993; Patten & Trompeter, 2003; Taylor & Redpath, 2000). Another component of legitimacy relates to the extent to which corporate practices receive media attention. A case in point was the rapid pace of growth in the use of financial instruments by companies in the late 1990s, especially in the use of derivative instruments, coupled with corporate failures because of the misuse of derivatives. The extensive media coverage given to corporate failures that had involved speculative hedging activities changed public perceptions. Under the media agenda setting theory, the extensive media coverage of an incident has the ability to influence or shape community perceptions about a particular issue. The constant emphasizing of the issue by the media has an effect of leading the audience to think more about an issue, thereby making the issue more salient (Gross & Aday, 2003). In addition, the influence of the media on community perceptions is greater if the issues highlighted by the media are unfavourable or negative issues (Dearing & Rogers, 1996; Hutchings & Taylor, 2000; Deegan et al., 2002; Deegan et al., 2000; O'Donovan, 1999; Brown & Deegan, 1998).

### 3.5 Hypotheses about Political Cost Using the Probability of Firms Facing Financial Distress, Size of Company and Negative Media Attention

The impact of political costs on management's voluntary disclosure decision is tested in a set of hypotheses by using the probability of firms facing financial distress, size of company, and negative media attention to measure the effects of political costs on the voluntary disclosure of information. Political costs of non-disclosure can arise when firms are coming closer to breaching debt covenants. Management that voluntarily provides greater financial disclosure to debt holders when the company approaches financial distress is more likely to avoid political costs of imposition of greater monitoring devices or even replacement with new management. Prior empirical evidence relating to the influence of financing conditions of firms on the extent of voluntary disclosure is mixed (Ahmad et al., 2003; Ahmed & Nicholls, 1994; Chalmers & Godfrey, 2004; Chow & Wong-Boren, 1987; Cormier & Magnan, 2003; Malone et al., 1993; Mitchell et al., 1995; Myers, 1977; Taylor & Redpath, 2000).

In this study, companies with a higher probability of facing financial distress are expected to voluntarily disclose more information to reduce the effects of political and monitoring costs, and to avoid debt covenants from becoming binding.

**H4**: The higher the probability that a company is in financial distress, the greater will be its voluntary disclosure of information relevant to financial instruments.

Prior empirical evidence also confirms the positive association between size and political costs (Aggarwal & Simkins, 2004; Belkaoui & Karpik, 1989; Cormier & Magnan, 2003; Cullen & Christopher, 2002; Deegan & Hallam, 1991; Hutchings & Taylor, 2000; Skinner, 1993; Taylor & Redpath, 2000; Wong, 1988). Since the degree of political costs is associated with the size of the company, therefore the size of the company will influence management's decision to voluntarily disclose information in order to avoid incurring

political costs. Larger companies will have a greater need to mitigate political costs than smaller companies.

**H5**: The larger a company's size, the greater will be its voluntary disclosure of information relevant to financial instruments.

With advancement in information technology, the media is able to exert its influence on public issues not only locally but also globally (Deegan et al., 2000). Therefore, the effect of media attention is global. A major corporate disaster will become known throughout the world, and may lead society within another country to react to the incident by demanding greater disclosure. In this study, the effect of negative media attention on the voluntary disclosure of financial instruments-related information is investigated amongst companies in Australia, even though the incident that resulted in the negative media attention did not take place in Australia. This was done through the investigation of a high profile incident involving the collapse of Barings Bank in 1995. This incident was chosen because of its prominence, wide negative media coverage, and the date of the occurrence of the event. The event took place a few years prior to the year in which the standard on financial instrument disclosure became mandatory in 1998.

The wide negative media coverage following the incident is expected to pose a threat to the legitimacy of other corporations using financial instruments. The management of companies using derivatives can be expected to react to the adverse media coverage by using corporate disclosures as a strategy to alleviate the potentially adverse effects caused by the negative media coverage. Since prior studies are in agreement that the print media is the most effective means of changing the public's perception (Bogart, 1984; Mc Combs, 1981; McCombs & Shaw, 1994; Mutz & Soss, 1997; Stempel & Hargrove, 1996), this study will investigate the effect of negative print media coverage on the voluntary disclosure of information relating to financial instruments.

**H6a**: The extent of change in unfavourable print media attention about corporate use of financial instruments (during the period from the collapse of Barings Bank and the adoption of AASB 1033) is positively related to the change in company voluntary disclosure of information relevant to financial instruments.

However, the anticipated introduction of the mandatory disclosure requirements is expected to have a moderating effect on the relationship between negative media attention and the voluntary disclosure of information relevant to financial instruments. It is expected that as the anticipated mandatory disclosure increases (probably driven by media attention), the positive relationship between negative media attention and the voluntary disclosure of financial instrument-related information will decline.

**H6b:** When anticipated introduction of mandatory disclosure requirements increases, the positive relationship between print media attention and the voluntary disclosure of information relevant to financial instruments will be reduced.

## 4. Methodology

### 4.1 Sample of Companies

To test the hypotheses, publicly available company data was collected. A sample size of 70 companies over a six-year period from 1 January 1995 to 31 December 2000 resulting in 420 firm year observations were sourced from *Connect 4*, a corporate financial database in Australia. The six-year window period enables an examination of the trends in the disclosure practices on financial instruments of public listed companies in Australia from an unregulated environment (1995 – 1997) to a regulated environment (1998 – 2000). A stratified sampling method was used in which a balance of companies was randomly chosen across selected industries. The sample firms were drawn from four industries: *Energy, Materials, Industrials*, *and Consumer Staples*. These four industries were selected as companies in these industries are regarded as being more likely to use financial instruments, especially derivative instruments, to finance their operations and to transact their businesses. Consistent with other studies on financial derivatives, (Aggarwal & Simkins, 2004; Berkman et al., 2002; Chalmers & Godfrey, 2004; Nguyen & Faff, 2002) firms belonging to the *Banking and Finance* industry were excluded from the sample due to the specific nature of their business. This is because firms in the *Banking and Finance* industry trade and hold financial derivatives, both as hedges and as traders and dealers.

### 4.2 Empirical Schema

The relationships developed in the seven hypotheses can be depicted in an empirical schema as given in Figure 1. The dependent variable (VDISC) is an unweighted index that measures the extent of voluntary disclosure relating to financial instruments. Basically, the data for this study is collected through content analysis of companies' annual reports. The number of lines relating to financial instruments disclosure was chosen as the unit of measurement. The number of lines was chosen, as the disclosures relating to financial instruments can comprise both textual and tabulated information.

**Figure 1.** Empirical Schema of Factors Affecting the Voluntary Corporate Disclosure of Information Concerning Financial Instruments

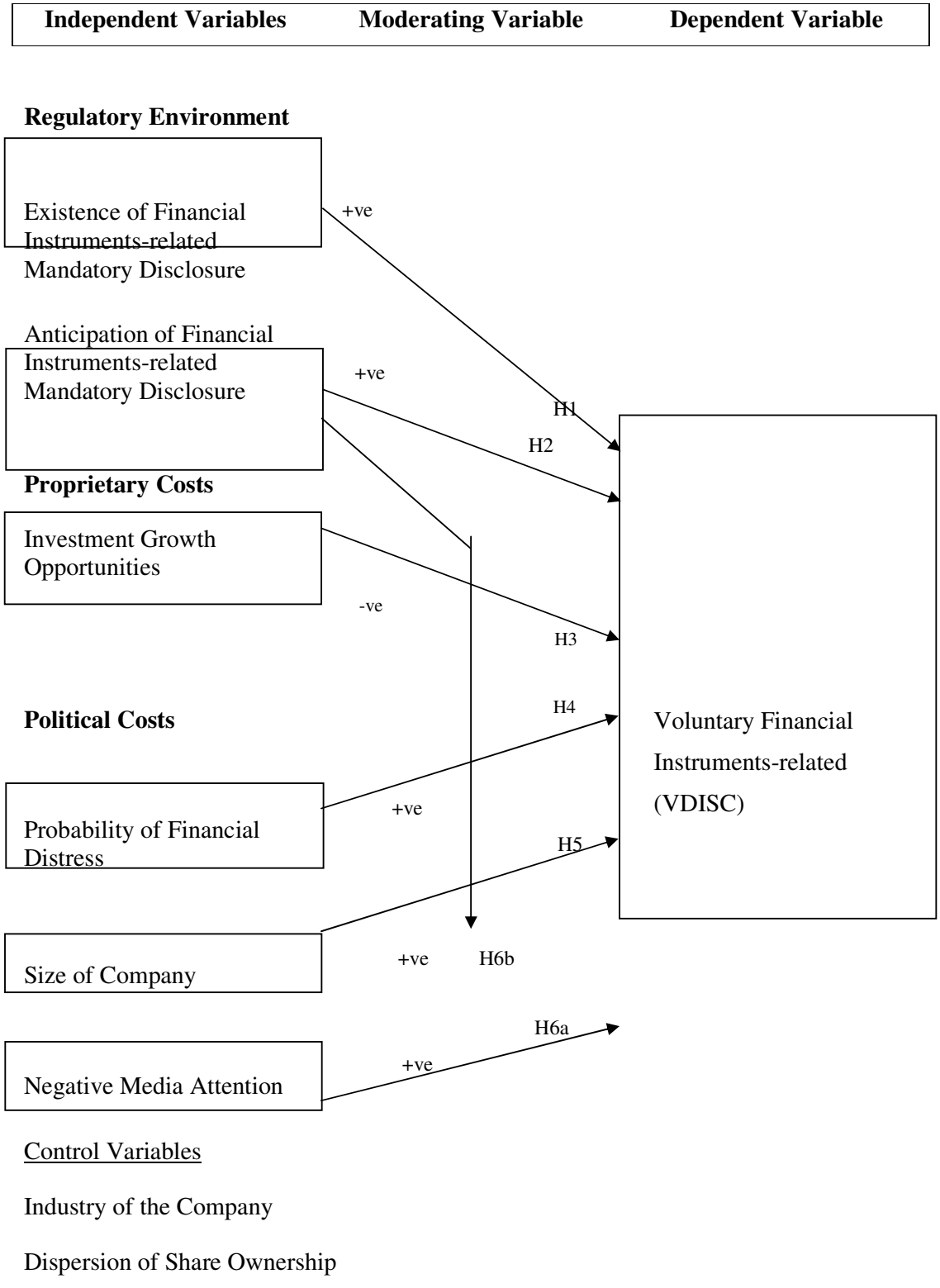

**Table 1.** Summary of the Variables, their Measurements and Sources

| **Variables** | **Measures** |
|---|---|
| **Dependent variable**<br>• $VDISC_i$ (voluntary disclosure index for company i) | $\sum_{c=1-5} [\sum_{v=1-n} (l_{vci}/X_{vci})*T_{vc}]$<br>$c_{=1-5}$ = number of voluntary disclosure category<br>$l_{vci}$ = number of lines of disclosure per voluntary items (v) in an information category (c) for company i<br>$X_{vci}$ = applicable voluntary items (v) in an information category (c) for company i<br>$T_{vc}$ = total possible voluntary items (v) in an information category (c) |
| **Independent variables**<br><br>**Mandatory Disclosure**<br>• $MDISC_i$ (mandatory disclosure index for company i) | $\sum_{m=1-7} (l_{mi}/X_{mi})*T_m$<br>$m_{=1-7}$ = number of mandatory disclosure items<br>$l_{mi}$ = number of lines of disclosure per mandatory items (m) for company i<br>$X_{mi}$ = applicable mandatory items (m) for company i<br>$T_m$ = total possible mandatory items (m) |

| | |
|---|---|
| **Proprietary Costs** | |
| **GROWTH** | |
| • MKT/ VA | [(Total assets – Total common equity) + Shares outstanding x Share closing price] /Total Assets (Hutchinson & Gul, 2003) |
| • MKT/VE | (Shares outstanding x Share closing price)/Total common equity (Hutchinson & Gul, 2003) |
| • PPE/MV | Gross property, plant and equipment/ (Market value of the firm + Non-current liabilities) (Hutchinson & Gul, 2003) |
| **Variables** | **Measures** |
| **Political Costs** | |
| **DISTRESS** | |
| • $IR_{it}$ | $X_{it}/X_{igt}$<br>where<br>$IR_{it}$ = industry relative for ratio $i$ in period $t$<br>$X_i$ = ratio $i$,<br>$g$ = industry $g$,<br>$t$ = year $t$ and<br>$X_{igt}$ = industy $g$'s median for ratio $i$ in period $t$ |
| • Z-score | $Z = (a_0 + a_1 X_1 + a_2 X_2 + a_3 X_3 + a_4 X_4 + a_5 X_5)$(Izan, 1984) |
| $X_1$ (Profitability measure) | EBIT/Total assets |
| $X_2$ (Interest coverage) | EBIT/interest expense |
| $X_3$ (Liquidity ratio) | Current assets/Current liabilities |
| $X_4$ (Leverage measure) | Long term + Short term debts/Common shareholders equity |
| $X_5$ (Relationship between market value of common equity compared with total liabilities) | Market value of common equity/Total liabilities |
| **SIZE** | Natural log of market capitalization (Chalmers & Godfrey, 2000; Bozzolan et al., 2003; Mohebbi et al., 2005) |
| **MEDIA** | Number of relevant articles in the Australian print media during the year (Deegan et al., 2002) |
| **OWNERSHIP STRUCTURE** | Number of shares held by the top 20 shareholders as a proportion of the total number of shares issued (Chalmers & Godfrey, 2004) |
| **INDUSTRY** | Nominal data classified by each industry group |

Therefore, to standardize the measurement basis for both types of disclosure the number of lines relating to such information was counted to measure the extent of disclosure relating to financial instruments. The total number of lines of mandatory and voluntary disclosures made by a firm is then translated into an index by dividing this score by the total applicable items. In addition to the identified independent variables, this study also includes industry of the company and dispersion of share ownership as control variables. Various databases such as Connect 4, Thomson One, Bloomberg and LexisNexis were used to source data for the study. A summary of the variables, their measurement and sources are listed in Table 1.

## 5. Analysis and Results

### 5.1 Descriptive Statistics

Table 2 presents the description of the aggregate disclosure of mandatory and voluntary items relating to financial instruments for 1995–2000. Of the five voluntary disclosure categories investigated, the voluntary disclosure index for Management Discussion and Analysis has the lowest overall mean (only 0.56 lines). The extent of voluntary disclosure is found to be greater for general information about strategies and policies relating to financial instruments and lesser for specific information about quantifiable historical trends and key indicators. Likewise, projections or forecasts relating to broader corporate financial information are found to be a substantially higher category of voluntary disclosure than management discussion and analysis of prospective market changes and their specific financial impacts relating to financial instruments. General information receives higher voluntary disclosure than specific information.

**Table 2.** Description of Aggregate Disclosure of Mandatory and Voluntary Items Relating to Financial Instruments for 1995 – 2000

| | Frequencies Distribution (number of lines disclosed) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Percentiles | | | | | | |
| Disclosure Items | N | 25 | 50 | 75 | Overall Mean | Min | Max | Std Dev |
| **Mandatory Disclosure Index (MDISC)** | 420 | 23.33 | 76.00 | 127.50 | 87.54 | 0 | 426 | 80.558 |
| **Voluntary Disclosure Items** | | | | | | | | |
| **Voluntary Disclosure Index for Risk Management** | 420 | 4.00 | 9.00 | 17.00 | 12.64 | 0 | 86 | 13.13 |
| **Voluntary Disclosure Index for Historical Information** | 420 | 0.00 | 1.17 | 4.67 | 3.90 | 0 | 91 | 7.675 |
| **Voluntary Disclosure Index for Key Information** | 420 | 2.00 | 5.00 | 9.00 | 7.59 | 0 | 76 | 9.38 |
| **Voluntary Disclosure Index for Projected Information** | 420 | 3.00 | 7.00 | 15.00 | 11.10 | 0 | 97 | 13.60 |
| **Voluntary Disclosure Index for Mgt Discussion and Analysis** | 420 | 0.00 | 0.00 | 0.00 | 0.56 | 0 | 10 | 1.540 |
| **Voluntary Disclosure Index (VDISC)** | 420 | 15.17 | 28.08 | 47.79 | 35.78 | 0 | 219 | 29.99 |

A comparison of means by year for the mandatory and voluntary disclosure items is presented in Table 3. A one-way ANOVA is carried out to analyse the variance between the groups over the 6-year period and an F-ratio is calculated. Table 3 indicates that for the Mandatory Disclosure Items, there is a significant increase in the mean for MDISC over the 6-year period. The large F-ratio of 44.837 for MDISC indicates that there is variability between the years. As expected, the greatest jump in mandatory disclosure items occurred between 1997 and 1998, the years before and after AASB 1033 became effective. Interestingly, the extent of MDISC continued to increase during the post-regulatory period of 1998-2000, although the requirements in AASB 1033 did not change. For the Voluntary Disclosure Items, there is a significant increase in VDISC (F-value of 4.816). The voluntary disclosure index for Risk Management shows a significant increase in the means over the 6 years. Interestingly, there is no significant decrease in

any items of voluntary disclosure over the 6-year period despite the fact that mandatory items of disclosure came into force in this period. The introduction of a disclosure standard, AASB 1033, has not diminished the extent of voluntary disclosure of related information.

**Table 3.** Disclosure Items: Comparison of Means by Year

| Disclosure Items | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | F-value | Sig |
|---|---|---|---|---|---|---|---|---|
| | Number of lines of disclosure | | | | | | | |
| **Mandatory Disclosure Items** | | | | | | | | |
| **MDISC** | 30.06 | 31.99 | 61.99 | 122.56 | 136.80 | 141.85 | 44.837 | 0.000** |
| **Voluntary Disclosure Items** | | | | | | | | |
| **Voluntary Disclosure Index for Risk Management** | 5.32 | 9.85 | 12.86 | 15.78 | 16.14 | 15.87 | 8.294 | 0.000** |
| **Voluntary Disclosure Index for Historical Information** | 2.75 | 2.80 | 3.35 | 5.12 | 4.94 | 4.43 | 1.358 | 0.239 |
| **Voluntary Disclosure Index for Key Information** | 5.18 | 5.36 | 5.36 | 6.53 | 7.18 | 6.94 | 0.874 | 0.498 |
| **Voluntary Disclosure Index for Projected Information** | 10.04 | 9.74 | 9.20 | 9.94 | 13.86 | 13.81 | 1.746 | 0.123 |
| **Voluntary Disclosure Index for Management Discussion and Analysis** | 0.66 | 0.80 | 0.44 | 0.44 | 0.61 | 0.40 | 0.724 | 0.606 |
| **VDISC** | 25.27 | 29.94 | 32.60 | 39.38 | 44.44 | 43.08 | 4.816 | 0.000** |

** Significant at the 0.01 level

As investment opportunities can take alternative forms, similar to Gaver & Gaver (1993) and Hutchinson & Gul (2003) factor analysis was used to reduce the variety of observable variables to a single factor. Table 4 presents the results of the common factor analysis. GROWTH is positively and significantly correlated with MKT/VA and MKT/VE and negatively correlated to PPE/MV, indicating that GROWTH captures the underlying construct of the three proxies.

**Table 4.** Common Factor Analysis of the Three Price-based Proxies for Investment Growth Opportunities

| | MKT/VA | MKT/VE | PPE/MV |
|---|---|---|---|
| Panel A: Estimated communality of the three price-based proxies for investment growth opportunities | 0.596 | 0.072 | 0.621 |
| Panel B: Eigenvalues | 0.772 | 0.269 | 0.788 |
| Panel C: Correlations between common factor (GROWTH) and the three price-poxies for investment growth opportunities | 0.772** | 0.269** | -0.788** |
| Panel D: Descriptive statistics of the common factor – (GROWTH ) | | | |
| Mean | 1.5611 | | |
| Maximum | 141.94 | | |
| Minimum | -87.30 | | |

** Correlation is significant at the 0.01 level (2-tailed)

Table 5 presents the means for the growth factor (GROWTH) for the period of study. Table 5 indicates that there is a significant difference between the means for the 6-year period for the growth component PPE/MV and GROWTH. The GROWTH variable, however, shows no particular trend pattern of change. There is no significant difference in the means for the other components of growth. Thus, the mean

conditions of proprietariness of information disclosure for all firms in the sample, namely investment growth opportunities, have not trended in any identifiable direction over the 6-year period.

**Table 5.** Growth Components: Comparison of Means by Year

| Growth and Hedging Components | N | Means | | | | | | F-value | Sig |
|---|---|---|---|---|---|---|---|---|---|
| | | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | | |
| MKT/VA | 404 | 2.0294 | 2.3075 | 1.8402 | 1.4744 | 1.5297 | 1.4830 | 1.812 | 0.109 |
| MKT/VE | 404 | 0.9193 | 2.9089 | 2.8534 | 4.0879 | 0.7392 | 1.3202 | 1.411 | 0.219 |
| PPE//MV | 404 | 0.5861 | 0.5874 | 0.6325 | 0.8350 | 0.8824 | 1.0908 | 3.880 | 0.002** |
| GROWTH | 403 | 0.1734 | 0.2997 | 0.1332 | -0.0871 | -0.1801 | -0.3283 | 3.987 | 0.002** |

** Significant at the 0.01 level

The independent variable, probability of financial distress, reflects a firm's condition of political cost of non-disclosure. The probability of the sample firms facing financial distress for the period of study is presented in Table 6. The Z-score indicates that for 1995, 12 of the sample companies have more than 50% probability of being classified as failed, while 54 have less than 50% probability of being classified as failed. The highest number of companies that have more than 50% probability of being classified as failed is in 1997, where 17 of the companies have more than 50% probability of being classified as failed while 49 have less than 50% probability of being classified as failed. Thus, there are a sufficient proportion of firms in each year of the sample that face more than 50% probability of financial distress, enabling this variable to be tested as a political cost-based determinant of the extent of disclosure of financial instrument-related information.

**Table 6.** Probability of Financial Distress: Comparison of Number of Companies by Year

| Probability of Financial Distress | Number of Companies | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1995 | | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | | Total | |
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| Predict Continuation (Z >0) | 54 | 17 | 56 | 17.7 | 49 | 15.5 | 52 | 16.4 | 53 | 16.7 | 53 | 16.7 | 317 | 100 |
| Predict Failure (Z<=0) | 12 | 15 | 9 | 11.3 | 17 | 21.3 | 13 | 16.3 | 15 | 18.8 | 14 | 17.5 | 80 | 100 |

A second condition affecting the political cost of non-disclosure is media attention. Table 7 presents the number of newspaper articles covering the collapse of Barings Bank for the period of study from 3 different sources, World News, Asia Pacific Sources and from Australian newspapers. There was an extensive coverage of the incident in the media in 1995, the year of the incident, and in 1996. These 2 years of 1995 and 1996 embody a much greater political cost on a firm's decision not to disclose, than the subsequent years due to media attention.

**Table 7.** Media Attention: Comparison of Number of Media Articles by Year

| Sources | Number of media articles | | | | | |
|---|---|---|---|---|---|---|
| | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
| World news | 540 | 66 | 22 | 21 | 29 | 8 |
| Asia Pacific | 195 | 25 | 6 | 9 | 11 | 0 |
| Australia | 85 | 11 | 1 | 1 | 1 | 0 |

## 5.2 Multivariate Analysis

Panel data analysis (fixed effect model) is used to analyse the data in this study as the data set contains both cross-sectional and a time series dimension. The Hausman (1978) test was performed to confirm the use of the fixed effect model. The following econometric model was used in this study to analyse the effect of regulation, proprietary and political costs on the disclosure of financial instruments related information. Letting $_i$ denote the cross-sectional unit and $_t$ time period, the econometric model is specified as follows:

$$VDISC_{it} = \beta_0 + \delta_0 y19982000 + \beta_1 MDISC_{it} + \delta_1 y19982000.MDISC_{it} + \beta_2 GROWTH_{it} + \delta_2 y19982000.GROWTH_{it} + \beta_3 SIZE_{it} + \delta_3 y19982000.SIZE_{it} + \beta_4 DISTRESS_{it} + \delta_4 y19982000.DISTRESS_{it} + \beta_5 MEDIA_t + \beta_6 (MEDIA_t \text{ X } MDISC_{it}) + \beta_7 OWNER_{it} + \delta_7 19982000.OWNER_{it} + \beta_8 INDUST_i + \delta_8 19982000.INDUST_i + a_i + e_{it}$$

where:

$VDISC_{it}$ is the unweighted voluntary disclosure index relating to financial instruments of firms.

$MDISC_{it}$ is the mandatory disclosure index relating to mandatory disclosure of information.
$GROWTH_{it}$ is the firms' investment growth opportunities.
$SIZE_{it}$ is the size of firms
$DISTRESS_{it}$ is the probability of the firms facing financial distress
$MEDIA_t$ is the negative media attention relating to financial instruments
($MEDIA_t$ X $MDISC_{it}$) measures the moderating effect of mandatory disclosure items on negative media attention
$OWNER_{it}$ is the percentage of shares held by the top 20 shareholders.
$INDUST_i$ is the industry of the sample firms.
$a_i$ represents the unobserved time-invariant effect and
$e_{it}$ is the idiosyncratic error or time-varying error.

Since the study is investigating the effects of proprietary and political costs on voluntary disclosure of financial instruments-related information in the context of both the regulated and unregulated environment, a dummy variable was used to separate the 6-year period into pre- and post-regulation years. As the mandatory disclosure requirements for financial instruments became effective in 1998, the 3 years prior to 1998 (i.e. the years 1995, 1996 and 1997) were chosen as the base period. Thus, the variable y19982000 in the regression equation is a dummy variable equal to 1 if the observations are for the years 1998, 1999 and 2000, and zero if they are for the years 1995, 1996 and 1997. The period dummy variable is also interacted with the independent variables to enable the identification of whether the effects of the independent variables on the dependent variable have changed from the unregulated to the regulated environment. Before undertaking the multiple regression analysis, a test for the presence of multicollinearity amongst the independent variables was performed and found to be well within the satisfactory range.

Table 8 presents the results of the regression analysis. The results indicate that the F-statistic for the model is 20.76723 and the p-value is significant, and with an adjusted R-squared of 0.802521 the overall model has strong explanatory power. The Durbin-Watson statistic of 1.515151 indicates that there is no strong evidence of first-order serial correlation in the regression results. Initial regression results indicated that industry effects for Energy, Materials and Consumer Staples were not significant and were thus omitted from the final regression results.

For mandatory disclosure, the coefficients for the pre-regulation period (MDISC) and the change (MDISCy19982000) are significant, therefore, MDISC is also significant for the post-regulation period. GROWTH is significant in the pre-regulation period but the change (GROWTHy19982000) is not in the predicted direction and not significant. Likewise, DISTRESS is not significant in the base period and the change is not in the predicted direction and also not significant. SIZE has the predicted sign and is significant in the base period but the change from the pre- to the post-regulation period is not significant. MEDIA and the moderating effect of the anticipated introduction of mandatory disclosure on media (MEDIA x MDISC) are significant. As for OWNER, only the change is significant. Therefore, to determine whether the coefficients generated from the regression analysis are significant for the post-period a Wald coefficient restrictions test was performed for the variables SIZE and OWNER. Results from Table 9 indicate that for variables SIZE and OWNER their p-values are significant. Therefore, for SIZE and OWNER, the coefficients are jointly statistically significant for the post-regulation period.

**Table 8.** Fixed Effects Model: Effects of Regulation, Proprietary and Political Costs on Management's Voluntary Disclosure

Dependent Variable: VDISC
Method: Panel Least Squares
Sample: 1995 2000
Cross-sections included: 69
Total panel (unbalanced) observations: 395
White cross-section standard errors & covariance (d.f. corrected)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. (2-tailed) | Prob. (1-tailed) |
|---|---|---|---|---|---|
| C | 8.520198 | 14.56526 | 0.584967 | 0.5590 | - |
| MDISC | 0.043220 | 0.018827 | 2.295588 | 0.0224 | 0.0112 |
| MDISCy19982000 | 0.090263 | 0.013985 | 6.454376 | 0.0000 | 0.0000 |
| GROWTH | -6.143267 | 1.588941 | -3.866264 | 0.0001 | 0.0000 |
| GROWTHy19982000 | 5.496783 | 1.830465 | 3.002943 | 0.0029 | 0.9986 |

| | | | | | |
|---|---|---|---|---|---|
| DISTRESS | 0.000189 | 0.001756 | 0.107488 | 0.9145 | 0.4573 |
| DISTRESSy19982000 | -0.012322 | 0.004135 | -2.979957 | 0.0031 | 0.9985 |
| SIZE | 5.042320 | 1.306465 | 3.859513 | 0.0001 | 0.0000 |
| SIZEy19982000 | 0.695261 | 0.543433 | 1.279388 | 0.2017 | 0.1009 |
| MEDIA | 0.024700 | 0.008963 | 2.755826 | 0.0062 | 0.0031 |
| (MEDIA X MDISC) | -0.002506 | 0.000341 | -7.353283 | 0.0000 | 0.0000 |
| OWNER | -0.123132 | 0.112573 | -1.093800 | 0.2749 | - |
| OWNERy19982000 | -0.127751 | 0.057577 | -2.218803 | 0.0272 | - |
| INDUSTEy19982000 | 16.57963 | 3.649626 | 4.542829 | 0.0000 | - |

Effects Specification

Cross-section fixed (dummy variables)

| | | | |
|---|---|---|---|
| R-squared | 0.843119 | Mean dependent var | 34.18003 |
| Adjusted R-squared | 0.802521 | S.D. dependent var | 29.61724 |
| S.E. of regression | 13.16150 | Akaike info criterion | 8.174976 |
| Sum squared resid | 54219.44 | Schwarz criterion | 9.000972 |
| Log likelihood | -1532.558 | F-statistic | 20.76723 |
| Durbin-Watson stat | 1.515151 | Prob(F-statistic) | 0.000000 |

**Table 9.** Results of Wald Coefficient Restrictions Test

Wald Test: Test of coefficients
SIZE + SIZEy19982000 = 0

| Test Statistic | Value | df | Probability |
|---|---|---|---|
| F-statistic | 19.38359 | (1, 313) | 0.0000 |
| Chi-square | 19.38359 | 1 | 0.0000 |

Null Hypothesis Summary:

| Normalized Restriction (= 0) | Value | Std. Err. |
|---|---|---|
| C(8) + C(9) | 5.737581 | 1.303202 |

Restrictions are linear in coefficients.

The anticipation of having to disclose information relating to financial instruments and the actual disclosure of mandatory items has resulted in companies increasing their voluntary disclosure of information relating to financial instruments. In the pre-regulation period certain types of firms are willing to disclose information to signal their higher quality type. However, firms with more proprietary information (growth firms) are not willing to disclose more information in the pre-regulation period to signal their higher quality type for fear of incurring proprietary costs. In fact, growth companies voluntarily disclose less information relating to financial instruments in the pre-regulation period. The influence of size of companies on voluntary disclosure is seen to be unaffected by regulation. Big companies are willing to disclose more information both in the pre- and post-regulation period, even though the increase in disclosure from the pre- to the post-regulation is not significant. Financial distress has no influence on the voluntary disclosure of information relating to financial instruments. Such companies are expected to voluntarily disclose more information in order to inform the bondholders of their financial situations and to avoid bond covenants from becoming binding. However, this was not evident in the analysis.

Wald Test: Test of coefficients
OWNER + OWNERy19982000 = 0

| Test Statistic | Value | df | Probability |
|---|---|---|---|
| F-statistic | 13.13583 | (1, 313) | 0.0003 |
| Chi-square | 13.13583 | 1 | 0.0003 |

Null Hypothesis Summary:

| Normalized Restriction (= 0) | Value | Std. Err. |
|---|---|---|
| C(12) + C(13) | -0.250883 | 0.069222 |

Restrictions are linear in coefficients.

High negative media reporting following the collapse of Barings Bank in 1995 and 1996 has had a positive impact in increasing the voluntary disclosure of information relating to financial instruments in the pre-regulation period. However, the impending introduction of the mandatory disclosure requirements in 1998 has a moderating effect on the relative relationship between MEDIA and the voluntary disclosure of information relating to financial instruments. When MEDIA is high, the voluntary disclosure of information relating to financial instruments is high. However, as the impact of MDISC becomes stronger due to the anticipated introduction of AASB 1033 in 1998, the effect of MEDIA on voluntary disclosure is reduced.

The results also indicate that GROWTH, SIZE and INDUSTEy19982000 have higher coefficients compared to the other independent variables. This indicates that for the effect of proprietary costs, the investment growth opportunities of firms have a big influence on the voluntary disclosure decisions in the pre-regulation period, while for the effect of political costs, size of companies is the dominant factor. The change in the mandatory disclosure requirements and the effect of proprietary and political costs is also significant for companies in the Energy Industry.

## 6. Conclusion and Limitations

The results of the multiple regression indicate that for the effects of proprietary costs, investment growth opportunities have a significant influence on the voluntary disclosure of financial instruments-related information in the pre-regulation period. For the effects of political costs, company size has the highest overall impact on the voluntary disclosure of information relating to financial instruments. Taken in combination, these variables provide evidence of a trade-off decision between proprietary costs and political costs in management's corporate voluntary disclosure decision. For the control variables, the change in voluntary disclosure from the pre- to the post-regulation period is significant for companies in the Energy Industry, and the ownership structure is statistically significant in the regulated disclosure environment.

Overall, the general picture that emerges from the regression model is that management does, in fact, weigh up both proprietary and political costs and make a trade-off decision between them. In deciding the extent of voluntary disclosure of past, present and future information about major operating contracts, movements in the company's trading markets and risk management strategies associated with financial instruments, management is clearly influenced by the key surrogate variables for proprietary costs (i.e. GROWTH) and political costs (i.e. SIZE and MEDIA). The trade-off phenomenon is seen in the fact that the former has a strong negative influence on disclosure, and that the latter has a strong positive influence. Integrated with this trade-off decision is the moderating influence on voluntary disclosure of anticipated and actual change in the regulatory environment for disclosure.

There are limitations surrounding the nature and scope of the theories selected in this study. Aspects of signalling theory, proprietary cost perspective, legitimacy theory, media agenda setting theory and political costs theory which are relied upon in this study, are not devoid of criticisms or conflicting arguments.

In addition, the extraction of data relating to the voluntary corporate disclosure of financial instruments-related information in this study was done exclusively through companies' annual reports. This is because a firm's published financial report is one of the sources from which competitors can make inferences about the firm's proprietary information. However, if there are voluntary disclosures made by companies relating to financial instruments in other forms, such disclosures are not included in this study.

This study generates many possibilities for further research. A micro-level analysis of existing data collected for this study could be further undertaken to identify early adopters of mandatory disclosure as opposed to late adopters. These groups could be compared on the basis of their subsequent level of voluntary disclosure. Also, future research could study what type of standard is effective in encouraging voluntary disclosure amongst managers. In this study, a standard with broad guidelines giving managers considerable reporting discretion was investigated. A comparison of the findings from this study can be made with a disclosure standard that is detailed but rigid to provide empirical evidence as to which type of standard is more effective in promoting voluntary corporate disclosure.

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