School of Commerce

Voluntary Corporate Disclosure Relating to Financial Instruments Before and After Mandatory Requirements: The Impact of Proprietary and Political Costs

Faizah Darus

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Voluntary Corporate Disclosure Relating to Financial Instruments Before and After Mandatory Requirements: The Impact of Proprietary and Political Costs

Abstract

This study presents empirical evidence on voluntary corporate disclosure relating to financial instruments in a regulated and unregulated disclosure environment, and the impact of proprietary and political costs on such disclosure decisions. 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. Although there are studies that have analysed the extent of voluntary disclosure for derivative instruments, there is a paucity of empirical evidence regarding the comparative impacts of proprietary and political costs on voluntary corporate disclosures, including financial instruments-related disclosures. The evidence for this study is sampled from listed Australian companies' annual reports from 1 January 1995 to 31 December 2000 for 70 companies from four industries, giving 420 firm-year observations. Preliminary findings of the effect on voluntary disclosure as a result of the introduction of a similar standard in Malaysia are also presented in order to consider the cross-country generalisability of these disclosure influences in different regulatory settings.

Three lines of theoretical arguments: a change in the regulatory environment, the extent of proprietariness of information, and the political cost of non-disclosure, are identified as having an influence on voluntary corporate disclosure. These lines of argument are integrated to form a conceptual framework for testing their combined effects on the extent of voluntary disclosure of financial instruments-related information. These lines of argument are drawn from broader underlying theories namely the disclosure principle, signalling theory, proprietary cost principle, legitimacy theory, the media agenda-setting theory, and the political cost hypothesis.

The fixed effects regression model for panel data analysis is used to analyse the data in this study. The Hausman (1978) test confirms the choice of the fixed effects regression model.

This study finds that both in Australia and Malaysia an increase in the mandatory disclosure of non-proprietary information relating to financial instruments has resulted in an increase in the voluntary disclosure of related proprietary information. However, there are mixed findings between Australia and Malaysia relating to the disclosure of voluntary information in the anticipated regulation period. 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, corporate hedging and financial distress have no effect on the voluntary disclosure of financial instruments-related information.

These findings add to the literature on the explanatory power of disclosure theories underpinning proprietary and political costs and regulatory settings, and have practical implications for regulators who develop financial reporting standards, investors who rely on corporate signals, and management who develop disclosure strategies.

DECLARATION

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

I give consent to this copy of my thesis, when deposited in the University Library, being available for loan and photocopying.

Faizah Darus
University of Adelaide

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Chapter 1

Introduction to the Study

1.1 Preamble

This is a study on voluntary corporate disclosure relating to financial instruments in the periods before and after the introduction of the accounting standard on disclosure and presentation of financial instruments. The study investigates whether a change in the regulatory disclosure environment relating to financial instruments affects management's voluntary disclosure decisions, and the impact of proprietary and political costs on such disclosure decisions. This study is set principally amongst Australian listed companies. However, a preliminary investigation of the relationship between mandatory and voluntary disclosure, to consider the cross-country generalisability of this hypothesis in different regulatory settings, is also undertaken for Malaysian listed companies. In particular, the study focuses on areas relating to disclosure of derivative financial instruments. Disclosure relating to derivatives is more sensitive because it will embody information about future expected outcomes of transaction and hedging strategies. It will thus pose an issue for management of the reporting entity due to the proprietary costs which can arise from the disclosure of such information, or the political costs from the lack of disclosure.

Even though Australia and Malaysia are the focus of this study, the study is not a comparative study between the two countries, as different time periods will be investigated. The emphasis is on developing and testing theories underlying voluntary corporate disclosure practices in different regulatory settings, so as to provide evidence of the robustness of these theories. Hence, influences on disclosure will be investigated across a developed capital market such as Australia and an emerging capital market such as Malaysia.

The existing literature on voluntary financial disclosure has tended to focus on the relationships between the extent or quality of voluntary disclosure in corporate annual reports and several firm characteristics. These studies have examined the association between firm characteristics and the level of information voluntarily disclosed in

company annual reports in general. Such corporate disclosure studies have been empirically undertaken in several countries. Examples include in the United States (Barrett, 1976; Buzby, 1975; Cerf, 1961; Copeland & Fredericks, 1968; Imhoff, 1992; Lang & Lundholm, 1993; Singhvi & Desai, 1971); in Australia (Hossain & Adams, 1995); in Japan (Cooke, 1991, 1992, 1993); in Mexico (Chow & Wong-Boren, 1987); in New Zealand (Hossain et al., 1995; McNally et al., 1982); in Spain (Wallace et al., 1994); in Sweden (Cooke, 1989); in the United Kingdom (Firth, 1979, 1980); in Malaysia (Hossain et al., 1994); in Nigeria (Wallace, 1988); in Switzerland (Raffournier, 1995); and in Hong Kong (Wallace & Naser, 1995).

Other studies on voluntary disclosure have focused on specific areas of disclosure, such as segment reporting (Bradbury, 1992; Harris, 1998; Hayes & Lundholm, 1996; Kelly, 1994; Nagarajan & Sridhar, 1996); interim reporting (Leftwich et al., 1981); earnings forecast (Ajinkya & Gift, 1984; Patell, 1976; Penman, 1980; Skinner, 1994; Trueman, 1986; Waymire, 1985); environmental disclosures (Brown & Deegan, 1998; Deegan et al., 2002; Hutchings & Taylor, 2000; Nasi et al., 1997; O'Donovan, 2002; Patten, 1991, 1992); defined benefit pension plan (Scott 1994); and derivative instruments (Aggarwal & Simkins, 2004; Berkman et al., 1997; Chalmers, 2001; Chalmers & Godfrey, 2004). A number of explanations have been advanced in the literature to explain why firms may provide more information than is mandated. For example, it is argued that voluntary disclosure lowers agency costs (Chow & Wong-Boren, 1987; Jensen & Meckling, 1976); reduces the cost of capital (Aggarwal & Simkins, 2004; Choi, 1973; Diamond & Verrecchia, 1991; Foster 1986; Lev, 1992); and improves the market price of securities (Fishman & Hagerty, 1989). Costly contracting theory and signalling theory underpin these explanations.

Although there are studies that have analysed the extent of voluntary disclosure for derivative instruments, there is a paucity of empirical evidence regarding the comparative impacts of proprietary and political costs on voluntary corporate disclosures, including financial instruments-related disclosures. It is important to investigate the effect of proprietary costs on management's voluntary disclosure decisions since the type of information that management possesses, whether proprietary or non-proprietary, may influence their decisions. Non-proprietary information is information that does not directly affect firms' future cash flows. Proprietary

information on the other hand is defined as 'information whose disclosure reduces the present value of cash flows of the firm endowed with the information' (Dye 1986, p. 331). According to Dye (1986, p. 332):

> In practice, managers acquire private information about their firms by reading and drafting budgets, marketing and financial plans, internal accounting reports, etcetera. Managers could convert much of their private information into public information by releasing these reports.

However, by releasing these reports managers are disclosing their proprietary information not only to shareholders but also to competitors who can benefit from the release of such information. The costs that can arise from the disclosure of proprietary information are associated with competitive disadvantages caused by the reactions of competitors, suppliers and creditors (Chow et al., 1996).

Thus, 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. Politicians, trade unions, consumer associations, stakeholder groups and the general public may decide to impose political costs on these companies due to their failure in making voluntary disclosure. '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).

In summary, companies may choose to disclose proprietary information, which is defined as information that could trigger actions by outside parties that reduce the value of the firm. Proprietary costs arise from disclosure of proprietary information due to actions of competitors (eg by capturing market share), suppliers (eg by increasing costly conditions of purchase) and creditors (eg by increasing the cost of capital or by withholding credit). Political costs arise from failure to disclose proprietary information

due to withdrawal of support from members of the public or imposition by governments and regulators.

In addition to proprietary and political costs, the regulatory environment may also affect management's voluntary disclosure decisions. Currently, many aspects of firms' financial information production are being regulated, and these regulations are mostly laid down by the accounting standard-setting bodies. The main argument given for regulation is that it is in the public interest (Wolk et al., 1989). According to Wolk et al. (1989), two reasons are normally given to justify regulation. Firstly, there is the possibility of failure in the free market system (market failure) where the market will not work properly because of information asymmetry and secondly, there is the possibility that free markets will behave contrary to social goals. With regulation, firms are required to comply with minimum disclosure requirements. In doing so, the standard setters are regulating firms' information production decisions. Thus, firms are not completely free to control the amount and timing of information that they produce. However, whilst firms are required to disclose certain items of information due to regulation, it is often the case that firms do voluntarily disclose more information than is required by corporate regulations and accounting standards. Voluntary disclosure can take the form of information items beyond the scope of mandatory items. In addition, it can take the form of more comprehensive disclosure about any mandated item than is the minimum required for compliance with that item. As information can be viewed as a commodity, the level of disclosure that is mandated by policy-makers, and the decision by management to voluntarily disclose information, implies that the benefits of disclosure are perceived to exceed its costs.

Various theoretical arguments have been used in prior studies to explain the voluntary disclosure decisions made by management. Positive accounting theory in particular has been employed extensively in the accounting literature to explain disclosure practices from the viewpoint of benefits and costs to management as agents. However, in this study, the disclosure principle and signalling theory will be employed to explain the effect of proprietary costs on management's incentives to voluntarily disclose proprietary information. In addition, the study will draw on legitimacy theory and media agenda setting theory to underpin explanations of the impact of political costs on management's decision to voluntarily disclose information.

In order to set the stage for this study on voluntary corporate disclosure relating to financial instruments, background information is introduced about the development of the relevant standards on financial instruments. This introduction will also outline issues of concern and areas of deficiency in the focal body of knowledge for this study. As well, aims and objectives will be established in this chapter.

1.2 Issues Underlying the Development of Standards

The purpose of this section is to provide relevant background information about the development of the standard on financial instruments disclosure.

Much has been written about the potential gains and losses faced by companies from investing in financial instruments, especially in financial derivatives. The spectacular losses sustained by Barings Bank have been well documented (Bowdidge & Chaloupecky, 1997; Stein, 2000; Stonham, 1996). The risks involved in the use of financial instruments by companies where there is exposure to currency, interest rate or commodity price risks not only have become a concern for investors in individual countries, but are also of international concern as increasing numbers of companies trade in international markets.

It has only been in recent years, however, that the disclosure and presentation of information relating to financial instruments has been regulated. With the introduction of the accounting standard on financial instruments disclosure, companies are now required to disclose more information about many aspects of financial instruments, especially relating to derivative instruments.

The accounting regulation of financial instruments has been led by the International Accounting Standards Board (IASB), formerly known as the International Accounting Standards Committee (IASC) which has issued two standards on financial instruments: IAS 32: *Financial Instruments- Disclosure and Presentation*, and IAS 39: *Financial Instruments – Recognition and Measurement*. The IASB, in its attempt to issue accounting standards to regulate the use of financial instruments by companies, had initially adopted the approach of addressing the issues of recognition, measurement and disclosures of financial instruments in one exposure draft. The Australian Accounting Standards Board (AASB) also followed such an approach. This, however, was in

contrast to the disaggregated approach adopted by the United States (US). The US has adopted the approach of targeting and pursuing a particular area of concern for investigation. As such, the US to date has issued various accounting standards to deal with the accounting problems associated with financial instruments.

The IASC first issued its exposure draft on financial instruments: E 40: *Financial Instruments*, in September 1991. However, due to severe criticism on the recognition and measurement issues received from the exposure draft issued, E 40 was modified and re-exposed as E 48: *Financial Instruments*, and was reissued in January 1994. IAS 32, addressing only the issues on disclosure and presentation, was finally issued in 1995 and became effective from 1 January 1996. The IASC subsequently issued a separate accounting standard to address the issue of recognition and measurement of financial instruments: IAS 39: *Financial Instruments- Recognition and Measurement.* In December 1998, IAS 39 revised IAS 32, and the revised IAS 32 became effective from 1 January 2001.

In Australia, the AASB had been working with other international standard setters on the development of an accounting standard on financial instruments since the late 1980s. Australia's first exposure draft on financial instruments ED 59: *Financial Instruments* was issued in March 1993. The proposals in ED 59 were based on E 40 that was issued by the IASC. ED 59 established the definition, recognition, measurement and disclosure rules for all financial instruments. However, due to severe criticism on the recognition and measurement issues relating to financial instruments received from managers, representative bodies, regulatory authorities and academics, ED 59 was subsequently withdrawn and replaced with ED 65: *Presentation and Disclosure of Financial Instruments (and Revision of Set-Off Criteria in AAS 23 and AASB 1014)* in June 1995. ED 65 was concerned only with the presentation and disclosure aspects of the financial instruments. During the period between the withdrawal of ED 59 and the issue of ED 65, the Australian Society of Corporate Treasures (ASCT) in 1995 issued an Industry Statement on derivative disclosures. The Industry Statement provides guidelines for the voluntary disclosure of derivative financial instruments during this period. The Australian Securities and Investment Commission (ASIC) formerly known as the Australian Securities Commission, supported and endorsed the Industry Statement and expected firms to comply with its provisions for the financial year ending

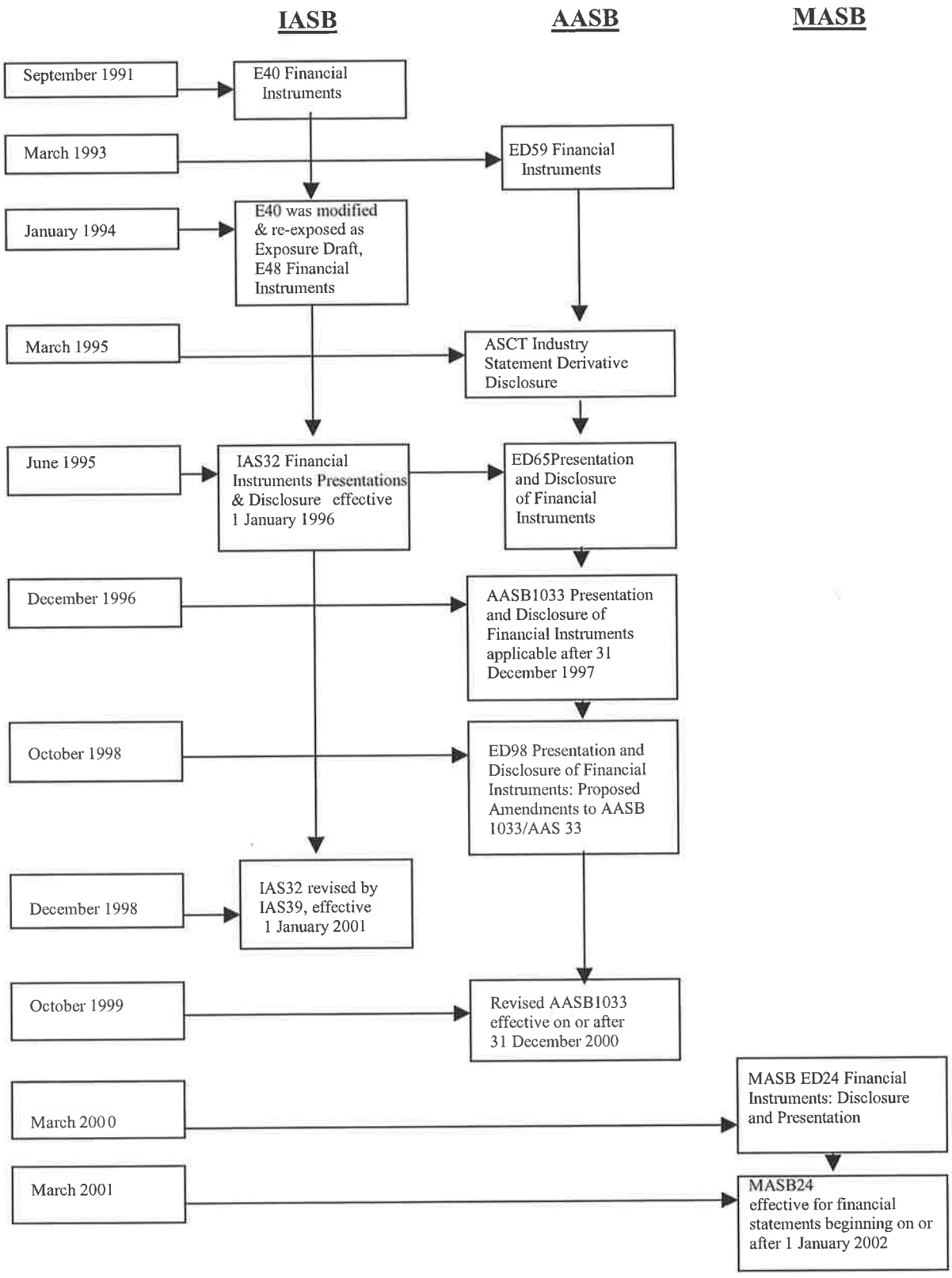
30 June 1995. Following consideration of the responses received on ED 65, the standard on presentation and disclosure of financial instruments for Australian companies, AASB 1033/AAS33: *Presentation and Disclosure of Financial Instruments* was issued in Australia in 1996. AASB 1033 deals with the classification of a financial instrument by the issuer and the disclosure of information relating to financial instruments. AASB 1033 became effective for financial years ending on or after 31 December 1997.

In an attempt to achieve greater harmony between the Australian accounting standards and those of the IASB, the AASB released ED 98 *Presentation and Disclosure of Financial Instruments: Proposed Amendments to AASB 1033/AAS 33* in October 1998. ED 98 included proposals aimed at harmonizing AASB 1033 with IAS 32 as revised by IAS 39. AASB 1033 was subsequently reissued in October 1999 following consideration of the responses received on ED 98. The revised AASB 1033 became effective for the financial years ending on or after 31 December 2000. The revised standard amended the previous standard by specifically addressing the classification of converting financial instruments. Other than this revision, the form, content and structure of the earlier AASB 1033 have been retained. AASB to date has issued only one standard on financial instruments, AASB 1033 *Presentation and Disclosure of Financial Instruments.* The standard on recognition and measurement of financial instruments similar to that of IAS 39 is yet to be issued, but will be part of the IAS adoption program in 2005.

The Malaysian Accounting Standards Board (MASB) also issued a similar standard on the presentation and disclosure of financial instruments. An exposure draft MASB ED 24 *Financial Instruments: Disclosure and Presentation* was issued in March 2000 and the standard, MASB 24 *Financial Instruments: Disclosure and Presentation*, was subsequently issued in March 2001 and became effective for financial statements covering periods beginning on or after 1 January 2002. Similar to Australia, in Malaysia the standard on recognition and measurement of financial instruments is yet to be issued.

Figure 1 summarizes the development of the accounting standards on financial instruments disclosure for the IASB, AASB and the MASB.

Figure 1
The Development of the Accounting Standards on Financial Instruments Presentation and Disclosure - Adapted from Chalmers & Godfrey (2004) with variations



1.3 Why Financial Instruments Disclosure?

Controversy regarding the disclosure and presentation of financial instruments is largely due to the unrecognised (off-balance sheet) aspects of assets and liabilities, which may expose companies to various forms of financial risks. Prior to the issuance of the standard on presentation and disclosure of financial instruments, financial statement users found it difficult to determine what companies had or had not done with their financial instruments, especially with their derivative instruments. This is because many derivatives contracts did not need to be shown in the accounts at all as they often cost nothing, and under the historical cost system they were not recorded in the accounts. In addition, gains and losses on financial instruments, both derivatives and non-derivatives, could go unreported for many years, until the instrument was sold and the gains and losses were realised.

The objective of the accounting standard on presentation and disclosure of financial instruments is to enhance financial report users' understanding of the significance of on-balance-sheet (recognised) and off-balance-sheet (unrecognised) financial instruments to an entity's financial position, performance and cash flows. The introduction of the accounting standard provides financial statement users with more information about firms' activities relating to financial instruments, including the details of contracts affecting future transactions, the state of markets in which the firm trades, and the policies and processes of risk management by the firm. Therefore, the introduction of AASB 1033 and MASB 24 is expected to increase the entity's perceived proprietary information costs on financial instruments disclosures as users of financial statements are provided with off-balance-sheet information to enhance their understanding of an entity's financial position, performance and cash flows.

The issuance of AASB 1033 and MASB 24 also provides an ideal setting to test hypothesized relationships between voluntary and mandatory disclosures and factors affecting management's disclosure decisions. This opportunity to investigate voluntary disclosure arises as the imposed mandatory disclosure requirements, in addition to requiring specific information about particular financial instrument balances and transactions, encourage entities to provide discussion of the extent to which financial instruments are used, the associated risks, and the business purposes served. The standards also encouraged entities to provide a discussion of management's policies for

controlling the risks associated with financial instruments, including policies on matters such as hedging of risk exposures, avoidance of undue concentrations of risk, and requirements for collateral to mitigate credit risks. The standards leave the determination of the level of detail to be disclosed about particular financial instruments to the judgment of each particular entity, taking into account the relative significance of each instrument. This gives management the discretion of deciding on the extent of disclosure to be made. Thus, management may disclose more information than is required by the accounting standards, giving the opportunity for a study on voluntary disclosure (including both additional voluntary items and the comprehensiveness of disclosure for mandatory items) relating to financial instruments in an unregulated and regulated disclosure environment.

1.4 Motivation for the Study

According to Healy & Palepu (2001), accounting and capital market research literature has addressed six forces to date that affect managers' disclosure decisions: capital market transactions, corporate control contests, equity compensation for managers, litigation cost, management talent signalling and proprietary costs. There has been relatively little empirical evidence to support the proprietary cost perspective. Healy & Palepu (2001, p. 424) state that:

> The proprietary cost hypothesis can be extended to include other externalities from information disclosure. For example, Watts & Zimmerman (1986) argue that firms are concerned about potential political and contracting costs from financial disclosures, which may in turn affect their voluntary disclosure.

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. Presently, in Australia, there is limited published research on financial instruments disclosure. Previous Australian studies on voluntary financial instruments disclosure have focused mainly on disclosure of financial derivatives. Such studies have focused either on single period disclosure (Berkman et al., 1997), or on disclosure during the voluntary disclosure period (Chalmers, 2001; Chalmers & Godfrey, 2004). The only empirical evidence on financial instrument disclosure in an Australian context that takes into consideration the relationship between mandatory and voluntary

disclosure and its related proprietary and political costs was provided by the work undertaken by Taylor & Redpath (2000). However, their study was confined only to companies in the Australian mining industry. This study intends to build upon the initial work undertaken by Taylor & Redpath (2000) in this area by extending the scope of the study to include other industries. In Malaysia, no such empirical evidence has yet been published on financial instruments disclosure.

This study will contribute to the existing body of knowledge in the following ways. First, the study will provide findings about the relationship between mandatory and voluntary disclosure, and will document the changes in voluntary disclosure of financial instruments due to imposed mandatory disclosure requirements. Hypotheses will be tested to see whether the results are consistent with theories and prior evidence found concerning the relationship between mandatory and voluntary financial disclosures. Second, the study will provide separate empirical evidence on the effects of proprietary costs and the effects of political costs on voluntary disclosure of financial instruments in a regulated and unregulated environment - a relatively under-explored area in the literature. Third, the study will document the combined effects of proprietary and political costs on the voluntary disclosure of financial instruments-related information in a regulated and unregulated environment. Testing for the robustness of hypotheses in this range of contexts has not been previously undertaken in a single corporate disclosure study. Fourth, the study will document preliminary findings on the change in voluntary disclosure relating to financial instruments in Malaysia due to imposed mandatory disclosure requirements in order to consider the cross-country generalisability of the mandatory/voluntary disclosure relationship in different regulatory settings.

To test the impact of proprietary costs, this study will use firms' corporate hedging strategies and their investment growth opportunities to proxy for proprietary costs. The more prevalent a company's hedging strategies, the more likely it will be able to absorb proprietary costs arising form actions of competitors. Additionally, the greater a company's investment growth opportunities, the more likely it will incur proprietary costs arising from the interests of competitors in those growth opportunities. 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

will be 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.

1.5 Research Problem

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. This thesis will establish why management elects to voluntarily disclose additional information relating to corporations' financial instruments in both regulated and unregulated environments. The study will investigate whether a change in the regulatory disclosure environment relating to financial instruments affects management's voluntary disclosure decisions, and consider the impact of proprietary and political costs on such disclosure decisions. The central research question that will be investigated in this study is as follows:

What impact do proprietary and political costs have on management's incentives to voluntarily disclose information relating to corporations' financial instruments in a regulated and unregulated environment?

This question embodies a complex trade-off decision about voluntary corporate disclosure, because the aim of rational managers is to select a disclosing strategy that will maximize the value of their company to the shareholders by seeking to protect proprietary information and, at the same time, minimize the effect of incurring political costs.

1.6 Aims and Objectives of the Research

Three broad or general aims are envisaged in relation to this study:

(1) To increase the understanding on voluntary corporate disclosure practices by investigating why firms may provide more information than is mandated with particular reference to financial instruments disclosure.

(2) To provide new empirical evidence on the relationship between mandatory and voluntary disclosure which can assist standard setting boards in their formulation of accounting policies and the subsequent refinement of accounting standards, particularly in relation to the standard on presentation and disclosure of financial instruments.

(3) To test the robustness of particular theories that have been applied to voluntary corporate disclosure, specifically the disclosure principle of information economics, signalling theory, media agenda setting theory, and legitimacy theory.

To achieve these aims a conceptual model is developed and a number of specific hypotheses will be tested and analysed. Various statistical analyses will be conducted to test the hypotheses with the aim of achieving the following specific objectives:

(1) To describe the extent to which voluntary disclosure of information relevant to financial instruments changes due to imposed mandatory disclosure requirements.

(2) To identify factors which generate greater or lesser proprietary and political costs for given corporate disclosures.

(3) To explain the effects of proprietary and political costs on managers' voluntary disclosure decisions for the period before and after the introduction of mandatory disclosure requirements.

1.7 Scope of the Research

The scope of this study is delimited in terms of the choice of the underpinning theories, the choice of variables selected, the choice of disclosure method and the sample selection.

The literature which this study draws on to underpin the theoretical arguments on the voluntary disclosure of corporate information relating to financial instruments is based on the disclosure principle, signalling theory, proprietary cost principle, legitimacy theory, the media agenda setting theory, and the political cost hypothesis. These theories provide alternative perspectives on management incentives for voluntary corporate disclosure. The management incentives are grouped under two paradigms – proprietary information theories and legitimacy theories. In addition, the theory of regulation of information markets is invoked to underpin arguments on the effect of regulation on management's incentives to voluntarily disclose corporate information.

In relation to the choice of independent variables selected in order to operationalize the theories invoked to underpin arguments for the impact of proprietary and political costs on voluntary corporate disclosure, surrogate variables are used to proxy for proprietary and political costs, as these costs are not directly observable. The choice of these surrogate variables is based on a literature review of prior research.

Turning to the choice of disclosure method, there are various ways that companies can make voluntary disclosures. Press releases, conversations with financial analysts, letters to shareholders, and the provision of additional information in annual reports, are just some examples. This study focuses on the voluntary disclosures made by companies through their annual reports. This is because a firm's published financial report is one of the sources where competitors can make inferences about the firm's proprietary information from the information disclosed. The research approach involves the content analysis of listed companies' published annual reports.

Finally, in terms of sample selection, this has been limited in scope to public listed companies in certain industries. The choice of industries is based on the likelihood that companies in these industries are perceived as being more likely to use financial instruments, especially derivatives, to finance their operations and to transact their business. The *Banking and Finance* industry is specifically excluded due to the specific nature of the industry.

1.8 Outline of Subsequent Chapters

This thesis consists of six chapters. The subsequent chapters have been organized as follows:

Chapter 2 provides a review of the literature on the three main areas relevant to this study: the literature on the relationship between mandatory and voluntary disclosure; the literature on the impact of proprietary costs on voluntary corporate disclosure; and the literature on the impact of political costs on voluntary corporate disclosure. In reviewing the impact of proprietary and political costs of voluntary corporate disclosure, the chapter also reviews the concepts underlying the disclosure principle, signalling theory, legitimacy theory, and the media agenda setting theory, as these theories are used in this study to underpin the theoretical arguments on the impact of proprietary and political costs on management's decisions to voluntarily disclosure financial instruments-related information. The chapter then reviews the literature that seeks to operationalize these theories through surrogate variables including firms' investment growth opportunities, their corporate hedging strategies, the probability of firms facing financial distress, the size of the companies, and the effect of negative media attention. Finally, the chapter reviews the literature on the influence of industry and the dispersion of share ownership on voluntary corporate disclosure, as these variables are controlled for in this study.

Chapter 3 provides the conceptual framework, identifies the variables and develops the hypotheses for this study. The chapter first develops the conceptual model of the behavioural theories that provide management with the incentives to voluntarily disclose corporate information, and the regulatory environment affecting corporate voluntary disclosure decisions. Arising from the theories in the conceptual model, the variables for this study are identified and formulated into regression equations and an empirical schema. The chapter then proceeds to develop a set of hypotheses to be empirically tested.

Chapter 4 describes the research methodology adopted in collecting the data for the study and the measurement approaches used to measure the variables in order to test the hypotheses developed in Chapter 3. The chapter first discusses the choice of method used to collect the data for the study. This involves the discussion of the justification for using content analysis of companies' annual reports to measure the voluntary disclosure

of corporate information relating to financial instruments. The choice of using ratings made by a panel of experts to rate the perceived proprietariness of the voluntary disclosure items is also discussed. The chapter also discusses the sample selection, the period of study, and the sampling procedure used. Next, the chapter provides a detailed discussion of the process of collecting the secondary data from content analysis of companies' annual reports and the process of collecting primary data through a survey, and the index used to measure the voluntary disclosure of information relating to financial instruments. Details concerning the approaches adopted in measuring the independent and control variables are given in this chapter. Finally, a summary of the variables, their measurement and sources, is also provided at the end of the chapter.

Chapter 5 presents the results and discussion of the data analysis that tests the hypotheses developed in Chapter 3. The chapter first provides the proprietary cost ratings for the voluntary disclosure items made by the panel of experts and results of the consensus test of the ratings. The results for the Australian studies are then presented, starting with the descriptive statistics on the mandatory and voluntary disclosure of financial instruments-related information, followed by the descriptive statistics of the independent variables. The chapter also presents the results of the univariate tests of the various hypotheses to provide some initial insights into the relationships between the dependent variable and the independent variables. Chapter 5 then proceeds to the main hypotheses tests using multiple regression analysis. The fixed effects estimator for panel data is used for the multiple regression analysis, as the data for the study is a panel data set. Results of the Hausman (1978) test confirmed the choice of using the fixed effects estimator for the multiple regression analysis. The chapter also presents the results of the multicollinearity tests performed to test for the presence of multicollinearity amongst the independent variables. Results of the separate multiple regression analysis to test the effects of proprietary and political costs in a regulated and unregulated disclosure environment are first presented, followed by the results of the multiple regression analysis for the combined effects of the proprietary and political costs on voluntary disclosure of financial instruments-related information in a regulated and unregulated disclosure environment. Finally, the chapter presents the descriptive statistics and results of the univariate tests of the preliminary investigation on Malaysian listed companies of the effects of mandatory disclosure requirements on the voluntary disclosure of financial instruments-related information. A comparative analysis between

these findings and those obtained from Australia is then presented. This analysis documents changes in voluntary disclosure relating to financial instruments due to imposed mandatory disclosure requirements in different regulatory settings.

Chapter 6 draws the study to a conclusion. This chapter presents an overview of the study by providing summaries and conclusions on the conceptual model and on the empirical findings. The chapter then offers some implications of the findings for the theory and practice of voluntary corporate financial disclosure strategies in a regulated and unregulated environment. Limitations of the findings are also detailed in this chapter. Finally, opportunities for further research are suggested.

Chapter 2
Literature Review

2.1 Introduction

Various factors influence managements' decision to voluntarily disclose information in their external financial reports. Three streams of theoretical arguments on voluntary disclosure decisions are identified in the accounting research literature. These streams are the relationship between the regulatory environment and voluntary disclosure; the proprietary information perspective on voluntary disclosure; and the legitimacy theory of voluntary disclosure. The latter two theoretical streams are associated with the offsetting effects of proprietary costs and political costs on management's decision to externally disclose corporate information.

This chapter will first provide a review of the literature relating to the relationship between mandatory and voluntary disclosure. The review will assess the arguments for and against regulating financial reporting and also address the effects of such regulation on voluntary corporate disclosure. The review then turns to examining the theories of signalling of proprietary information and legitimising the organization's actions, respectively. Attention is given to how these theoretical perspectives have been applied in studies on voluntary disclosure of particular types of financial and other corporate information. The literature on the effects of proprietary and political costs on voluntary corporate disclosure, and the relationship between these costs, will also be reviewed.

2.2 The Relationship between Mandatory and Voluntary Disclosure

To create investors' confidence in the fairness of the capital market and achieve better investment decisions and capital allocation, it has traditionally been argued that corporate provision of information needs to be regulated to ensure that external users receive some minimum amount of disclosure. This is because of information asymmetry. Managers of firms, by virtue of their position, are assumed to have superior information about their firms' current and expected future performance to that of outsiders. Such information is not freely attainable by all parties that have an interest in the transaction. Advocates of regulation have doubted whether companies on their own could be trusted to report information fully and accurately. Therefore, they argue that

accounting and other corporate information needs to be regulated in the interest of the public, and to prevent companies giving misleading reports. Thus, by regulating corporate information, individuals who are at an information disadvantage would be protected as the market for information may not be efficient, and without regulatory intervention the optimum amount of information may not be generated.

Wolk et al. (1989) summarize the case in favour of regulating the provision of corporate financial information. They point to the merits of mandating the standardized provision of financial information as leading to uniformity of disclosure amongst companies, and in turn enhancing comparability. The quality of financial reporting may also improve. In addition, mandatory public reporting will enhance the perceived fairness of the capital market and will reduce the total cost to society of acquiring information. Market failure is commonly cited as the reason for the need to regulate accounting information. Wolk et al. (1989) argue that firms are monopoly suppliers of information about themselves.

> Since the firm is a monopoly supplier of information about itself, it may be cheaper to society to require mandatory free disclosure rather than to have all investors privately contracting for the same information and paying monopolistic prices.
>
> (Wolk et al. 1989, p. 88)

In addition, Wolk et al. (1989) argue that market failure can be due to the failure of the accounting and auditing profession in preventing frauds and bankruptcies in companies. They argue that as a result, criticism of the profession arises. According to Wolk et al. (1989, p. 85):

> The criticisms generally have focused on the alleged low quality of financial reporting, even under regulation. The reasons cited are poor accounting and auditing standards, too much management flexibility in the choice of accounting policies, and the occasional laxity by auditors. Corporate frauds undetected by auditors and corporate failures not signalled in advance by either financial statements or audit reports are cited as evidence that the financial reporting system is failing to protect the public interest.

The nature of accounting information itself can lead to market failure. Wolk et al. (1989) argue that accounting information is a public good, whereby once it is available it can be consumed without reducing the opportunity for others to consume it as well. According to them, in the free market, public goods are normally under-produced due to externalities. They argue that due to the existence of externalities, producers of public goods will have limited incentive to produce the goods, as all users of the goods cannot be charged for the costs of producing the goods, as there are free riders to the goods. They argue that public goods are normally under-produced, resulting in market failure, as those who produce them are not motivated to meet the actual demand for the goods.

Advocates of regulation argue that regulatory intervention is therefore necessary in order to increase the production of accounting information. Furthermore, they argue that even if there is no market failure, accounting information needs to be regulated in order to achieve social goals that are not achieved by a free market.

Arguments against regulation contend that a competitive capital market produces good voluntary reporting. Due to competitive pressure for capital, it is to the best interest of the company to voluntarily disclose more information than is required so that potential investors perceive it as a responsible reporting firm. This will attract more investments into the company. Also, a firm that has a higher reporting reputation will have a lower cost of capital due to less uncertainty about the firm as it is reporting more extensive and reliable information.

Jovanovic (1982) argues against regulation on the grounds that the free market offers enough incentives for businesses to disclose information about the quality of their product. From his model, he concludes that in a world where false claims cannot occur due to fear of litigation or the loss of future business, the free market offers ample incentives for disclosure. He argues that regardless of the value of information that management possesses '... more than the socially-optimal amount of disclosure takes place' (Jovanovic 1982, p. 36). His model does not support a policy that makes business disclosure mandatory.

Dye (1990) argues that due to interactive effects called 'externalities', the disclosure of information by one firm will also convey information about other firms. He argues that

these externalities can affect the relationship between mandatory and voluntary disclosure. In this theoretical study, Dye (1990) points out that a disclosure made by one firm can create either real or financial externality. 'A disclosure made by one firm is said to create a real externality for other firms if the disclosure alters those firms' cash flows' (Dye 1990, p. 2). According to Dye (1990), such disclosure involves the disclosure of proprietary information. Dye (1990) argues that where real externalities are present, optimal mandatory and equilibrium voluntary disclosures tend to deviate. In such a situation, he deduces that it is necessary to have mandatory disclosure. On the other hand, if the disclosure only creates financial externalities on other firms, that is, 'if the disclosure has the potential of altering the equilibrium prices of those firms without altering the actual distribution of their cash flows' (Dye 1990, p. 2), then in such circumstances, he argues that mandated disclosures are unnecessary. This is because the optimal mandated disclosures will simply coincide with firms' voluntary disclosure decisions.

Assuming that there is a need for regulatory intervention, there is research that concludes companies must also be given the flexibility to voluntarily disclose additional information to reflect their own circumstances. In an attempt to study this basic relationship between mandatory and voluntary disclosure, and the effect of mandatory requirements on voluntary disclosure, various theoretical and empirical studies have been undertaken by prior researchers (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). These studies have indicated that the voluntary disclosing strategy of a firm is influenced by changes in mandatory disclosure requirements.

The usual assumption is that, as mandatory reporting requirements become more detailed, voluntary disclosures may decline (Dye, 1985; Gonedes, 1980; Nagarajan & Sridhar, 1996; Verrecchia, 1982). Dye (1985) in his evaluation of the effects of mandatory changes in accounting standards on firms' voluntary disclosure decisions, assumes that a firm's choice among reporting requirements is influenced by how that choice alters the firm's ability to protect its proprietary information. In his analysis of the effects of mandatory changes in accounting standards on firms' disclosure decisions, Dye (1985, p. 546) concludes:

> ... by imposing more detailed reporting requirements, accounting boards do not necessarily increase investors' knowledge of firms' future earnings prospects. This result can occur for either of two reasons:
>
> (1) mandatory and voluntary disclosures are sometimes substitutes so the 'amount' of information produced by 'more detailed' mandatory reports may be offset by a reduction in voluntary disclosures; or
>
> (2) firms may be able to reveal information by their actual choice among accounting techniques (since accounting choice may be a signal of private information ...), so the mandatory use of a 'more detailed' but uniform, accounting procedure may remove this potential source of information.

Similarly, Nagarajan & Sridhar (1996) argue that an increase in mandatory disclosure requirements relating to segment reporting may result in firms reducing the value-relevant disclosures that they would have disclosed voluntarily in the absence of mandatory disclosure. Nagarajan & Sridhar (1996, p. 253) argue that:

> In the absence of segment reporting requirements, an incumbent firm may voluntarily disclose value relevant information because it can use other, value-irrelevant, information to jam proprietary disclosures. However, when required to disclose segment data, the incumbent may aggregate proprietary information with other value-relevant information to deter entry by a rival. Hence, the firm does not disclose value-relevant information it would have revealed voluntarily in the absence of segment disclosure requirements.

Thus, their model predicts that an increase in mandatory disclosure requirements on segment reporting will result in a reduction of firms' value-relevant voluntary disclosures in order to avoid proprietary costs resulting from the mandatory requirements.

However, according to Dye (1986), in cases where managers are endowed with both proprietary and non-proprietary information, mandatory and voluntary disclosures may complement each other. His 1986 model includes both proprietary and non-proprietary information. He concludes that mandatory and voluntary disclosures are complements

when mandatory disclosures consist of reports of a firm's non-proprietary information. He argues that in situations where a manager's information set consists of two signals, x and y, where the disclosure of y is assumed to produce proprietary costs while the disclosure of x will not, mandating the disclosure of the non-proprietary information x, will affect the voluntary disclosure of y. In such circumstances, he argues that the increase in the mandatory disclosure of non-proprietary information will reduce the benefits of withholding correlated proprietary information. The effect is an increase in incentives to disclose voluntarily the correlated proprietary information.

To test a hypothesis based on Dye's (1986) model, Chow et al. (1996) undertook a laboratory experiment using students as surrogates for managers in setting disclosure policies concerning the withholding of proprietary information. However, Chow et al.'s (1996) findings fail to confirm Dye's (1986) model. From these findings, Chow et al. (1996) conclude that mandatory disclosure of information has no significant impact on the voluntary disclosure of correlated proprietary information. Their findings indicate that even though the results were generally in the predicted direction, they were not statistically significant. Taylor & Redpath (2000) point out that the weakness of Chow et al.'s (1996) study is that the study uses business students as surrogates for managers. They argue that business students may be poor surrogates for managers, as their disclosure decisions may not reflect those of managers. In an attempt to further test Dye's 1986 model, Taylor & Redpath (2000) investigate the relationship between mandatory and voluntary disclosure of financial instruments for mining companies in Australia. Their evidence, from content analysis of financial reports, supports Dye's (1986) hypothesis that an increase in mandatory disclosure is paralleled by an increase in voluntary disclosure of related information.

Studies on the relationship between mandatory and voluntary disclosure of derivative instruments have also been undertaken by earlier researchers (Aggarwal & Simkins, 2004; Berkman et al., 1997; Chalmers, 2001; Chalmers & Godfrey, 2004). Chalmers (2001) examines the disclosure practices of Australian companies relating to derivative instruments disclosure during the voluntary disclosure period, and also in the year the standard on financial instruments presentation and disclosure became mandatory in Australia. Her findings indicate that the amount of voluntary disclosure made by firms progressively increased over the periods leading to the introduction of the mandatory

disclosure requirements. Her findings also indicate that there was a significant increase in voluntary disclosure during the year when the standard became mandatory. This is further confirmed in Chalmers & Godfrey (2004). Chalmers & Godfrey (2004) examine the derivative financial instruments disclosure practices of Australian firms during the voluntary disclosure period from 1992-1996. During this period, the exposure drafts on financial instruments disclosure and the ASCT Industry Statement 'Derivative Disclosures' had already been issued in Australia. By comparing the changes in the mean voluntary disclosure index for each reporting period, their evidence indicates that there was an increase in the disclosure of derivative information provided by firms during the voluntary disclosure period from 1992-1996. They thus conclude that it is necessary to impose mandatory disclosure requirements for derivative instruments disclosure, as companies have no tendency to make such voluntary disclosures prior to such requirements being proposed by the professional organization or the accounting standard setters. However, their study focused only on the voluntary disclosure of the proposed mandatory disclosure items.

Aggarwal & Simkins (2004) conducted a similar study in the US focusing on the voluntary disclosure of currency derivatives by large industrial firms. The study was for the year 1993, after the introduction of the Statement of Financial Accounting Standard (SFAS) 107, which only requires the voluntary disclosure of derivatives usage. Similarly, their findings indicate that in the absence of mandatory disclosure requirements, larger firms and firms with higher levels of currency derivatives usage, and which are thus exposed to more currency risk, did not voluntarily provide increased disclosure of their derivatives activities.

Berkman et al. (1997), on the other hand, make a comparative analysis of the nature, extent and significance of the use of derivative financial instruments between Australia and New Zealand in 1994 (at which time requirements were not yet mandatory in Australia but disclosure requirements were already mandatory in New Zealand). Their findings indicate that whilst there was far more disclosure of information about financial derivatives by New Zealand companies than by Australian companies due to the mandatory reporting requirements, the expectation that companies in Australia would be more likely to voluntarily comply with the provisions of a proposed standard

and disclose more information (i.e. with anticipated mandatory disclosure requirements) did not materialize.

In summary, advocates for the regulation of accounting and corporate information argue that it is necessary to regulate accounting information to ensure investors' confidence in the fairness of the capital market, and also to ensure that external users receive at least a minimum amount of disclosure. However, arguments against regulation contend that the competitive capital market itself will produce good voluntary reporting, thus regulation is not necessary. Prior empirical and theoretical studies on the relationship between mandatory and voluntary disclosure indicate mixed findings. There are arguments that as mandatory reporting requirements become more detailed, voluntary disclosure will decline (Dye, 1985; Gonedes, 1980; Nagarajan & Sridhar, 1996; Verrecchia, 1982). On the other hand, other findings indicate that as mandatory requirements increase, voluntary disclosure will also increase (Aggrawal & Simkins, 2004; Chalmers, 2001; Chalmers & Godfrey, 2004; Dye, 1986; Taylor & Redpath, 2000). In this study the effects of regulating accounting information and the relationship between mandatory and voluntary disclosure is further investigated.

2.3 The Disclosure Principle, Signalling Theory, Proprietary Costs and Voluntary Disclosure

Theoretically, in an ideal condition, a perfect and complete market without information asymmetry or barriers that would prevent fair and efficient market operation would characterize the economy. However, such perfect free market conditions do not exist in practice. In practice, the economy is characterized by information asymmetry where some parties to a transaction may have an information advantage over others. The disclosure principle and signalling theory have been used by prior researchers as proposed solutions to address the information problem. The early analytic work on information economics is that of Grossman (1981) and Milgrom (1981). They address the issue of disclosures in terms of product quality and in situations of information asymmetry.

2.3.1 The Disclosure Principle

Grossman (1981) and Milgrom (1981) suggest that managers will voluntarily report all information to maximize the value of their company. The disclosure principle suggests

that managers of firms will release all information they possess regardless of whether the information is good or bad. The disclosure principle assumes however, that disclosure is costless.

Grossman (1981) in his study investigates whether a monopolist could mislead consumers about his product quality since a monopolist would have greater incentives to mislead his consumers. His model focuses on situations where there is a single seller and many buyers in the market. He considers whether under such circumstances the seller of a good quality product will have the incentive to distinguish himself from the seller of poor quality products. He argues that as a seller has information about the quality of his product, which is not known to buyers, it is to his best interest to disclose such information about the quality of his product in order to distinguish himself from sellers of low quality products. According to Grossman (1981), by doing this, the seller of the good quality product can sell his product at a higher price since the prices of goods to some extent reflect the underlying worth of the goods sold. If buyers have no way of differentiating the quality of the products sold, then the products will have to be sold at the same price regardless of the difference in quality. To provide information about the quality of the products sold to buyers, Grossman (1981) suggests that the seller makes statements or disclosures about his product's quality, which are verifiable *ex post*. According to Grossman (1981), this can be achieved for example, by the provision of guarantee or warranty contracts, which guarantee that the statements or disclosures made are true. However, in cases where statements about product quality are too costly either to communicate or verify *ex post*, and where such statements cannot be guaranteed, then direct disclosure may be credible only if there occurs an *ex post* observable characteristic which is correlated with product quality that can be guaranteed as a substitute to product quality (Grossman 1981). In his analysis, Grossman (1981) concludes that when information transmittal or warranties are costless, a monopolist will disclose all the information he holds because buyers would put the worst interpretation on non-disclosure. This he argues is because a monopolist has the ability to make *ex post*-verifiable statement about the quality of his product. If a monopolist decides to make less than full disclosure, consumers with rational expectations will assume that the product offered is of the worst possible quality in respect of its undisclosed aspects. The monopolist realizing this will have no choice but to make the full disclosure.

The disclosure principle introduced by Grossman's (1981) model assumes a situation where there is a single seller and many buyers in the market. Therefore, his findings may not be applicable to situations where there are many sellers and many buyers in the market place. In addition, Grossman's (1981) model did not distinguish the difference between the warranties that may be provided by high quality firms to distinguish themselves from low quality firms.

In his models on disclosure, Milgrom (1981) introduced the concept of the favourableness of news. In his security market model, he argues that the disclosure of favourable news about a security's future returns will cause the security price to rise. Similarly, in his model of sales encounter, Milgrom (1981) argues that a salesman will disclose the most favourable information about his product since buyers will take a sceptical view of any information that is concealed by the salesman. Therefore, such information will not be concealed as any product information that is concealed by sellers is assumed by buyers to be unfavourable.

Similarly, Jung & Kwon (1988) argue that when investors believe that managers have received information but there is a probability that they have not disclosed it, the investors will infer the content of such information to be unfavourable. In addition, Jung & Kwon (1988) argue that the possibility that investors have acquired credible information from other independent sources such as the financial press or financial analysts may result in managers of firms voluntarily disclosing information they would otherwise withhold.

Chow et al.'s (1996) laboratory experiment also tests the validity of the disclosure principle. This basic principle is that when disclosure costs are zero, managers will voluntarily disclose all news, good and bad. Their findings fail to support the disclosure principle. Their findings indicate that even when disclosure is costless, managers will not disclose all news. They argue that when disclosure cost is zero, even though investors do price-protect themselves when mangers withhold information, the price penalty that investors impose is insufficient to induce full disclosure. In addition, they find that when there is positive disclosure cost, investors will reduce the price penalty that they impose for non-disclosure, resulting in managers disclosing proportionally less

news. Chow et al. (1996, p. 149) conclude that 'market incentives are not sufficient to induce full financial disclosure'.

2.3.2 Signalling Theory

An alternative theoretical perspective that was developed to address situations of information asymmetry in markets where there are many sellers and many buyers is that of the signalling models. The concept of signalling was first introduced in the economics literature by Akerlof (1970) and Spence (1973) in the context of job and product markets. However, it was Spence (1973), who developed the concept into an equilibrium theory in the context of a job market. According to Spence (1973) signalling models can be used by decision makers who face uncertainties in their investment decisions. According to him, one such investment decision where decision makers face uncertainties is in the process of hiring personnel. Spence (1973) points out that in a job market situation, there is an information asymmetry between potential employers and the job applicants. This is because the job applicants know their productivity but the potential employers do not. Thus, potential employers at the initial stage of hiring the job applicants are unsure of their productive capabilities and need some kind of signal to help them in the hiring process. In such a situation, where potential employers are trying to distinguish between high and low quality applicants, Spence (1973) argues that the level of education of the individuals can help determine the quality of the job applicants and the amount of wages that can subsequently be offered. Spence (1973) argues that an equilibrium exists where potential employers can rely on the applicants' level of education as a credible signal of their productive capabilities. This is because high quality applicants prove their productive capabilities by their ability to obtain higher qualifications. On the other hand, lower quality applicants do not have the ability and skills to obtain such qualifications.

Spence (1974) further suggests that the signalling model can be extended to other situations where there are information gaps between buyers and sellers. One such situation suggested by Spence (1974) is in business organizations where sellers have more information about the organizations and may need to emit signals to buyers. Thus, signalling theory shows how the process of signalling can reduce the information asymmetry between the parties involved. The party with more information will signal the information that they have to others to disclose their type. Therefore, in the context

of product warranty for example, signalling theory predicts that high-quality firms will offer a larger warranty than low-quality firms to signal their quality.

However, Newman & Sansing (1993) caution that the signals provided by firms to disclose their type may not be fully truthful. According to Newman & Sansing (1993), this is especially so for financial disclosures that permit some degree of managerial discretion. They argue that because there are different users of the financial information, some public disclosures made by firms will deliberately be inaccurate. In their model they argue that due to threat of entry from competitors, firms will want to understate their type to competitors to deter entry. However, firms will prefer to disclose their type truthfully to investors in order to improve their investment decisions. In such settings, the firm may make truthful and complete disclosures for some aspects of its private information but noisy disclosures for others.

Prior researchers have also applied signalling theory to several areas in corporate finance (Bhattacharrya, 1979; Crawford & Franz, 2001; Leland & Pyle, 1977; Levy & Lazarovich-Porat, 1995; Ross, 1977). Financial signalling models were developed so that investors can infer the value of the firms after managers provide an indirect signal in the form of an observable financial action, for example, by selecting a particular dividend policy or a particular capital structure or a particular accounting or financing policy. In these models, investors perceived the selected financial signals given by managers as credible communication of inside information, since the signal given is costly and the marginal cost of false signalling exceeds the marginal benefit.

Leland & Pyle (1977) argue that entrepreneurs can perfectly reveal the private information about their firms by retaining a percentage of the firms' ownership. In their model, they argue that one such way that lenders can infer the true quality of a project undertaken by a firm is by observing the actions of the entrepreneurs since the entrepreneurs know more about the project that is to be undertaken by the firm. According to Leland & Pyle (1977, p. 371):

> The willingness to invest may serve as a signal to the lending market of the true quality of the project; lenders will place a value on the project that reflects the information transferred by the signal.

However, Leland & Pyle (1977) dismiss the use of direct transfer of information between borrowers and lenders because of the moral hazard problem. They argue that lenders must infer the value of the firm by observing the actions of the entrepreneurs and state that:

> Borrowers cannot be expected to be entirely straightforward about their characteristics, nor entrepreneurs about their projects, since there may be substantial rewards for exaggerating positive qualities. And verification of true characteristics by outside parties may be costly or impossible.
>
> (Leland & Pyle 1977, p. 371)

Levy & Lazarovich-Porat (1995) undertook a laboratory experiment to test Leland & Pyle's (1977) theoretical analysis. The study tests the association between entrepreneur participation in financing a new project and firm value. The study investigates investors' willingness to pay a higher price for a firm which signals quality. Their findings support signalling theory. Subjects of the experiment were willing to pay a higher price for the firm when the entrepreneur had a higher participation in financing the project as compared to firms with lower participation. The findings show that the share price increases as the proportion of entrepreneur ownership increases. The subjects in this experiment thus create their own beliefs regarding the firm's quality. Subjects of the experiment believe that the manager knows more about the viability of the project and, by participating in financing the project, they are sending indirect signals about the viability of the project and the quality of the firm.

Firms have also retained debt in their financial structure in an attempt to signal quality. Ross (1977) uses signalling theory to illustrate the relationships between signalling and the determination of the financial structure of a firm. In his model, he argues that firms will signal their use of debt financing to indicate that they are a high quality firm. This is because only high quality firms will have the ability to borrow and repay their debts.

Payment of cash dividends by firms can also signal the quality of the firm. Bhattacharrya (1979) develops a model associating the payment of cash dividends made by firms with their expected cash flows. He argues that because cash dividends are taxed at a higher rate than capital gains, the payment of cash dividends by firms acts as

a signal to investors of the firms' expected cash flow. Only a high quality firm can afford to pay cash dividends.

In addition, share distribution made by companies is viewed as providing a positive signal about firms' private information. Crawford & Franz (2001), argue that one of the reasons that the stock market generally reacts positively to the announcement of a share distribution even though the distribution does not affect cash flows is because of the signal provided by managers. According to Crawford & Franz (2001, p. 142) 'investors perceive the announcement as a signal that managers have favourable private information about their firm's value'. However, Crawford & Franz (2001) argue that managers' incentives and costs are taken into consideration by investors in their evaluation of the credibility of the signal provided by managers. This will result in a negative relation between the market's response to the share distribution and the firm's pre-announcement share price. This is known as the credibility-of-signal effect. They argue that '... the market response is reduced because of the observable net benefits to managers of sending the signal reduce the signal's credibility to investors' (Crawford & Franz 2001, p. 162).

Various studies on initial public offerings (IPOs) have also drawn on signalling theory to help resolve the asymmetric information problem inherent in the IPO process, since the success of an IPO depends primarily on the perceptions of the potential investors regarding the performance of the company making the public issue. Thus, managers will need to send signals to the potential investors to indicate the quality of the firm, thereby reducing uncertainty on the part of the potential investors. The reputations of investment bankers (Hughes 1986), quality of auditors (Beatty 1989; Datar et al., 1991; Titman & Trueman 1986), board prestige (Certo 2003), venture capitalist certification (Megginson & Weiss 1991), retention of a percentage of firm's ownership (Datar et al., 1991; Leland & Pyle 1977) and underwriter's reputation (Carter & Manaster 1990; Carter et al., 1998) have been used as indirect signals to indicate the quality of the firm in the IPO process.

Titman & Trueman (1986) use a theoretical model to show the relationship between a firm's value and the choice of auditor and investment banker during an IPO process. They argue that investors will be able to infer the nature of the entrepreneur's

information from his choice of auditor. The choice of auditor can be used as a signal of the quality of the firm, which in turn can be used to value the new issues. As auditors are hired to assure accurate information to potential investors' during the IPO process, they argue that an owner with more favourable information will be willing to pay a higher fee for a quality auditor in order to provide more accurate information, as the information that will be provided by the auditor will likely be favourable. Thus, Titman & Trueman (1986) conclude that an entrepreneur with favourable information about his firm's value will choose a higher-quality auditor and investment banker than an entrepreneur with less favourable information. Therefore, the higher the quality of the audit firm, the more favourable will investors infer the information to be, and so the higher will be the price at which the new issue can be sold.

Beatty (1989) empirically tests the relationship between the reputation of an audit firm and the initial return earned by an investor. His findings indicate that there is an inverse relationship between the reputation of the audit firm and the initial return earned by IPO investors. This is due to less under-pricing of the firm's equity securities during the IPO process. From the findings of his study, he concludes that by hiring a reputable audit firm during the IPO process, managers are reducing the uncertainty problem faced by potential investors since these auditors can creditably attest to the assertions contained in the audited financial statements. Thus, Beatty (1989) argues that managers are using the reputation of their audit firm to signal the quality of the audit and value of the firm to the market, resulting in less under-pricing of the firm's equity securities. This is because high quality firms are more likely to engage reputable auditors than low quality firms. However, Datar et al. (1991) argue that the choice of auditor and the resulting audited report alone do not provide additional information about the firm's future market value. They argue that the audit report only reports what the entrepreneur already knows. They view the role of auditing as primarily one of attestation. To overcome this limitation, they develop a model that considers the simultaneous use of audited reports and percentage of retained ownership. They argue that the choice of auditor provides only partial information about the entrepreneur's private information. The audited report may not perfectly reveal the firm's type. To signal quality type, it is necessary that the entrepreneur retain a smaller percentage of his ownership in the firm. This way, any remaining uncertainty that investors may have about the firm will be resolved.

The reputations of underwriters engaged in the IPO process have also been used to signal the quality of the firm (Carter & Manaster 1990). Carter & Manaster (1990) argue that firms would select prestigious underwriters in an attempt to signal their low risk characteristic to the market. They argue that as prestigious underwriters need to maintain their reputation, they will only market the IPOs of low risk firms. Thus, the choice of underwriters can act as a credible signal as to the type of firm, and assist investors in valuing the firm. In addition, Carter et al. (1998) provide further empirical evidence of the relationship between underwriters' reputation, their initial returns, and the long-run performance of the IPO stocks. In this study, they extend the period of investigation to include not only the year of the IPO, but also a three-year period following the IPOs. Their findings indicate that IPOs that are managed by more reputable underwriters are associated with less under pricing, not only in the short run but also for the three-year holding period.

Certo (2003) in a theoretical paper suggests that the symbolic role of prestigious board structures may be important in the IPO process. According to him, this is because the perception of investors about board prestige is important to investors, as it will signal the organizational legitimacy of the firm, and this will affect its market performance. Certo (2003) argues that in addition to financial information, non-financial information is also important to IPO investors in making investment decisions. Information about board structures represents important non-financial information that can assist investors in their decision-making. Certo (2003) further suggests that the prestige of the investors themselves may also influence their perceptions of board prestige. Certo (2003, p. 439) states that:

> ... prestigious investors may better differentiate between prestigious and non-prestigious board structures; whereas less prestigious investors may tend to group together prestigious and non-prestigious board structures.

The presence of venture capitalists in the IPOs of companies also provides a signal of the credibility of the offering price of the issue (Megginson & Weiss, 1991). According to Megginson & Weiss (1991), the presence of venture capitalists in the offering firm certifies the quality of the issue. Their findings also indicate that the presence of venture capitalists in the IPOs of companies will also attract more prestigious auditors and

underwriters. In addition, retention by the venture capitalists of their shareholdings in the company after the IPOs indicates the credibility of the certification provided by them.

Of relevance to this study is the application of signalling theory to the area of corporate disclosure. Watts & Zimmerman (1986) argue that signalling theory can be applied in the area of corporate disclosure. In the context of corporate disclosure, managers of firms are assumed to possess more information than outsiders regarding a firm's expected profits, risk exposure, future cash flows etc. Watts & Zimmerman (1986, p.165) argue that:

> Those firms whose share prices are undervalued have an incentive to expend additional resources on financial information to signal that fact. The remaining, overvalued firms implicitly signal that fact by not providing additional information, and the value of their shares drops to the average value for the overvalued group.

This process according to them will continue until only firms with the worst performance will not signal. Thus, signalling motivates corporate disclosure. This proposition is termed the 'signalling hypothesis' by Watts & Zimmerman (1986, p. 166).

Hughes (1986) was the first to develop a signalling model that includes direct disclosure as a second signal of firm value. She formulated a bivariate signalling model by extending Leland & Pyle's (1977) univariate model to include direct disclosure as a second signal. Hughes (1986) argues that in addition to firm ownership, managers can effectively communicate inside information to investors by direct disclosure, for example through their accounting reports. Hughes (1986) disagrees with earlier researchers who have dismissed direct disclosure as a signal in their models because of the moral hazard problem attributed to disclosure. According to Hughes (1986, p. 136) direct disclosure is a credible signal '... to infer firm value because of the contingent contract with the entrepreneur under which a non-dissipative penalty is imposed for outcomes considered low relative to the disclosed value'. According to her '... the entrepreneur is penalized if the *ex post* costlessly observable cash flow of the firm indicates that the disclosure was fraudulent' (Hughes 1986, p. 119). The two signals,

disclosure and firm ownership according to Hughes (1986) will have to be chosen simultaneously by the managers in order to minimize the cost of signalling value.

Healy & Palepu (1993) draw on the information perspective of financial reporting by arguing that managers can make their financial report more credible, and correct the real value of their firm, by making either additional voluntary disclosure, or by signalling their financing policies. According to Healy & Palepu (1993), even though managers of firms have superior information about their firms' current and future performance relative to investors, there exists conflict of interest between them and the shareholders, and also imperfect accounting and auditing standards. Consequently, financial reports are distorted, resulting in information problems. This leads to firms being misvalued by the public capital markets. To correct the real value of their firms, managers need to signal the quality of their firms by making additional direct voluntary disclosure in their financial statements or by indirectly signalling their financing policies.

Similarly, Kanodia & Lee (1998) argue that the periodic performance reports issued by management reveal private information about the profitability of new investment opportunities. According to them:

> In equilibrium, investors in the capital market extract information from both the firm's observable investment and the performance report … The observed investment is used to make inferences about management's prior beliefs, and the performance report is used to update the distribution of future cash flows given these inferred prior beliefs.
>
> (Kanodia & Lee 1998, p. 34)

Thus, Kanodia & Lee (1998, p. 34) argue, 'the anticipation of performance reports disciplines managers' investment incentives and allows the firm's observable investment to emerge as a credible signal of management's prior information'.

Trueman (1986) argues that managers have the incentive to voluntarily disclose earnings forecasts to signal their ability in managing the firm. According to Trueman (1986), the reason why managers voluntarily disclose earnings forecast in advance of actual earnings announcements is to signal the quality of their firm. Since investors

cannot directly observe managers' ability in managing the firm, managers therefore signal their ability to anticipate future changes in the firm's economic environment by disclosing their earnings forecast in advance of the actual earnings announcements. This is because the firm's market value is affected by investors' perception of management's ability to anticipate future changes in the firm's economic environment, and their ability to subsequently adjust the production plans. However, according to Trueman (1986) the incentive to voluntarily disclose such information only exists provided that the information disclosed is costless. However, if there are costs involved in disclosing such information, then disclosure is not guaranteed.

In his study on earnings-related disclosure, Skinner (1994) provides empirical evidence that managers disclose both good and bad news forecast voluntarily. Skinner (1994) finds that good news disclosures are made by firms to signal the quality of their firms. However, for bad news disclosure, Skinner (1994) finds that firms voluntarily disclose bad news to prevent the eventual decline in share prices when the actual announcements are made, for fear of being sued, or to avoid incurring reputation costs. Skinner (1994, p. 40) argues that:

> … to prevent large stock declines on earnings announcement dates (and thereby reduce the potential costs of shareholder suits), managers have incentives to pre-empt the announcement of large negative earnings surprises.

Thus, Skinner (1994) argues that managers will voluntarily disclose good and bad news as signals of the quality and performance of their firm.

Watson et al. (2002) however finds limited evidence to support signalling theory for voluntary disclosure of ratios. Their study draws on signalling theory to explain the voluntary disclosure of accounting ratios made by several United Kingdom (UK) companies. The study tests the association between ratio disclosure and a firm's characteristics. They argue that even though ratio disclosure is voluntary, if it is considered as best practice, then disclosing such ratios may signal reporting quality. In particular, they argue that signalling theory will support the disclosure of certain types of ratios such as investment, profitability and efficiency ratios that will highlight favourable aspects of a firm's performance. Watson et. al's (2002) results however, do

not support signalling theory. Their findings indicate that while most companies do disclose ratios, the practice of doing so is not consistent. Different companies will disclose different ratios and they will calculate them in different ways, resulting in difficulty in comparing between companies. Their results indicate that companies are not using ratios to signal their performance, even though ratio analysis is a useful tool that is normally used by investors in assessing and comparing companies' performance.

The voluntary disclosure of additional information to signal quality is however, not costless. Proprietary costs have a constraining effect on additional disclosure. The disclosure of such additional information to reflect quality may reveal valuable proprietary information. There may be situations when managers may not want to reveal all the information that users of financial information desire because of the proprietary nature of the information. Managers fear that releasing such information will benefit the competitors, resulting in the firm incurring proprietary costs. In fact as suggested by Dye (1985), concerns over the disclosure of proprietary information affect a firm's selection of accounting choice.

2.3.3 Proprietary Costs and Voluntary Disclosure

The perception that firms are reluctant to voluntarily disclose additional information due to the effect of proprietary costs is widespread amongst researchers on voluntary disclosure. The economic theory of games (or game theory for short) has been used by prior researchers to provide a formal framework for predicting possible outcomes, of the conflicting incentives of voluntarily disclosing proprietary information during periods of uncertainty and information asymmetry. By modelling the conflicting incentives on voluntary disclosure as a game, researchers then predict the possible outcomes taking into consideration the three major players of the game: the manager of the incumbent firm; the potential entrant; and the financial market. The manager of the incumbent firm is reluctant to release proprietary information as the dissemination of such information may reduce the firm's future earnings by the entry of rivals. However, such disclosure is necessary to increase the financial market valuation of the firm. In a game theory setting, 'each player in the game is assumed to want to maximize his or her expected utility …' (Scott 1997, p. 234). In addition, each player in the game needs to consider and predict the possible actions to be taken by the other players in the game.

According to Scott (1997, p. 234):

> Actions of other players can be extremely difficult to predict because the action chosen by one player will depend on what action that player thinks the other players will take, and vice versa.

A review of the existing literature on the relationship between proprietary costs and voluntary disclosure indicates that various relationship models based on game theory have been developed by prior researchers to investigate the impact of proprietary costs on voluntary disclosure (Darrough & Stoughton, 1990; Dye, 1986; Feltham & Xie, 1992; Gigler, 1994; Jung & Kwon, 1988; Li et al., 1997; Verrecchia, 1983, 1990; Wagenhofer, 1990). The outcomes from these models are varied.

Verrecchia (1983) in his model on discretionary disclosure argues that the degree of uncertainty caused by a manager withholding information is related to a threshold level of disclosure, which is dependent on the expected size of the proprietary costs. He asserts that firms have incentives not to disclose information to avoid incurring proprietary costs.

According to Verrecchia (1983, p. 179):

> The manager decides to either release or withhold this signal on the basis of the information's effect in the asset's market price. He exercises discretion by choosing the point, or the degree of the information quality, above which he discloses what he observes, and below which he withholds his information.

Verrecchia (1983) refers to this point as the 'threshold level of disclosure.'

In his model Verrecchia (1983, p. 179) assumes that:

> Traders are aware of the existence, but not the content, of the information possessed by the manager. Therefore, a manager's choice of a threshold level of disclosure has to be determined in conjunction with trader's expectations.

Verrecchia's (1983) model also shows that the threshold level of disclosure increases as the proprietary cost increases, and when proprietary cost is zero (that is, when disclosure is costless), his model yields the same result as the earlier work of Grossman (1981) and Milgrom (1981). The model predicts that there will be full disclosure by a manager. The manager will disclose both good and bad news.

Subsequent empirical studies have sought to test Verrecchia's (1983) model. Chow et al.'s (1996) laboratory experiment also tests Verrecchia's (1983) model. Their findings fail to support Verrecchia's (1983) prediction that when disclosure is costless, managers voluntarily disclose all news (good and bad). However, their findings support Verrecchia's (1983) prediction of a relationship between proprietary cost and a threshold level of disclosure.

In a further test of Verrecchia's (1983) proprietary cost theory, Scott (1994) investigates the incentives and disincentives of voluntary disclosure for defined benefit pension schemes of Canadian firms. His findings support Verrecchia's (1983) proprietary cost model. His findings indicate that proprietary costs and the type of news to be disclosed do influence firms' disclosure level. The larger the proprietary cost, the greater is the incentives for firms not to voluntarily disclose information. However, if the news is favourable these firms have greater incentives to disclose the information.

The models developed by Dye (1986), Grossman (1981), Milgrom (1981) and Verrecchia (1983) only considered proprietary costs as being exogenous disclosure costs that arise when the firm discloses proprietary information. They did not explicitly model the strategic decisions of opponent firms. This was undertaken by Wagenhofer (1990). Wagenhofer's (1990) disclosure model predicts the existence of full and partial-disclosure equilibria in a market where there are three players: the firm, an opponent, and the investors. He deduces that in situations where there is both full and partial disclosure equilibrium, firms will normally prefer the partial disclosure equilibria. Even though Wagenhofer (1990) acknowledges the effect of proprietary costs due to disclosure, his model predicts that the existence of such costs does not necessarily imply non-disclosure. His analysis shows that proprietary costs are the result of strategic decisions made by opponents who use all available information.

Wagenhofer (1990, p. 342) states that:

> ... if the firm does not disclose, it still can incur proprietary costs, since the opponent might take an adverse action based on the information conveyed by nondisclosure. Conversely, disclosure can result in no proprietary costs if the information disclosed deters the opponent from taking an adverse action.

Thus, Wagenhofer (1990) argues there is never non-disclosure equilibrium. King & Wallin's (1995) experimental study was designed to test Wagenhofer's (1990) disclosure model. Their results from an experimental market game study support Wagenhofer's (1990) prediction that firms prefer the partial-disclosure equilibrium to the full-disclosure equilibrium.

Extending Wagenhofer's (1990) work, Gigler (1994) develops a model that contrasts the effects of disclosure on the actions of opponents and investors. Gigler (1994) focuses on the issue of generating credibility from voluntary disclosures. In his model, Gigler (1994) assumes that a firm will want to overstate its profitability to the capital market whilst understating it to competitors. He further assumes that since voluntary disclosure is unaudited and can be manipulated by management, the credibility of such information is jeopardised. Firms would then be reluctant to make such voluntary disclosures as such disclosures are ignored as they are viewed as not being credible. Therefore, he argues that since firms are willing to incur proprietary costs in voluntarily disclosing information, the proprietary costs encourage firms to make voluntary disclosures that can add credibility to the disclosures made. Gigler (1994) however, disagrees with the concept of full disclosure. He argues that 'for all parameter values, no firm will completely disclose its private information' (Gigler 1994, p. 235). According to him, a firm will want to provide credible proprietary information in its disclosure, but not to completely reveal all information.

In a follow up modelling of his earlier work, Verrecchia (1990) considers how the quality of management's private information will affect managers' voluntary disclosure decisions. In this analytic study Verrecchia (1990) shows how a change in the quality of information received by a manager affects the manager's threshold level of disclosure and the probability of disclosure. He argues that information of higher quality will result

in a lower threshold level of disclosure and this will increase the probability of disclosure. He adds that 'when a manager withholds information of a higher quality, the market discounts the value of the asset further than it would otherwise' (Verrecchia 1990, p. 375). This he argues will force the threshold level down, resulting in a higher probability of disclosure. However, Penno (1997) in his examination of voluntary disclosures of non-proprietary information disagrees with Verrecchia's (1990) assertion. Penno (1997, p. 276) argues that 'under certain conditions the frequency of voluntary disclosures is negatively related to the quality of information'.

The frequency and quality of voluntary disclosures will have an industry effect. Dye & Sridhar (1995) argue that the voluntary disclosure made by some firms in the industry will eventually induce other firms to make similar disclosures.

> ... as more firms possess private information about some new value-relevant dimension, it becomes more likely that every firm will disclose information on its performance along that dimension.
>
> (Dye & Sridhar 1995, p. 159)

Allied to the evidence of an industry effect is a study by Hayes & Lundholm (1996) on the voluntary disclosure of segment information. In addition to complying with the regulatory requirements relating to segment information, firms may choose to disclose further detailed information about their segments. Hayes & Lundholm's (1996) model considers the situation where a firm's choice on reporting its segment activities is made after consideration of the market's valuation and its rival's action. They argue that:

> The firm takes the rival's possible actions into account when choosing a segment reporting strategy and the capital market determines the firm's price based on its disclosures and in anticipation of the rival's action.
>
> (Hayes & Lundholm 1996, p. 263)

Similarly, Harris (1998) argues that even in less competitive industries managers are reluctant to disclose detailed segmental reporting for fear that rival firms will capture

their abnormal profits. Harris (1998) empirically investigates the association between competition and managers' segmental disclosures. Her findings indicate that operations in less competitive industries are less likely to be reported as industry segments in an effort by management to conceal their abnormal profits and their market share in these industries.

In addition, Kelly (1994) argues that firms with high return on investment (ROI) are less likely to report discretionary segmental information than firms with low ROI. He argues that such firms are reluctant to make such disclosures in an attempt to minimize proprietary costs arising from entry of competitors into such market.

There have been few empirical investigations to test the many analytic models of the relationship between proprietary costs and voluntary disclosure. Two empirical studies of Verrecchia's (1983) model were reviewed earlier in this section. Other relevant empirical studies are found in relation to proprietary costs of corporate environmental disclosure.

First, Cormier & Magnan (2003) investigate the influence of proprietary costs on firms' corporate environmental reporting strategies. Their findings indicate that proprietary costs play a major role in determining a firm's environmental reporting strategy. Those firms in good financial condition disclose more environmental information than poorly performing firms, suggesting that firms that are financially sound are better able to absorb the impact of proprietary costs due to disclosure. Second, Li et al. (1997) in a study on environmental liability, introduce a model and provide evidence that firms will incur proprietary costs not only from disclosing good news but also by disclosing bad news. They argue that by disclosing bad news a firm can trigger a successful strike by the opponent. They also argue that when the expected proprietary costs due to disclosure are expected to increase, firms will be less likely to make voluntary disclosure. Li et al. (1997) also conclude that in a partial disclosure equilibrium, firms will make voluntary disclosure to reveal information on a strategic basis in order to maximize their share value.

In summary, previous market entry game models and empirical (experimental design) studies suggest that the disclosure of proprietary information to signal quality of the

firm to investors is dependent on such factors as the level of competition in the industry (Darrough & Stoughton, 1990; Harris, 1998; Hayes & Lundholm, 1996), the performance condition of the disclosing firm (Cormier & Magnan, 2003; Kelly, 1994) and the type of news to be disclosed (Li et al., 1997; Milgrom, 1981; Scott, 1994; Verrecchia, 1983).

In this study, the impact of proprietary costs on management's voluntary disclosure decisions is investigated for firms with antecedent conditions of investment growth opportunities (a surrogate for the level of potential competition) and corporate hedging strategies (a surrogate for the performance condition of the firm).

2.3.3.1 Investment Growth Opportunities

The concept of investment growth opportunities of a firm was first termed by Myers (1977) as 'investment opportunity set' (IOS) to refer to the extent to which a firm's value depends on the future discretionary expenditures made by the firm. In this sense, the concept is directly associated with the firm's expected future cash flows. According to Myers (1977) firm value is divided into two components: assets-in-place, and investment (growth) options.

As explained by Gaver & Gaver (1993 p. 127) '... virtually any discretionary investment expenditure can be viewed as a growth option'. Mason & Merton (1985) point out that expenditures made by managers to expand the capacity of their projects, or to introduce new product lines, or to acquire other firms, or expenditures in advertising brand names, or even to maintain and replace existing assets, amounts to growth options.

Cross sectional variations in the investment opportunity set of firms, which make this concept a variable, are due to several reasons. Smith & Watts (1992) state that the investment in specialized physical and human capital by a firm is the factor that results in the variation in the firm's investment opportunity set. Kester (1986) on the other hand argues that the value of investment options is dependent upon the particular assets to which they are attached. Chung & Charoenwong (1991) however point out that the differential investments made by firms, either to generate economies of scale, or to differentiate their product from that of competitors, or to investment for brand loyalty or

patents, that create barriers to entry which halt or delay the competitive factors, will result in cross-sectional variations to the value of investment options.

A review of the literature reveals that the concept of investment growth opportunities has been empirically modelled in the following types of relationships:

- corporate policy choices concerning capital structure, dividend policy and organizational structure
- corporate performance and corporate governance
- accounting policy choices concerning earnings decreasing and smoothing procedures
- corporate voluntary disclosure levels

First, prior studies provide evidence that investment growth opportunities can influence corporate policy choices (Gaver & Gaver, 1993; Gul, 1999; Ho et al., 2004; Jo et al., 1994; Smith & Watts, 1992). Smith & Watts (1992) provide industry-level evidence that firms with more growth opportunities use less debt in their capital structures. They argue that this is in line with agency conflicts, which cause firms with an abundance of positive net present value of investment opportunities to issue equity rather than debt to finance their new investment. Smith & Watts (1992) also argue that growth firms have low dividend payout policy, since investment and dividends are linked through the firm's cash flow identity. In addition, they argue that growth firms require more managerial discretion than firms with low growth. Gaver & Gaver (1993) using data at firm level conducted a similar study on growth and non-growth firms, and their findings were consistent with those of Smith & Watts (1992). Thus, they confirm the contracting-cost explanation of corporate policy choice.

By contrast, Jo et al. (1994) find that for Japanese firms there is a positive relationship between book debt-equity ratios and the growth rate of firms. They argue that this is because, for Japanese firms, the agency conflicts are reduced due to their institutional arrangements where 'Japanese financial institutions are allowed to take large positions in the debt and equity of the same firm' (Jo et al. 1994, p. 229). They argue that:

> ... these large investors can reduce the inherent principal-agent conflict affecting the shareholders and debt holders of the firms. Also, large equity stakes by Japanese

> financial institutions and their active monitoring of corporate policy reduces the agency conflict between owners and managers by controlling managers' consumption of perquisites and by reducing their scope to pursue goals other than profit maximization.
>
> (Jo et al. 1994, p. 229)

Gul (1999) extended parts of Smith & Watts (1992) study on the relationship between IOS and corporate policy decisions to sample firms from China. His findings were consistent with those of Smith & Watts (1992) and Gaver & Gaver (1993). Ho et al. (2004) provide evidence that director ownership moderates and counteracts the association between IOS and corporate policies, using sample firms from Hong Kong. Their results are consistent with contracting theory predictions that high director ownership mitigates the need for incentive or bonus compensation plans in growth firms (Ho et al. 2004, p. 383).

Second, prior researchers provide evidence that there is a negative association between firms' investment opportunities and performance (Baber et al., 1996; Gul, 1999). In addition, Hutchinson & Gul (2003) find that the negative association between firms' investment opportunities and performance 'is weaker for firms with (1) a higher proportion of non-executive directors on the board, (2) higher management shareholdings and (3) higher management remuneration' (Hutchinson & Gul 2003, p. 17). Thus, they argue that there is a relationship between performance of growth firms and the composition of the board of directors. Hutchinson & Gul (2003) conclude that corporate governance is therefore important for firms with more growth opportunities.

Third, Watts & Zimmerman (1986, 1990) first speculated that there might be a link between a firm's investment growth opportunities and financial reporting choice. They argue that growth firms' assets are less readily observable since they are represented by future investments. Thus, contracts based on these less readily observable values provide managers with greater flexibility to behave opportunistically. Accordingly, they suggest that the growth firms' accepted set of accounting procedures would restrict the manager's ability to choose earnings inflating procedures. Hence, they argue that the greater the firm's growth opportunities, the more income decreasing accounting procedures will be chosen by managers.

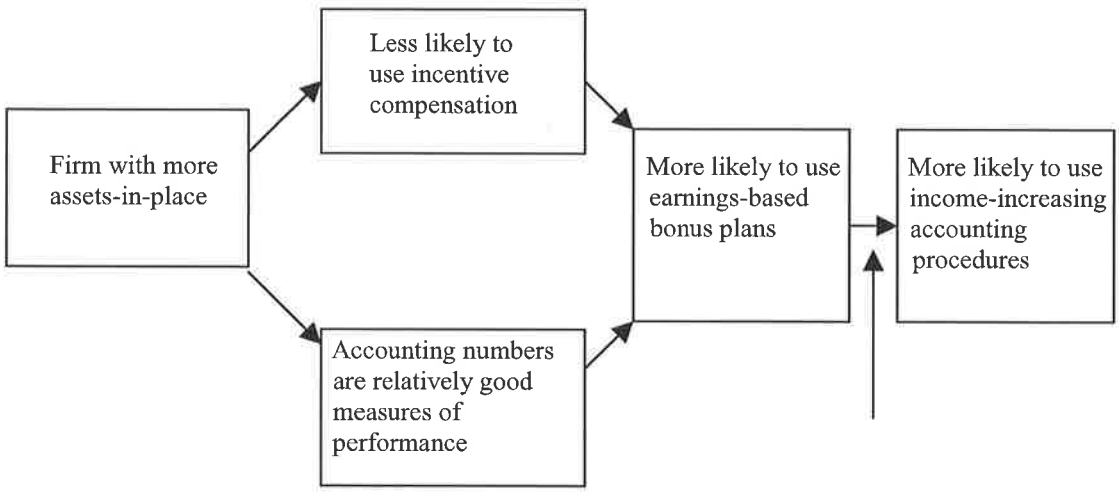
Similarly, Skinner (1993) argues that firms with low growth (more assets-in-place) will choose income-increasing accounting procedures. Skinner (1993) provides evidence of an indirect relationship between the investment opportunity set of a firm and its choice of accounting procedures. According to him, low growth firms will have the incentive to choose income-increasing accounting procedures due to their choice of accounting-based debt covenants for their public debt contracts and earnings-based bonus plans. According to Skinner (1993, p. 408):

> Specifically, firms with relatively more assets-in-place are more likely to employ (i) accounting-based debt covenants in their public debt contracts and (ii) bonus plans that tie the bonus directly to accounting earnings. Thus, managers of firms with more assets-in-place have larger incentives, given the nature of the contracts in place in these firms, to select income-increasing accounting procedures. This is evidence of an indirect relation between the IOS, through its effect on contracting, and accounting choice.

The following figure indicates the relationship between firms' investment opportunity set and their choice of accounting procedures as suggested by Skinner (1993).

Figure 2

The Link between the Investment Opportunity Set, Incentive Compensation, Accounting Earnings-Based Bonus Plans, and Accounting Procedure Choices Adapted from Skinner (1993, p. 414)



On the other hand, Dhaliwal & Heninger (1999) provide evidence of a direct link between a firm's IOS and its accounting choice. They argue that 'managers of high growth firms are concerned, not only with the level of current earnings, but also with the variance of the earnings stream' (Dhaliwal & Heninger 1999, p. 161). Thus, the relationship between a firm's IOS and its accounting choice is based upon managerial incentives to reduce the variance of accounting earnings. Dhaliwal & Heninger (1999) argue that since high growth firms have more variable earnings, they have greater incentives to select an accounting method that will result in a lower variance of reported earnings in order to reduce the variance in their earnings stream.

Finally, in relation to corporate voluntary disclosure levels, Taylor & Redpath (2000, p. 7) argue that:

> Firm's growth opportunities are directly determined from its expected future cash flows, and are therefore proprietary in nature, thus, managers of such firms will be reluctant to disclose information on their investment growth opportunities for concern that competitors will act to dissipate the value of such investments.

Empirical investigation on IOS and its relationship with voluntary corporate disclosure levels is limited and has mixed findings (Bamber & Cheon, 1998; Harris, 1998; Taylor & Redpath, 2000).

Bamber & Cheon (1998) investigate the effects of the cost of disclosure on managers' decisions on how and where to disclose earnings forecasts. In this study they provide evidence on the relation between voluntary disclosure (represented by earnings forecasts), and disclosure-related legal liability costs and proprietary information costs. Their evidence indicates that when disclosure-related legal liability costs are high, managers are more likely to issue their earnings forecasts in special press releases, and the disclosure is less specific. In their investigation on the relationship between voluntary disclosure and proprietary information costs, two indicators of proprietary information are given. These indicators are growth opportunities and product-market concentration ratios. They find a negative relationship between the growth opportunities and the degree of specificity of disclosure. Firms experiencing high growth opportunities or a concentrated product-market are more reluctant to disclose earnings

forecast. Thus, they argue that the specificity of management earnings forecasts depends on proprietary information costs. The higher the proprietary information costs, the less information management is willing to reveal and the less specific is the forecast.

Management also protects proprietary information by using segment reporting to conceal abnormal profits for business segments with greater growth opportunities (Harris, 1998). Harris (1998, p. 126) suggests that '... managers attempt to conceal information that would allow rival firms to capture their profits by not reporting less competitive operations as business segments'.

Taylor & Redpath (2000) however, find a positive relationship between an entity's IOS and the extent of its voluntary disclosure of proprietary information relevant to financial instruments for the period after the introduction of the mandatory disclosure requirements relating to financial instruments. They argue that this positive relationship is due to the effect of a dramatic fall in gold price in Australia during the period of their study, resulting in a downturn on the investment opportunities of companies involved in gold mining.

The next consideration in this study is whether the investment growth opportunities of firms are related to the size of the firms, and whether the size of the growth firms has any effect on their voluntary disclosure decisions. Findings on the relationship between investment growth opportunities and firm size have conflicting results. For example, Gaver & Gaver (1993) find that growth firms tend to be relatively large and profitable. They argue that their 'evidence contradicts the traditional notion of a growth firm as a small, struggling, start-up firm' (Gaver & Gaver 1993, p. 139). However, Ho et al.'s (2004) findings contradict Gaver & Gaver's (1993) argument that growth firms tend to be relatively large and profitable. Their study on sample firms in Hong Kong finds that growth firms are smaller and less profitable. Similarly, Baker (1993) criticizes Gaver & Gaver's (1993) argument that growth firms tend to be relatively large and profitable as being completely unconvincing. Hutchinson & Gul (2003) also confirm that growth firms are small and unprofitable.

Banz (1981) provides evidence of a strong negative relation between average return and firm size. His findings indicate that, on average, smaller firms have higher risk adjusted

returns than larger firms. Fama & French's (1992) findings are also consistent with that of Banz (1981). They argue that as the expected cash flows of management's past decisions are already impounded by the capital market into a firm's returns, any increase in returns made by a firm is due to the increase in the expected net present value of its investment growth opportunities. They thus argue that the capital market returns of smaller firms embody less value from previous investment decisions than larger firms, but more value from their greater potential for growth into larger firms. Similarly, Petty et al. (1996) argue that an increase in the value of the shares of smaller listed companies is more likely due to an increase in the value of their investment growth opportunities. That is, smaller listed companies are more likely to be growth oriented.

In summary, investment growth opportunities of a firm is directly associated with the firm's expected future cash flows. Empirical evidence reveals that this concept is related to corporate policy choices, corporate performance and governance, accounting policy choices and of relevance to this study, corporate voluntary disclosure levels. The latter studies relate to disclosures of earnings forecasts, segment reporting and financial instruments in the mining industry.

2.3.3.2 Corporate Hedging Strategies

Another key influence on management's decisions to voluntarily disclose proprietary information is the hedging strategies of the firm. Hedging reflects the underlying risk management condition of the firm, which provides a cushion against actions of opponents that might take advantage of disclosure of proprietary information.

Firms can hedge their positions either by using off-balance-sheet financial instruments such as forwards, futures, swaps, and options or alternatively, they can hedge by using on-balance-sheet financing strategies, for example by relocating their production plants to other countries.

According to Smith & Stulz (1985, p. 392):

> A firm can hedge by trading in a particular futures, forward, or option market even though it has no identifiable cash position in the underlying commodity. Furthermore, a

firm can hedge by altering real operating decisions; for instance, a merger can produce effects similar to those of hedging through financial contracts.

Even though the Modigliani & Miller (1958) model takes the position that risk management is irrelevant to a firm, as shareholders can hedge themselves by holding a well diversified portfolio, theories of corporate hedging indicate that under certain circumstances hedging can be value enhancing.

A review of the literature on corporate hedging reveals that various theoretical models have been developed to predict the factors influencing firms' decisions to hedge. These models have predicted various reasons why firms hedge. Amongst them are:

- managerial risk aversion (Stulz, 1984; Smith & Stulz, 1985)
- the structure of a firm's tax code (Smith & Stulz, 1985)
- transaction costs of financial distress (Smith & Stulz, 1985)
- signalling of managerial abilities (DeMarzo & Duffie, 1991)
- the cost of external financing (Froot et al., 1993).

Stulz (1984) argues that corporate hedging is due to managers' risk aversion. Smith & Stulz (1985) argue that the structure of the tax code, the transaction costs of financial distress and management's desire to avoid risk may induce firms to hedge. They argue that 'if excess-profits taxes or investment-tax credit increase the convexity of the tax function, then such a tax will induce firms to hedge more' (Smith & Stulz, 1985 p. 395). In addition, they argue that hedging can help firms avoid financial distress by helping managers manage their accounting numbers. They also argue that 'if the manager owns a significant fraction of the firm, one would expect the firm to hedge more, as the manager's end-of-period wealth is more a liner function on the value of the firm' (Smith & Stulz, 1985 p. 403).

DeMarzo & Duffie (1991) on the other hand, point out that even though shareholders can hedge on their own, hedging is optimal when managers who have private information about the firm's expected profits undertake it. This way managers can use hedging to signal their capabilities to investors. Froot et al. (1993) conclude that hedging can reduce the problem of under investment that would result from variations in cash flow and costly access to external financing. They argue that '...hedging adds

value to the extent that it helps to ensure that a corporation has sufficient internal funds available to take advantage of attractive investment opportunities' (Froot et al. 1993, p. 1629).

Empirical investigations on corporate hedging have focused on investigating the use of derivative financial instruments by companies. These investigations explore whether the corporate use of financial derivatives is consistent with the extant theories of hedging. Allayannis & Ofek (2001) provide evidence that firms use currency derivatives as a hedge rather than for speculative purposes. Nance et al. (1993, p. 267) from their findings suggest that '... firms which hedge face more convex tax functions, have less coverage of fixed claims, are larger, have more growth options in their investment opportunity set, and employ fewer hedging substitutes'. Mian (1996) provides strong evidence of the relationship between economies of scale and hedging. Berkman et al. (2002) argue that size of a firm and its leverage are the main reasons for the use of derivatives by industrial and mining firms in Australia.

Geczy et al. (1997) examine currency hedging activities amongst a sample of *Fortune 500* non-financial firms in 1990. Their findings indicate that 'firms with greater growth opportunities and tighter financial constraints are more likely to use currency derivatives' (Geczy et al. 1997, p. 1323). In addition, their study indicates that firms with foreign operations either use foreign-denominated debt or currency derivatives to hedge their foreign operations. They also find a positive relationship between foreign pre-tax income and sales and foreign-denominated debt, and the use of currency derivatives. Tufano (1996) examines hedging activities in the US gold mining industry in an attempt to test the conformance of firms' risk management practices with existing theories. His findings confirm the managerial risk aversion models of Stulz (1984) and Smith & Stulz (1985) that firms' corporate risk management decisions are undertaken in order to avoid risk.

Haushalter (2000) examines the commodity hedging activities of US firms in the oil and gas industry between 1992 and 1994. His findings provide evidence consistent with hedging theories of transaction costs of financial distress. He argues that there is a positive relationship between hedging and financial leverage. In addition, Haushalter (2000, p. 107) states that:

> ... the likelihood of hedging is related to economies of scale in hedging costs and to the basis risk associated with hedging instruments. Larger companies and companies whose production is located primarily in regions where prices have a high correlation with the prices on which exchange-traded derivatives are based are more likely to manage risks.

Nguyen and Faff's (2002) empirical investigations on the determinants of derivatives used by Australian companies support the financial distress hypothesis. They contend that the decision by Australian corporations to use financial derivatives is influenced by the firm's leverage, size and liquidity. In addition, Graham & Rogers (2002) in their study of derivatives holdings for firms facing interest rate risk and/or currency risk conclude that the costs of financial distress and size of firm affect derivatives use.

With the introduction of the accounting standard on financial instruments disclosure, recent studies on derivatives hedging have also focused on the extent of hedging and its effect on a firm's value. Such studies on the extent of hedging were previously not possible as most derivatives used for hedging were not required to be disclosed in the financial statements and were therefore off balance sheet. In these studies, aggregated notional values of derivative holdings were mostly used to measure the extent of hedging (for example, Allayannis & Ofek, 2001; Berkman & Bradbury, 1996; Graham & Rogers, 2002). However, Graham & Rogers (2002), in addition to using aggregated notional values, also used net notional values to measure the extent of hedging.

Haushalter (2000) find a positive relationship between the extent to which a firm hedges and its financial leverage. Allayannis & Ofek (2001, p. 295) provide evidence that 'a firm's exposure through foreign sales and foreign trade is a very important factor that both prompts corporations to hedge and guides their decision on how much to hedge'. Nguyen & Faff (2002, p. 1) conclude that 'once the decision to use derivatives has been made, a firm uses more derivatives as its leverage increases and as it pays out more dividends ...'. They also find that 'Australian companies use derivatives with a view to enhancing firms' value rather than to maximize managerial wealth' (Nguyen & Faff 2002, p. 1). On a similar note, Allayannis & Weston (2001) find significant evidence that the use of foreign currency derivatives is positively associated with firms' market value. According to them, this is because firms that use foreign currency derivatives are rewarded by investors with a higher valuation. They argue that:

> Firms that begin a hedging policy experience an increase in value above those firms that choose to remain unhedged and that firms that quit hedging experience a decrease in value relative to those firms that choose to remain hedged.
>
> (Allayannis & Weston 2001, p. 274)

In addition, Graham & Rogers (2002) provide evidence that the extent of hedging increases debt capacity and firm value.

Guay & Kothari (2003) take a different approach in their investigation of the magnitude of derivatives used by firms. Instead of using the notional values of derivative holdings to measure the extent of hedging, they use cash flow and market values sensitivity as proxies for the magnitude of derivatives use. Their findings indicate that the extent of derivatives being used by firms to hedge is small relative to their entity-level risks. However, they conclude that even though derivatives use is small, firms will only use them if their benefits outweigh their costs.

In this study, the use of derivative financial instruments for hedging purposes will be investigated from a different perspective. The study will investigate the relationship between the hedging strategies and the disclosure of proprietary information. With stronger risk management associated with hedging, firms will have a stronger financial condition to absorb potential proprietary costs from disclosure of proprietary information.

2.4 Legitimacy Theory, Media Attention and Corporate Disclosure, Political Costs and Voluntary Disclosure

Managers' willingness to disclose more information about their firms than is warranted may be due to their desire to remain legitimate. Firms want to be seen as complying with societal values as failure to comply with society's expectations can lead to sanctions being imposed on the firms by the society. Dowling & Pfeffer (1975) argue that in order for organizations to survive, they need to compete with other organizations with respect to activities that will be performed in order to remain legitimate.

> Organizational legitimacy is the outcome of, on the one hand, the process of legitimation enacted by the focal organization, and on the other, the actions affecting relevant norms and value taken by other groups and organizations.
>
> (Dowling & Pfeffer 1975, p. 125)

This study extends the applicability and predictive power of legitimacy theory and the media agenda setting theory by using these theories to underpin arguments on the impact of political costs on management's decision to voluntarily disclose additional information relating to financial instruments.

2.4.1 Legitimacy Theory

Prior researchers have used legitimacy theory to explain and analyse various organizational behaviours undertaken by organizations in order to survive. Legitimacy theory, which is derived from the concept of organizational legitimacy, posits that 'in order to continue operating successfully, corporations must act within the bounds of what society identifies as socially acceptable behaviour' (O'Donovan 2002, p. 344). Legitimacy is thus defined as:

> ... a condition or status which exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part. When a disparity, actual or potential, exists between the two value systems, there is a threat to the entity's legitimacy.
>
> (Dowling & Pfeffer 1975, p. 122)

More recently, Suchman (1995, p. 574) defined legitimacy as:

> ... a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.

Legitimacy theory assumes that there is a social contract either expressed or implied between organizations and society (Shocker & Sethi 1974). In order to remain

legitimate, organizations need to fulfil these social contracts. According to Guthrie & Parker (1989, p. 344):

> ... business operates in society via a social contract where it agrees to perform various socially desired actions in return for approval of its objectives, other rewards and its ultimate survival suggests that organizations must operate within the societal values and norms.

Thus, 'organizations "agree" to operate within certain bounds imposed by society in order to enjoy continued access to product and resource markets' (Campbell et al. 2003, p. 559).

Nasi et al. (1997, p. 298) suggest that:

> Corporations, as one kind of social arrangement, require legitimacy to maintain functional, long-term relationships with the various communities on which they depend. Corporations that lose legitimacy face a variety of difficulties, ranging from punitive legislation to difficulties in hiring personnel. The benefits associated with legitimacy, combined with social pressures toward conformity, generally lead managers of "illegitimate" corporations to act to improve the legitimacy of their company.

Legitimacy however, is not an abstract measure of the 'rightness' of the corporation but rather a measure of societal perceptions of the adequacy of corporate behaviour (Suchman 1995). Since societal norms are not static, these changing social norms and values constitute a motivation for organizational change. Complying with social norms therefore, can become a source of pressure for organizational legitimation, as such social norms and values are constantly changing. Nasi et al. (1997) point out that societal perception can change over time and different communities may have different ideas about what constitutes legitimate corporate behaviour, as legitimacy is a social construct based on cultural norms. According to them, society normally judges a corporation based on its image. Legitimacy is, therefore, a measure of the adequacy of societal perceptions of corporate behaviour compared to societal expectations for corporate activity. Thus, corporations need to manage their corporate image and societal expectations of their activity.

According to Suchman (1995) the existing literature on organizational legitimacy can be categorized into two main approaches: the institutional approach and the strategic approach. The institutional approach to organizational legitimacy takes the view that organizations respond to pressures from their institutional environments and adopt structures and procedures that are socially accepted as being the appropriate organizational choice (Carpenter & Feroz, 1992; DiMaggio & Powell, 1983; Meyer & Rowan, 1977). The institutional approach depicts legitimacy as a set of constitutive beliefs. To the institutionalist, 'legitimacy and institutionalisation are virtually synonymous' (Suchman 1995, p. 576).

On the other hand, according to Suchman (1995) the strategic approach assumes that managers have a high level of managerial control over organizations' legitimation process. Legitimation, according to this view, is purposive, calculated, and frequently oppositional.

In addition, Suchman (1995, p. 577) points out:

> ... the distinction between strategic and institutional approaches is a matter of perspective, with strategic theorists adopting the viewpoint of organizational managers looking "out" whereas institutional theorists adopt the viewpoint of society looking "in".

The strategic and institutional perspectives of legitimacy theory are reflected in Dowling & Pfeffer's (1975) suggestion that organizations take the following actions in order to remain legitimate:

> First, the organization can adapt its output, goals and methods of operation to conform to prevailing definitions of legitimacy.
>
> Second, the organization can attempt through communication, to alter the definition of social legitimacy so that it conforms to the organization's present practices, output and values.

> Finally, the organization can attempt, again through communication to become identified with symbols, values or institutions, which have a strong base of social legitimacy.
>
> (Dowling & Pfeffer 1975, p. 127)

The first action represents the institutional perspective in that an isomorphic adoption occurs within the organization to conform to societal changes. The second and third actions represent the strategic perspective of management taking control of the legitimation process.

Lindblom (1994), as quoted by Brown & Deegan (1998, p. 23) states that there are four strategies that can be undertaken by organizations in order to remain legitimate. Lindblom (1994) suggests that firms adopt any one of the following strategies:

1. the organization may seek to educate and inform its relevant publics about actual changes in the organization's performance and activities;

2. the organization may seek to change the perceptions of the relevant publics without having to change its actual behaviour;

3. the organization may seek to manipulate perception by deflecting attention from the issue of concern to other related issues through an appeal to, for example, emotive symbols; and/or

4. the organization may seek to change external expectations of its performance.

Earlier studies by Sethi (1977; 1978) also identified a strategic view of legitimation. Sethi (1977, 1978) argues that there may be times when business performance and societal expectations will differ. This gap, which is the 'legitimacy gap', may be due to certain actions undertaken by the business or due to society's changing expectations. Figure 3 illustrates Sethi's definition of a legitimacy gap.

Figure 3
Legitimacy Gap
Adapted from Sethi (1978, p. 58)

When there is a legitimacy gap, businesses must take steps to narrow the gap in order to remain legitimate. In parallel with Dowling & Pfeffer's (1975) suggestion, Sethi (1978, p. 58) suggests that businesses undertake one of the following strategies to narrow the legitimacy gap:

1. Do not change performance, but change public perception of business performance through education and information.

2. If changes in public perception are not possible, change the symbols used to describe business performance, thereby making it congruent with public perception. Note that no change in actual performance is called for.

3. In case both (1) and (2) are ineffective, bring about changes in business performance, thereby closely matching it with society's expectations.

According to Sethi (1978), a publicity campaign such as advocacy advertising can be used by businesses to counteract public scepticism of their social role or to counteract any criticism of their activities. Sethi (1978, p. 56) defines advocacy advertising as:

> Advertising that is concerned with the propagation of ideas and elucidation of controversial social issues of public importance in a manner that supports the position and interests of the sponsor while expressly denying the accuracy of facts and downgrading the sponsor's opponents

Suchman (1995) on the other hand, argues that the strategies and public disclosures undertaken by organizations differ depending on whether the organization is trying to gain, maintain or repair the legitimacy gap. On a similar note, O'Donovan (2002, p. 347) points out that:

> Legitimation techniques/tactics chosen will differ depending on whether the organization is trying to gain or to extend legitimacy, to maintain its level of current legitimacy or to repair or to defend its lost or threatened legitimacy.

Corporate disclosure policies can be viewed as an important strategic means of managing an organisation's legitimacy. There is a body of research that considers incentives for corporate disclosure from a strategic legitimacy theory perspective. In particular, empirical studies on corporate social disclosures have drawn heavily upon the concept of legitimacy theory in explaining social and environmental disclosures made by companies in their annual reports. This is because in most countries, the majority of social and environmental disclosures are voluntary. Organizations use the strategy of voluntarily disclosing information about their social and environmental issues to communicate such information to the society and their stakeholders, thereby legitimating their actions. Thus, legitimacy theory views corporate disclosure as a result of organizations reacting to their environments in order to legitimise their actions (Guthrie & Parker, 1989; Hogner, 1982; Hutchings & Taylor, 2000; Lindblom, 1994; O'Donovan 2002; Preston & Post, 1975; Woodward et al., 2001). According to Guthrie & Parker (1989, p. 344) 'corporate social disclosures may then be conceived as reacting to the environment where they are employed to legitimise corporate actions'.

Prior studies on corporate disclosures have provided evidence that firms do voluntarily disclose information in their annual reports as a strategy to manage their legitimacy (Buhr, 1998; Brown & Deegan, 1998; Campbell, 2000; Chalmers & Godfrey, 2004; Deegan et al., 2000; Deegan et al., 2002; Deegan & Gordon, 1996; Deegan & Rankin, 1996; Hutchings & Taylor, 2000; Nasi et al., 1997; O'Donovan, 2002; Patten, 1991, 1992; Woodward et al., 2001). These studies have tested the robustness of legitimacy theory by investigating management's motives for disclosing voluntary information. Findings from these studies indicate that management's decision to voluntarily disclose information is influenced by factors such as:

- negative external events (Deegan & Rankin, 1996; Guthrie & Parker, 1989; Hutchings & Taylor, 2000; Patten, 1992)
- chairmen of companies (Campbell, 2000)
- the particular type of industry (Nasi et al., 1997; Tsang, 1998)
- changes in legislation and regulation on disclosure (Buhr, 1998; Tsang, 1998)

- magnitude of reputation costs (Chalmers & Godfrey, 2004).

According to Deegan (2000, p. 256) the following are some of the arguments made for the voluntary disclosure of social and environmental information:

> A firm may provide information to counter or offset negative news which may be publicly available, or it may simply provide information to inform the interested parties about attributes of the organization that were previously unknown. In addition, organizations may draw attention to strengths, for instance environmental awards won, or safety initiatives that have been implemented while sometimes neglecting, or downplaying information concerning negative implications of their activities such as pollution or workplace accidents.

Two detailed empirical studies that investigate the use of disclosure strategies for legitimation are highlighted. First, Gray et al. (1995) analyse the trends in corporate environmental disclosure policies in the UK by conducting a longitudinal review of UK corporate social and environmental disclosure from 1979 to 1991. They argue that legitimacy theory provides some insights concerning the trends in environmental, health and safety, energy and customer disclosure in the UK. Their findings indicate that for environmental disclosure, companies in the UK are following Lindblom's (1994) first, second and third legitimation strategies in order to narrow the legitimacy gap. Companies are either changing their actual performances (Lindblom's first strategy) and using corporate social reporting to inform the relevant publics about such changes (only a significant minority), or they use corporate social reporting to change the perception of the public about their environmental performance (Lindblom's second strategy), or they use corporate social reporting to distract attention from environmental issues (Lindblom's third strategy). For health and safety disclosures, Gray et al. (1995) provide evidence that UK firms are using corporate social reporting to convince the relevant publics of their concern about protecting and training their workforce. Because of this, companies are following Lindblom's (1994) second strategy, which is to seek to change the perception of the relevant publics without necessarily improving health and safety records. As for energy and customer disclosure, their evidence indicates a very low incidence of disclosure for these issues throughout the period of their study. They

conclude that disclosures concerning energy and customers were not legitimacy issues during the period of their study.

Second, O'Donovan (2002) investigates the relationship between the extent of environmental disclosure in the annual report and attempts by organizations to gain, maintain and repair their legitimacy. Senior personnel from three large Australian public companies (BHP Ltd, Orica Ltd and Amcor Ltd) were interviewed. O'Donovan's (2002) findings support legitimacy theory. His findings indicate that the legitimation tactics chosen by an organization were based on the perceived significance of the issues to the organization and the particular purpose of the legitimation response. No environmental disclosures were made in the annual reports relating to issues perceived as of low significance to organizations, however issues that attracted strong and immediate negative public reaction received quick and very public responses from corporations in their attempt to avoid loss of reputation. O'Donovan (2002) concludes that organizations use annual reports to voluntarily disclose environmental information in order to present themselves in a positive manner. Similarly, Deegan et al. (2000, p. 101) point out that 'organizations utilize their annual report as a means of influencing society's perception of their operations, and as a means of legitimising their ongoing existence'. Cormier & Gordon (2001, p. 590) also argue that 'accounting and financial reporting represent ways an organization communicates with society and its stakeholders, thereby legitimating its actions'.

Even though these studies provide evidence that voluntary corporate disclosures are made by companies as legitimation strategies, other findings are not consistent. For example, Campbell et al. (2003), Guthrie & Parker (1989), O'Dwyer (2002), and Wilmshurst & Frost (2000) find limited support for legitimacy theory. Guthrie & Parker (1989) undertook an historical appraisal of social disclosures made by BHP Ltd, one of Australia's largest companies in the steel industry over a period of 100 years since the company's incorporation in 1885. From the content analysis of BHP Ltd's annual reports, the extent of corporate social reporting was measured across six main themes; environment, energy, human resources, products, community involvement, and others. Guthrie & Parker (1989) test the concept of legitimacy theory in their study by matching the peak disclosure periods with periods of significant social, economic or political events affecting the company. Their evidence fails to confirm legitimacy theory

as an explanation for BHP Ltd's corporate social reporting throughout the 100 years. The company's corporate social disclosures did not correspond to key socio-economic events affecting BHP Ltd during its operating history. They conclude:

> As in the case of US Steel, BHP's corporate reports were found to exhibit a variable pattern of total social disclosure levels over their history. While disclosures in these companies' reports to shareholders have occurred over many decades, such disclosures did not extend to any significant attempts at candid appraisal of their social performance.
>
> (Guthrie & Parker 1989, p. 351)

In an attempt to update the work of Guthrie & Parker (1989), Deegan et al. (2002) investigate the corporate social and environmental disclosures made by BHP Ltd over a 15-year period from 1983-1997. Their evidence provides a strong relationship between BHP Ltd's disclosure policies and community concerns, thus supporting legitimacy theory. They argue that the failure of Guthrie & Parker (1989) to confirm legitimacy theory in their study could be due to the following: firstly, that it could be 'at least in part, due to deficiencies in the way they constructed their measure of community concern' (Deegan et al. 2002, p. 313). Secondly, that there might be a time lag between the occurrence of social and environmental events and disclosure reactions, which the study fails to detect.

Campbell et al. (2003) argue that legitimacy theory may not be the reason for the variations in social disclosure amongst companies in three FTSE sectors in the UK. In examining the effects of voluntary social reporting, Campbell et al. (2003) find that companies that are more 'sinful' due to the nature of their activities, and would be expected to disclose more social information, do not always do so. Their findings also indicate that companies that face similar societal perceptions of 'sinfulness' do not have comparable patterns of social disclosure. They argue that the reason for their failure to find a relationship between social disclosure and the desire to narrow the legitimacy gap could be due to the distorting perception of the legitimacy threatening factors by managers of the companies involved, resulting in different volumes of social disclosures made. They also suggest that the use of other forms of media to disclose social

information (rather than through the annual report) could explain their mixed results. Campbell et al. (2003 p. 574) provide the following explanation for their failure to confirm legitimacy theory:

> First, it may be the case that companies do not see social disclosure as a means to close legitimacy gaps with regard to society's perception of their behaviour... Second, it may be that companies do seek to use social disclosure as a legitimation strategy but their varying perceptions of the size of their legitimacy gap precipitates different volumes of social disclosure ... Third, disclosures intended to legitimate might be thought of as futile and therefore unnecessary ... If a given company is thought to be illegitimate, attempts to re-legitimate may be met with suspicion or even contempt by some stakeholders ... Fourth, it may be that companies do seek to use social disclose to close legitimacy gaps but employ a range of media for so doing, depending on the stakeholder they particularly wish to communicate to or possibly appease.

Wilmshurst & Frost (2000) investigate the relationship between the environmental factors perceived as important by management and the observed disclosures made by these firms in their annual reports. Their results indicate that management considers the information needs of shareholders and legal issues as most important. They find positive associations between the environmental disclosures made in the annual reports and shareholder's rights to information, customer concerns, supplier concerns, financial institution concerns, community concerns and the provision for a 'true and fair view' of the operation. However, even though legal factors are considered as important by management, this consideration does not appear to translate into actual disclosure quantity. Wilmshurst & Frost (2000) conclude that their study provides limited support for legitimacy theory as an explanation for the decision to voluntarily disclose environmental information. Even though management is responding to the information needs of stakeholder and community concerns, they are not however responding to the restriction of activities with respect to the environment, for example restrictions imposed by environmental lobbies or legal entities.

O'Dwyer (2002) investigates managerial perceptions of their motives for corporate social disclosures (CSD) in Ireland. Senior executives were interviewed to obtain insights into their perceptions in order to understand corporate social disclosures made

in the annual reports. By contrast to Australian studies where corporate social disclosures in annual reports are an effective legitimation vehicle (O'Donovan 1999), in Ireland, due to the demanding and questioning public, corporate social disclosures are perceived by management as not being a valid legitimation strategy. According to O'Dwyer (2002, p. 426):

> The perspectives gained suggest that while CSD may occasionally form part of a legitimacy process, ultimately this is doomed to failure in that a state of legitimacy is rarely attained. In fact, CSD is often perceived as possessing the potential to engender rather than diminish societal scepticism in an environment where public pressure is keenly felt by many organizations.

O'Dwyer argues that management perceive their attempt to remain legitimate by voluntarily disclosing environmental issues in the annual reports to be futile, as such disclosure will lead to increased scepticism and heightened public demand for action on such issues. Corporate social disclosure through the annual report is thus perceived by management of Irish companies as not being an effective method of maintaining or re-establishing legitimacy. Thus, companies that disclose social and environmental issues with legitimacy motives in mind will discontinue such practices. O'Dwyer argues that even though environmental disclosures exist in the annual reports of the Irish companies that were interviewed, such disclosures 'may be due to motives that lie outside legitimacy theory explanation' (O'Dwyer 2002, p. 427).

Another feature identified as affecting disclosures by companies as a legitimation strategy is the industry effect on disclosures. Negative external events have an impact on the voluntary disclosure of environmental information amongst companies within the same industry (Hutchings & Taylor, 2000; Patten 1992). Patten (1992) investigates the change in annual report disclosure relating to environmental issues by petroleum firms (other than Exxon) following the Alaskan oil spill by a supertanker owned by Exxon, the *Exxon Valdez.* His findings provide support for legitimacy theory, as firms in the same industry increased their environmental disclosure following the incident.

Hutchings & Taylor (2000) in their study of intra-industry effects of a highly publicly exposed corporate environmental event, investigate the responses of both the investors

(through capital market effects) and management of the companies (through corporate annual reporting). Their evidence supports the presence of intra-industry effects on corporate environmental disclosure, indicating that management responded to the negative environmental event by voluntarily providing more environmental disclosure in the year following the negative environmental event. Hutchings & Taylor (2000) argue that an increase in the level of corporate environmental disclosure suggests the existence of a strong motive on the part of management to legitimise their activities. They find some evidence to support the existence of a negative intra-industry effect on the capital market. Companies in the same industry and in the same geographical location where the negative environmental event occurred experienced negative abnormal return. Hutchings & Taylor argue that the perceived threat to legitimacy due to a negative incident within the industry prompts reaction by other firms to voluntarily disclose environmental information in order to remain legitimate.

Another intra-industry study is by Nasi et al. (1997) who conclude that managers of firms from particular industries, because of the unique nature of the industry, voluntarily disclose more environmental information than other industries in order to remain legitimate. Nasi et al. (1997) investigate the applicability and usefulness of legitimacy theory in a case study of 4 large forestry companies in Finland and Canada. Forestry industry was chosen in this study because of the social issues relating to this industry arising from the pollution of air, water and soil by paper mills. Nasi et al. (1997) focus on Sethi's (1978) proposed strategies for narrowing the legitimacy gap. Their findings indicate that management activities are driven by the existence of legitimacy gaps and management will undertake any one of the strategies suggested by Sethi (1978) to narrow the legitimacy gap. However, management's choice of a strategy is dependent upon which strategy gives the highest possibility of success at the lowest cost. Thus, they conclude that:

> Legitimacy theory seemed to have explanatory validity in terms of why managers are pressed into action but provided little insight into which strategy would be more appropriate at a particular time.
>
> (Nasi et al. 1997, p. 237)

The concept of legitimacy theory has also been tested in developing and newly industrialized countries. Tsang (1998) investigates corporate social reporting in Singapore. His study was conducted over a ten-year period from 1986-1995 and covers three industries in Singapore, the banking, food and beverage and the hotel industries. His evidence indicates a steady increase in the total number of disclosures during the late 1980s followed by a stable level of disclosure since 1993. Tsang (1998) argues that the increase in social disclosures in the 1980s is due to the increase in companies' awareness of social responsibilities as a result of government campaigns. However, once a certain level of voluntary disclosure has been achieved, companies are not motivated to voluntarily disclose more information, resulting in the stable level of disclosure in the 1990s. His findings also indicate that the two tobacco companies in the food and beverage industries disclose more social information than the other food and beverage companies. Tsang (1998) suggests that these companies are striving for legitimacy by increasing social disclosure in their annual reports as a result of the increase in anti-smoking campaigns and restrictions undertaken by the Singapore government.

Chalmers & Godfrey (2004) use the institutional approach to legitimacy theory to study changes in voluntary disclosure of derivative instruments in Australia. Chalmers & Godfrey (2004) investigate managers' responses to societal and institutional pressures for derivative financial instruments disclosures in the annual reports. Drawing on legitimacy and institutional theories, they premise that managers will conform to community values, professional body requirements, and peer practices by voluntarily disclosing derivative financial instruments information in order to maintain or enhance their financial reporting reputation. They argue that the extent of voluntary disclosure of financial derivatives is related to the magnitude of reputation costs confronting these managers and their firms. Therefore, companies are willing to voluntarily disclose derivative information in order to avoid incurring reputation costs due to non-disclosure. They argue that the increased public scrutiny due to the increasing use of derivative financial instruments by companies in financing their operations, and the media reports associated with derivative financial disasters, have resulted in an increased demand for the transparency of derivative activities.

2.4.2 Media Attention and Corporate Disclosure

As explained in the previous sections, when business performance and societal expectations are different, a legitimacy gap may be created. As suggested by Nasi et al. (1997) this could arise when information about a firm which was previously unknown to the public is exposed by parties such as journalists. Thus, the media may play a role in influencing management's decision to voluntarily disclose corporate information.

The community at large would normally be aware of particular incidents happening either locally or abroad through some form of media coverage given to the particular incidents. Media agenda setting theory takes the perspective that extensive media coverage of an incident has the ability to influence or shape community perceptions about a particular issue. The theory posits a relationship between the relative emphasis given by the media to various topics (media agenda) and the public's perception of the importance of these topics, (public agenda) (Brown & Deegan 1998, p. 25). According to Brown & Deegan (1998, p. 25):

> In terms of causality, increased media attention is believed to lead to increased community concern for a particular issue. The media are not seen as mirroring public priorities, rather, they are seen as shaping them.

A review of the literature indicates that media agenda setting effects have been widely investigated using media agenda setting theory. (Ader, 1993; Brown & Deegan, 1998; Deegan et al., 2002; Funkhouser, 1973; Gross & Aday, 2003; Mc Combs & Shaw, 1972; Neuman, 1990; Smith, 1987; Winter & Eyal, 1981). These studies investigate the importance assigned to issues by the media (media agenda) with subsequent public salience placed on those issues (public agenda). These studies conclude that media coverage plays a role in changing the public perception of the importance of particular issues. In addition, these studies also provide evidence that media agenda typically precedes public concern for particular issues.

One of the earlier studies on the function of the mass media in determining important issues is that of McCombs & Shaw (1972). To investigate the agenda-setting capacity of the mass media, their study focused on the 1968 US presidential campaign in Chapel Hill, North Carolina. Their conclusion is 'voters tend to share the media's composite

definition of what is important strongly suggests an agenda-setting function of the mass media' (McCombs & Shaw, 1972 p. 184).

The intensity of, and the way in which, the media covers an issue can also affect public attitude. Brosius & Kepplinger (1990) find that the intensity of media coverage has an impact on public agenda. Funkhouser (1973) investigates the relationship between news media coverage and public opinion of those issues and the relationship between news media coverage and the realities underlying those issues. His findings indicate that the amount of media attention given to an issue has an influence on pubic opinion regarding the issues, but not the realities underlying those issues. According to Funkhouser (1973, p. 74):

> ... the amount of media attention given to an issue strongly influences its visibility to the public. However, the amount of media attention does not seem to relate as closely to public attitudes concerning the issues and related policies.

Public concerns and the media agenda are not necessarily reflective of 'real world' conditions (Ader, 1993). According to Ader (1993, p. 310) 'the public needs the media to tell them how important an issue the environment is. Individuals do not learn this from real world cues'. In addition, Anderson (2002) points out that the prominence of an issue is not necessarily reflective of public opinion about the issue, but rather due to the influence of the media. Anderson (2002) examines the strategies adopted by various news sources in influencing the symbolic representation of public issues. He advises great caution in interpreting a causal link between news media coverage and public attitudes, arguing that the news media representation is a result 'of a battle among a selective range of news sources, each seeking to provide their own definition of the public representation of the issues' (Anderson 2002, p. 7). He further comments that:

> News coverage is the outcome of a series of struggles between potential news sources to define and shape the meaning of the event. The prominence of an environmental issue does not reflect levels of public opinion in any simplistic manner, to a large extent it is influenced by the activities of news sources or 'issue sponsors'.
>
> (Anderson 2002, p. 11)

He also points out that 'the more an issue resonates with the dominant cultural values that individuals identify with, the more likely it will make a significant impact' (Anderson 2002, p. 14).

Zucker (1978) investigates the influence of the nature of the issues being addressed by the media on public attitudes. Zucker (1978) argues that the nature of the issues being addressed by the media (obtrusive or unobtrusive), influences public attitudes. According to Zucker (1978), obtrusive issues are issues which people have direct experience with, or knowledge of, while unobtrusive issues are issues which people may not have direct experience with. Zucker (1978) concludes that for unobtrusive issues, people will depend more on the news media for information and interpretation.

Gross & Aday (2003) investigate both the intensity of media coverage and the nature of the issues being covered by the media. Their findings support the claim that constant emphasizing of certain issues by the news media has an effect of leading the audience to think more about an issue, thereby making the issue more salient. They investigate the influence of the constant exposure of an issue by local television news and the agenda-setting effect. They argue that it is the public's direct experience of the issue that influences their reaction to the issues, rather than exposure to news media. Thus, the reaction by the public towards an issue is related more to their direct experience of the issue, than to exposure to the issue by the news media. The constant emphasizing of the issue by the media merely makes the issue more important to the public.

A matching public agenda that lags behind the media coverage of a particular issue must be shown to exist in order to accept the media agenda-setting hypothesis (McCombs & Shaw, 1994). Various studies on the associated time lag relating to media coverage of an issue have been conducted (Brown and Deegan, 1998; McCombs et al., 1975; McCombs et al., 1995; O'Donovan, 1999; Salwen, 1988; Stone & McCombs, 1981; Winter & Eyal, 1981). The evidence from these studies suggests that the time lag between extensive media coverage of an issue and the subsequent public emphasis on the issue will vary depending upon the issue in focus. McCombs et al. (1975) as cited by Winter & Eyal (1981, p. 377) suggest that 'the optimal effect span between aggregate media attention and public priority is between two and five months, and ... the impact is a cumulative one, with exposure over time leading to enhanced public

salience'. However, Winter & Eyal (1981) provide evidence that for civil rights issues, the optimal effect span is between four to six weeks. In addition, Winter & Eyal (1981, p. 381) argue that 'it is recent media emphasis rather than cumulative effects over time that leads to public salience'. Brown and Deegan (1998) and O'Donovan (1999) also suggest that there could be time lags from media attention to eventual disclosure in firms' annual reports. Deegan et al. (2002) examine the possible existence of time lag effects in social and environmental disclosure in annual reports. Their findings however, fail to confirm the presence of the time lag effect. They argue that this is reasonable, as annual reports of Australian companies typically are not released for approximately ten weeks after balance sheet date, thus companies have at least ten weeks to make social and environmental disclosures within the annual report in relation to the media attention for the financial year.

The most common news media forms are television, radio and newspapers. However, prior studies are in agreement that the print media is the most effective in changing public perceptions (Bogart, 1984; Mc Combs, 1981; McCombs & Shaw, 1994; Mutz & Soss, 1997; Stempel & Hargrove, 1996). McCombs (1981) argues that newspapers tend to have a greater ability to set the public agenda. Similarly, Bogart (1984, p. 719) concludes that 'newspapers and television complement each other but the newspaper's ability to cover the news in detail and in depth remains a major advantage'. McCombs & Shaw (1994, p. 382) state that 'the print media is better able to point out its significance to the reader by framing a story within a larger context'. Stempel & Hargrove (1996, p. 557) confirm previous findings by concluding that 'it is newspaper reading and not television which relates most to voting behaviour'. Mutz & Soss (1997) argue that even though newspaper coverage may not be able to bring about changes in the opinion of individual members of society or change their perception of the salience of an issue at a personal level, the constant emphasis on an issue by newspapers has 'important effects on citizens' perceptions of the salience the community as a whole attaches to an issue and on their perceptions of the dominant opinion climate within their communities' (Mutz & Soss 1997, p. 431). Thus, by having the ability to change community perceptions of an issue, newspapers have the capacity to bring about policy changes in the community. Gunther (1998) argues that people use the content of current media coverage to infer public opinion based on the assumption that media coverage has a persuasive impact in shaping public opinion.

The influence and effect of the media on management's voluntary disclosure decisions have been investigated by researchers in the area of social and environmental disclosures (Brown & Deegan, 1998; Deegan et al., 2000; Deegan et al., 2002). Brown & Deegan (1998) test the use of legitimacy theory and media agenda-setting theory in their study on the public disclosure of environmental performance information by Australian companies. They investigate the relationship between the attention given by the print media on an industry's environmental issues and the extent of environmental disclosure in the annual report. They argue that the media attention given to an industry's environmental performance is perceived by management as having an affect on the legitimacy of the organization, thus resulting in greater environmental disclosure. Their findings indicate significant relationships on six of the nine industries investigated. They conclude that the variations in corporate disclosure are associated with variations in the level of media attention given on environmental issues, even though not all industries react in the same manner.

With the advancement in information technology, the media is able to exert its influence on public issues on a global scale. Deegan et al. (2000), in addition to investigating the reactions by Australian firms to major social incidents within the country, also investigate the reactions of Australian firms to major overseas incidents. They argue that:

> With global information networks, a major corporate disaster which is associated with a particular overseas industry will become known throughout the world and may lead society within another country to question the potential costs (and the legitimacy) that similar organizations within its own country may generate. Local organizations will arguably need to distance themselves from the overseas incident, perhaps by disclosing how their safety, emergency response plans, and the like, are superior to those in place where the incident occurred.
>
> (Deegan et al. 2000, p. 106)

Their findings confirm legitimacy theory in that firms react to the major social incidents by changing their disclosure levels and including positive incident-related disclosures in their annual reports after the incident. The disclosure reactions of the firms suggest that firms' reactions are due to specific major incidents rather than to social issues in

general, and there is no difference in the reaction of Australian firms even though the incidents occurred overseas. In addition, Deegan et al. (2000) suggest that the degree of media attention and the environmental impact of the incidents influence management's disclosure decisions.

Cormier & Magnan (2003) take a different perspective on the relationship between media and corporate reporting. They investigate the influence of media visibility on firms' corporate environmental reporting strategies. Their findings indicate that there is a relationship between corporate environmental reporting and a firm's media visibility. They argue that 'the benefits from an active environmental reporting strategy are magnified if external stakeholders closely monitor a firm' (Cormier & Magnan 2003, p. 48). Their studies use the intensity of a firm's press coverage (media visibility) to proxy for the active monitoring by stakeholders. Thus, firms that are actively monitored by the media voluntarily disclose more environmental information as such disclosures provide additional benefits to these firms.

In summary, it has been shown that heightened media attention, particularly print media attention, to a corporate issue can create a legitimacy gap for implicated firms. This will create a management incentive to increase corporate disclosure to minimize any political costs. In fact, it is when issues highlighted by the media are unfavourable or negative that firms increase their disclosure. Dearing & Rogers (1996) argue that negative media attention is more likely to be regarded by the community as an important concern. Hutchings & Taylor (2000) provide evidence that the level of environmental disclosure increases significantly during the period before and after highly publicized 'bad news' relating to a corporate environmental event. Deegan et al. (2002) find a positive relationship between print media coverage and social and environmental disclosures made in the company's annual reports. They are in agreement with evidence provided by Deegan et al. (2000), O'Donovan (1999) and Brown & Deegan (1998) that management will use the annual reports to counter unfavourable media coverage about the company in order to maintain legitimacy. They also point out that the unfavourable print media coverage leads to higher levels of specific positive social and environmental disclosures in the company's annual reports.

Negative media attention relating to failures of companies as a result of using financial instruments to finance their operations exposed other companies that are using financial instruments to finance their operations to higher levels of public scrutiny. In this study, the robustness of the strategic approach to legitimacy theory is tested by investigating the voluntary disclosure of financial instruments-related information of companies in periods during which there was a major publicized corporate scandal and failure as a result of using financial instruments to finance operations. Because of the negative media attention relating to such a failure, a perceived legitimacy gap was created between business performance and social expectations, which could have influenced management's decision to voluntarily disclose financial instruments-related information. Thus, companies that were using financial instruments (particularly derivatives that have been 'off-balance sheet') have greater incentives to voluntarily disclose information related to these instruments in their annual reports. Such disclosure could help them remain legitimate and avoid incurring political costs, which can take the form of greater demand from shareholders and debt holders and greater regulation by government and professional bodies. This management of a legitimacy gap by increased voluntary disclosure can be particularly evident for companies in the same industry. Patten's (1992) findings, for example, provide evidence that negative external events have an impact on the voluntary disclosure of related information for companies in the same industry.

2.4.3 Political Costs, Firm Size and Voluntary Disclosure

A firm is said to be politically visible when it 'attracts a disproportionate share of scrutiny by politicians, organized groups such as trade unions, and the general public, making it a potential target for the imposition of political costs'(Lim & McKinnon, 1993 p. 192). Whittred & Zimmer (1990, p. 32-33) defined political costs as 'wealth re-distributions away from the entity to the government and other sectors of the economy'. Based on the original work of Watts & Zimmerman (1978, 1986) the political costs hypothesis states that 'the political sector has the power to effect wealth transfers between various groups' (Watts & Zimmerman 1986, p. 115). According to Watts & Zimmerman (1978), political costs include all expected costs (wealth transfers) imposed on a firm from potential adverse political actions involving antitrust, regulation, government subsidies, taxes, tariffs etc. However, this notion of wealth redistribution away from corporations as a result of intrusion by politicians into the affairs of

corporations comes from earlier studies by Jensen & Meckling (1978), Peltzman (1976) and Stigler (1971).

Holthausen & Leftwich (1983) argue that a firm's political visibility is affected by its reported accounting numbers. This is because accounting numbers are used by parties such as consumers or politicians as a basis for them to criticize or support these firms. Thus, prior studies have identified that a firm's political visibility influences its accounting policy choice and its voluntary disclosure practices (Aggarwal & Simkins, 2004; Belkaoui & Karpik, 1989; Cahan, 1992; Daley & Vigeland, 1983; Deegan & Caroll, 1993; Deegan & Hallam, 1991; Han & Wang, 1998; Hutchings & Taylor, 2000; Key, 1997; Lemon & Cahan, 1997; Lim & McKinnon, 1993; Patten & Trompeter, 2003; Sutton, 1988; Taylor & Redpath, 2000; Wong, 1988).

According to Watts & Zimmerman (1986), the corporate sector is especially vulnerable to this wealth redistribution as they may be subjected to intense lobbying by certain groups of voters which will in turn encourage elected officials to take action against the corporation. Such action can be in the form of nationalizing, expropriating, breaking-up or regulating the industry or corporation. Thus, to counter these potential government intrusions, Watts & Zimmerman (1986) argue that managers of such firms will adopt various strategies such as social responsibility campaigns in the media, government lobbying, and the selection of accounting procedures to minimize reported earnings. Thus, firms that have contacts (actual or potential) with the government directly through regulation or procurement, or indirectly through possible governmental intervention, can affect their future cash flows by discouraging government action through the reporting of lower net incomes (Watts & Zimmerman 1978). Watts & Zimmerman (1978) conclude that political cost is an important factor affecting management's attitude.

Empirical investigations confirm that firms manage their earnings in order to report lower income in periods of heightened political scrutiny either by way of accounting method choice or by manipulating discretionary accruals (Cahan, 1992; Cahan et al., 1997; Daley & Vigeland, 1983; Han & Wang, 1998; Jones, 1991; Key, 1997). Firms that are politically visible will choose accounting policy that will result in lower reported income to hide their large earnings increases, in order to avoid political

scrutiny. This literature on earnings management is not reviewed because it is not directly relevant to this study.

While one branch of studies on the political costs hypothesis focuses on earnings management, there is another branch that is relevant to this thesis, which investigates the relationship between voluntary disclosure and political costs. One of the earlier works conducted to test Watts & Zimmerman's (1986) arguments that managers of politically visible firms will disclose more information is that of Belkaoui & Karpik (1989). They argue that since the decision to disclose social information can result from an outlay for social performance that reduces earnings, politically visible firms have the incentive to make such social disclosures.

Recent studies such as that of Lemon & Cahan (1997) and Patten & Trompeter (2003) also investigate the relationship between firms' environmental and social disclosures and their political visibility. Other studies use the political cost hypothesis to explain specific voluntary disclosure decisions, for example, disclosures of currency derivatives (Aggarwal & Simkins, 2004), disclosures by statutory authorities (Lim & McKinnon, 1993), disclosures of value added statements (Deegan & Hallam, 1991), disclosures as an incentive for reporting excellence awards (Deegan & Caroll, 1993) and disclosures of governance related information (Cullen & Christopher, 2002).

Patten & Trompeter (2003) investigate the effect of political costs on firms that were affected by a particular environmental event. They investigate a sample of 40 US chemical firms following the December 1984 chemical leak at Union Carbide's Bhopal, India plant. Patten & Trompeter (2003) conclude that corporate management uses environmental disclosure as a tool for addressing exposure to potential regulatory costs, and that decisions to manage disclosures are tied to a larger corporate political strategy. Their findings indicate that in the year of the leak (1984) the chemical firms took significant steps to manage their disclosures, especially firms with lower levels of environmental disclosures in the 1983 annual reports (the year before the leak). Thus, firms with higher levels of environmental disclosures need not manage their corporate disclosures as much, since the environmental disclosures reduce their exposure to the impact of political costs.

Similarly, Lemon & Cahan (1997) use the political cost framework to examine environmental disclosures made by New Zealand firms before and after the enactment of the Resource Management Act (RMA) in New Zealand. They argue that because of the varying degree of political visibility amongst firms, firms that are politically visible will disclose more environmental information after the introduction of the RMA in order to avoid the imposed legal responsibilities and possible monetary penalties on their firms as a result of public awareness of environmental issues due to the passing of the RMA. They argue that their findings confirm the political costs hypothesis. Firms operating in environmentally sensitive areas, and which are politically visible, are more likely to increase their relative environmental disclosures after the RMA in order to avoid incurring political costs.

Lim & McKinnon (1993) extend the investigation of political costs hypothesis to the public sector by investigating the voluntary disclosure practices of statutory authorities in New South Wales, in 1984, one year prior to the enactment of legislation in 1985, which mandated disclosure requirements of financial and non-financial information for statutory authorities in that state. Lim & McKinnon (1993) in testing the political costs hypothesis distinguish between the types of information that can be voluntarily disclosed by the statutory authorities under investigation: information of a sensitive nature and information of a non-sensitive nature. Their evidence supports the political costs hypothesis. Their findings indicate that statutory authorities that are politically visible voluntarily disclose more information of a non-sensitive nature. They did not find any positive correlation between political visibility and the disclosure of sensitive information. They argue that the voluntary disclosure of non-sensitive information on the part of the politically visible statutory authorities is consistent with the desire to favourably manage their political visibility in order to avoid the imposition of political costs.

According to Lim & McKinnon (1993, p. 212):

> In the case of disclosure of information of a non-sensitive nature, the behaviour is directed towards decreasing political visibility. In the case of sensitive information, its non-disclosure is an attempt to avoid an increase in such visibility.

Deegan & Hallam (1991) provide evidence that management is willing to voluntarily disclose value added statements in order to reduce the political costs imposed on the firm by employees of the firm, their related unions and the government. Deegan & Caroll (1993) argue that firms that are politically visible are more likely to apply for a reporting excellence award since, as a winner of the award, the firms will be able to enhance their image and in turn decrease the possibility of wealth transfers from the firms. Cullen & Christopher (2002) argue that the incentive motivating the disclosure of governance information by Australian mining companies in their annual reports is the belief that it will reduce political costs. They provide evidence that management's decision to report governance information in the annual report is significantly influenced by firm size, ownership diffusion, gearing, and Big 6 external auditor.

However, a contradictory view is taken by Aggarwal & Simkins (2004) who argue that firms that are large and politically sensitive will voluntarily disclose less information about their hedging strategies in order to reduce the impact of political costs. They provide evidence that large firms and firms that are leaders in their industry voluntarily disclose less information relating to currency derivatives.

Prior studies on voluntary disclosures have not discriminated between the disclosure of proprietary and non-proprietary information in their investigation of the political costs hypothesis. Even though Lim & McKinnon (1993) in their investigation of political costs distinguish between the voluntary disclosure of sensitive and non-sensitive information, their study was targeted at the public sector. In addition, the conflicting findings of Aggarwal & Simkins (2004) on the voluntary disclosure of currency derivatives for politically sensitive firms warrants further investigation.

In this study, the impact of political costs on management's voluntary disclosure decisions is investigated for firms that are larger in size, which is a surrogate for political visibility or exposure of the firm to scrutiny by stakeholders and the public. A lack of disclosure by politically visible, large, firms can heighten the notion of a legitimacy gap in the minds of relevant external stakeholders.

The relationship between firm size and disclosure strategies that seek to manage political costs is well established. Watts and Zimmerman (1978, p. 115) suggest that

'the magnitude of the political costs is highly dependent on firm size'. They argue that larger companies are more politically visible and this may cause resentment towards them due to their perceived market power and wealth. Belkaoui & Karpik (1989, p. 40) argue that 'politically visible firms are generally of larger size, have greater capital intensity and have relatively high systematic market risk'. Dowling & Pfeffer (1975) argue that larger firms are more politically visible, thus they are expected to engage more heavily in legitimating behaviour. Both Patten (1992) and Hutchings & Taylor (2000) find that the increase in environmental disclosure amongst companies in the same industry due to a negative external event is related to firm size. They conclude that the increase in disclosure amongst larger firms is because larger firms are subject to more social and political pressure to remain legitimate than their smaller counterparts.

Ball & Foster (1982) criticize the use of firm size as the only proxy for political costs. Bowen et al. (1981) suggest that firm size on its own may not capture a firm's political costs. Holthausen & Leftwich (1983) and Watts & Zimmerman (1986) suggest that researchers must develop better proxies for political costs and they identify subsidies, tax credits, deductions etc as forms of wealth transfers. Recent studies have explored other proxies for political costs. Sutton (1988) uses profit margin; Wong (1988) uses reported tax rates and export credit sales as proxies for political costs. Lemon & Cahan (1997), in addition to firm size, also use capital intensity, tax rate, market share, return on assets and number of shareholders as proxies for political visibility. Similarly, Aggarwal & Simkins (2004) in addition to size use the firm's ranking within the industry to proxy for political costs. While this study will use company size as the proxy to measure exposure to political costs, it does recognize the limitation of this measure.

2.4.4 Probability of Financial Distress and Corporate Disclosure

According to Fehle & Tsyplakov (2005) a firm is in financial distress when the firm's leverage is above a critical level and the cash flow cannot cover debt payments. Financial distress can lead a firm into reorganization or other situations in which the firm faces direct legal costs or even liquidation of assets. To reduce the probability of encountering financial distress, Mayers & Smith Jr (1982) and Smith & Stulz (1985) suggest that companies hedge, as hedging will reduce the variance of a firm's cash flows or accounting profits, and thus the expected costs of financial distress. Nance et al. (1993) argue that firms can reduce the expected financial distress and agency costs

associated with long term debt by maintaining greater short term liquidity. They argue that the greater a firm's quick ratio and the lower its dividend payout ratio, the lower its need to hedge to reduce the expected financial distress and agency costs of straight debt.

Bond covenants normally use accounting numbers to define states where the firm's activities are restricted. According to the debt covenant hypothesis, managers have incentives to make financial reporting decisions that reduce the likelihood that accounting-based covenants in their firms' debt agreements will be violated (Dichev & Skinner, 2002 p. 1094). Firms must manage their accounting numbers so that bond covenants do not become binding. If bondholders exercise covenants, the company's management is likely to incur costs. There may be penalties for covenant breaches such as the liquidation of assets or restrictions placed on the use of these assets, which will lead to limitation on, or even removal of, the current management. Daley & Vigeland (1983) argue that firms' debt covenants influence managers' choice of accounting methods. Firms with restrictive covenants in debt agreement will choose accounting methods that will result in higher reported income in order to relax debt constraints. This way the firms will be able to persuade bondholders against exercising the bond covenants. Dichev & Skinner (2002) provide evidence that managers take action to avoid debt covenant violations.

Of relevance to this thesis is the relationship between financial distress and voluntary disclosure relating to financial instruments. A review of the literature 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). For example, Ahmed & Nicholls (1994) and Chow & Wong-Boren (1987) find no significant association between leverage and the extent of voluntary disclosure. Similarly, in the context of voluntary disclosure of derivative financial instruments, Chalmers & Godfrey (2004) find no significant relationship between leverage and firms' voluntary disclosure of derivative financial instruments.

Taylor & Redpath (2000) argue that firms that are coming closer to breaching debt covenants are more likely to provide further voluntary disclosure of positive

information. They argue that there will be a leverage level at which managers will be prepared to voluntarily disclose additional information about expected cash flows, in order to inform bondholders of the likelihood that the company's condition can improve without the need to exercise bond covenants. They investigate the relationship between company's voluntary disclosure of proprietary information and its level of leverage for the year before and after the introduction of AASB 1033. Their findings indicate that leverage is positively related to voluntary disclosure for the year after the introduction of the standard but not for the year before. They conclude that the limited evidence of this positive relationship gives some support for the hypothesis that companies coming closer to breaching debt covenants are more likely to provide further voluntary disclosure of positive information. However, they point out that the effects of leverage on disclosure can change over economic cycles. Malone et al. (1993) argue that companies with high leverage may disclose more information to satisfy the needs of long-term creditors. Myers (1977) argues that companies with high leverage may disclose more information to remove suspicions of debt holders regarding wealth transfer. Mitchell et al. (1995) find that firms that are highly levered voluntarily disclose more segment information.

By contrast, Cormier & Magnan (2003) conclude that leverage is negatively associated with voluntary environmental reporting, and that highly leveraged firms will be reluctant to disclose proprietary information because of its potentially damaging effect. They argue that only firms that are financially sound may be able to trade off the benefits from additional environmental disclosure with the costs of revealing potentially damaging information with respect to their environmental performance. Similarly, Ahmad et al. (2003) find a negative relationship between leverage and voluntary environmental disclosure.

The mixed findings on the influence of financing conditions of firms on voluntary corporate disclosure may be due to the use of leverage to measure the creditworthiness of firms. Dichev & Skinner (2002) argue that leverage is a relatively poor proxy to measure closeness to covenants. Dichev & Skinner (2002) in their study of debt covenant hypothesis assess the construct validity of firm leverage as a proxy for closeness to covenants. They argue that even though there is correlation between covenant slack and leverage, the correlation is fairly small. They therefore conclude that

leverage is a relatively poor proxy for closeness to covenants. Their findings also indicate that for most firms, debt covenant violations are not associated with financial distress. They suggest that private lenders use debt covenant violations as a screening device, and will frequently waive these violations or reset covenants without imposing serious consequences on borrowing firms.

In this study the relationship between the probability of a firm facing financial distress and voluntary corporate disclosure is investigated. It is expected that with a higher probability of facing financial distress, firms will be more likely to voluntarily disclose corporate information to reduce the effects of political and monitoring costs and to avoid bond covenants from being binding.

2.5 Control Variables

In addition to investment growth opportunities, corporate hedging strategies, size of company, probability of financial distress and negative media attention, prior studies relating to voluntary corporate disclosures and firm characteristics have found relationships between voluntary corporate reporting decisions and the firm characteristics of:

- listing status (Cooke, 1992; Hossain et al., 1994; Raffournier, 1995; Wallace et al., 1994)
- industry type (Chalmers, 2001; Chalmers & Godfrey, 2004; Cooke, 1992; Deegan & Hallam, 1991; Raffournier, 1995)
- ownership structure (Hossain et al., 1994; McKinnon & Dalimunthe, 1993)

Even though firm characteristics are not the focus of this study, it is important to control for the impact of such variables on management's voluntary disclosure decisions. In this study, the industry of the company and dispersion of share ownership will be measured and tested as control variables rather than hypothesised test variables. Any evidence of the effect of these two control variables on the dependent variable of voluntary disclosure of financial instruments-related information will be identified, and further analysis to control them in the model will be undertaken.

2.5.1 Industry of the Company

The levels of corporate disclosure in annual reports are likely to be different for companies across different industries in an economy. Firms in a particular industry may follow similar additional voluntary disclosure practices because of a mimetic effect or because of the common conditions and features of business transactions and events in that particular industry. Prior empirical investigations have found a significant relationship between industry type and the extent of voluntary disclosure made by companies in their annual reports (Chalmers, 2001; Chalmers & Godfrey, 2004; Cooke, 1992; Deegan & Hallam, 1991; Patten, 1991; Raffournier, 1995).

Chalmers (2001) provides evidence that during the unregulated disclosure period, Australian mining/oil firms voluntarily disclose more information relating to derivative financial instruments than the non-mining/oil firms. Her evidence also indicates that industrial firms only provide voluntary disclosures on derivative financial instruments with the introduction of the regulatory disclosure requirements on financial instruments. In addition, Chalmers & Godfrey (2004, p. 107) argue that:

> It is well recognized that Australian oil and gas and mining companies face greater currency and commodity pricing risks than most other Australian firms. Accordingly, they have incentives to not reveal to their opposition just how they manage their risk exposures. In contrast, because their (unhedged) risk profiles are generally known, oil and gas and mining firms have incentives to disclose their financial derivative hedging strategies to reduce information asymmetry, reduce perceptions of their riskiness, and to reduce their cost of capital.

Their study supports the positive association between industry type and voluntary disclosure of derivative financial instruments. On a similar basis, Patten (1991) finds evidence that both size and industry classification is significantly associated with the level of social disclosures made by companies. He also argues that the voluntary social disclosures in the annual reports of companies are made due to public pressure rather than firm profitability. In his study, Patten (1991) uses size of company and industry classification to proxy for public pressure. His evidence indicates that both size and industry classification are significantly associated with the level of social disclosures made.

Cooke (1992) in his investigation of the relationship between industry type and disclosure amongst Japanese companies finds that Japanese manufacturing firms disclose significantly more information in their annual reports than other types of firms. Thus, the type of industry may contribute to the differing levels of voluntary corporate disclosures made by companies in their annual reports.

2.5.2 Dispersion of Share Ownership

Prior empirical evidence on the relationship between ownership structure and the voluntary disclosure of information by companies indicates mixed results. For example, Cormier & Gordon (2001), Hossain et al. (1994), and McKinnon & Dalimunthe (1993) provide evidence of an association between ownership structure and the voluntary disclosure of information by companies. However, Craswell & Taylor (1992), and Raffournier (1995) find no evidence between ownership structure and the voluntary disclosure of corporate information.

Studies on the relationship between ownership structure and the voluntary disclosure of corporate information have based their arguments primarily on agency theory (Fama & Jensen, 1983; Hossain et al., 1994; Raffournier, 1995). According to Hossain et al. (1994, p. 337) 'agency theory suggests that where there is a separation of ownership and control of a firm, the potential for agency costs arises because of incentive conflicts between contracting parties'. Raffournier (1995, p. 264) argues that 'agency relations are likely to play a major role in the disclosure policy of companies because annual reports can be used to reduce monitoring costs'. In addition, Fama & Jensen (1983) argue that the potential for interest conflicts between principals and agents is greater for companies where the share ownership is widely held. Thus, they assert that the voluntary disclosure of information for widely held firms would likely be greater. This is because agents of such companies will have the incentive to voluntarily disclose more information in order to signal that they are acting in the best interest of the owners.

On the other hand, Cormier & Gordon (2001) argue that publicly owned firms disclose more social and environmental information in their annual reports than privately owned firms. Cormier & Gordon (2001) argue that the size and ownership status of a company influence its legitimation strategy. Cormier & Gordon (2001) draw on legitimacy theory in their investigation of social and environmental reporting strategies for publicly and

privately owned firms. In a case study of three electric utilities, two publicly owned and one privately owned company in Canada, their findings indicate that publicly owned firms disclose more social and environmental information in their annual reports than the privately owned firm. Since the publicly owned firms in their study are also larger than the one that is privately owned, they further conclude that social and environmental disclosures are related to size of companies. They argue that:

> Because the government owned enterprises are politically supported and are large, they must make more disclosures due to reasons of accountability and visibility as outlined in legitimacy theory.
>
> (Cormier & Gordon 2001, p. 607)

Thus, in this study, the dispersion of share ownership will be treated as a control variable that could potentially influence the voluntary disclosure decisions of management.

2.6 Summary

This chapter provides a review of the literature on the three main areas that are pertinent to this study: the literature on the relationship between mandatory and voluntary disclosure; the literature on the impact of proprietary costs on voluntary corporate disclosure; and the literature on the impact of political costs on voluntary corporate disclosure.

The chapter also reviews the concepts underlying the disclosure principle, signalling theory, legitimacy theory, and media agenda setting theory, as these theories are used in this study to underpin the theoretical arguments on management's decisions to voluntarily disclose financial instruments-related information. Specifically, the disclosure principle and signalling theory are reviewed to underpin arguments relating to the impact of proprietary costs on voluntary corporate disclosure, while the legitimacy and media agenda setting theories are reviewed to underpin arguments relating to the impact of political costs on voluntary corporate disclosure.

The literature on the relationship between mandatory and voluntary disclosures highlights the arguments for and against mandating the disclosure of accounting information and the effects of such mandatory requirements on management's decision

to further disclose additional information. Prior studies on the relationship between mandatory and voluntary disclosure indicates that management's voluntary disclosing strategy is influenced by changes in mandatory disclosure requirements.

The literature review of proprietary costs focuses on the relationship between proprietary costs and the voluntary disclosure of information by management. Various empirical investigations and mathematical models have been developed by prior researchers to investigate this relationship. The literature on political costs on the other hand, highlights the influence of media on a firm's legitimacy gap and other factors relating to a firm's political visibility, which, in turn, influences voluntary disclosure strategies.

This chapter also reviews the literature that seeks to operationalize these theories through surrogate variables, including a firm's investment growth opportunities, corporate hedging strategies, the probability of facing financial distress, size of company, and negative media attention. These factors are expected to influence management's decision to voluntarily disclose corporate information. Even though firms' characteristics are not the focus of this study, the existing literature on the influence of industry of firms and the dispersion of share ownership on voluntary disclosure is also reviewed in this chapter, as these characteristics will be the control variables in this study to ensure that their potential impact on management's voluntary disclosure of financial instruments-related information is taken into consideration.

In the next chapter the underlying relevant principles and theories reviewed in this chapter will be applied towards the development of the conceptual model for this study. The empirical schema of the forces impacting on corporate management decisions to voluntarily disclose information relating to financial instruments and the related hypotheses will also be fully developed in Chapter 3.

Chapter 3

Conceptual Framework, Variable Identification and Hypotheses Development

3.1 Introduction

This chapter identifies and models those factors deemed to influence management's strategic decision on the extent of voluntary disclosure of financial instruments-related information in both regulated and unregulated environments. The relationships of each factor to levels of voluntary disclosure are addressed in this chapter, through to the formulation of formal hypotheses. As noted in Chapter 2, this study combines three streams of accounting research: research on the relationship between mandatory and voluntary disclosure; research on voluntary disclosure from a signalling perspective concerned with benefits versus proprietary costs of information provision; and research on voluntary disclosure from a legitimacy perspective concerned with the political cost hypothesis. A review of the literature indicates that these three streams of accounting research have developed separately in studies on voluntary corporate disclosure. In this chapter, these three streams are integrated to form a conceptual framework for testing their combined influence on management decisions regarding the extent of voluntary disclosure of information relating to financial instruments.

In setting up a conceptual framework and empirical schema, this chapter is organized as follows: the next section develops a conceptual model of some primary variables that impact on corporate management decisions to voluntarily disclose information; the nature of these variables will be specified and then the empirical schema for this study will be presented; finally, a set of hypotheses will be generated.

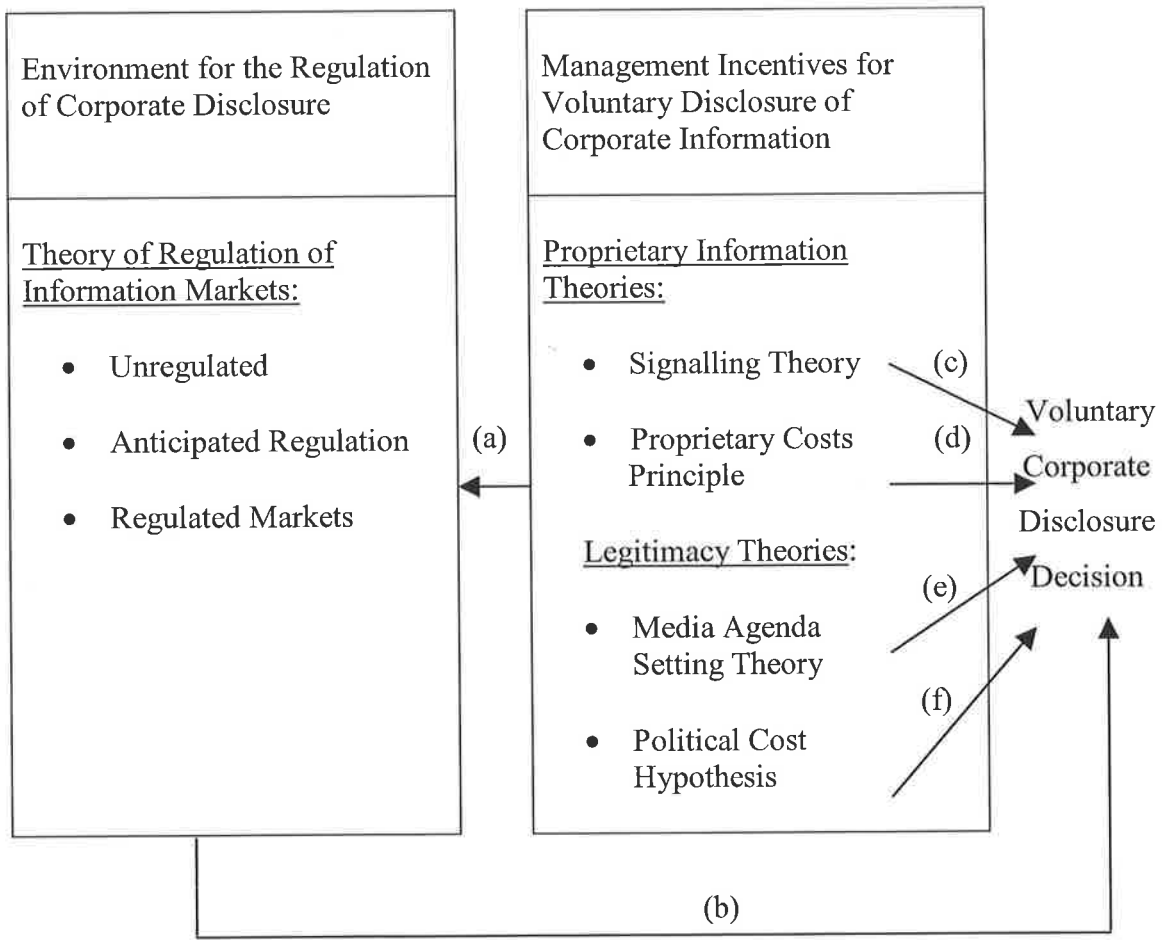
3.2 Conceptual Model

The theoretical perspectives underlying the conceptual model for this study are based on the disclosure principle, signalling theory, proprietary cost principle, legitimacy theory, the media agenda setting theory, and the political cost hypothesis as reviewed in Chapter 2. The model draws upon the literature in Chapter 2 that has invoked these theories.

In fact, the conceptual model contains the set of behavioural theories (indicated above) as alternative perspectives on management incentives for voluntary corporate disclosure. These management incentives are grouped under two paradigms – proprietary information theories and legitimacy theories. In addition, the conceptual model includes the environment for the regulation of corporate information, which, in its own right, includes a theory about the effect of information regulation on management's voluntary disclosure incentives. The conceptual model is depicted in Figure 4.

Figure 4

Conceptual Model of Incentives and Environments Affecting Voluntary Corporate Disclosure Decisions by Management



3.2.1 Theory of Regulation of Information Markets

The regulatory environment for corporate disclosure is part of the conceptual model for this study, as shown in Figure 4. Whilst Wolk et al. (1989) suggest that due to market failure it may be necessary to regulate accounting information, Jovanovic (1982) argues that the free market offers enough incentives for business to voluntarily disclose information. When various incentives function strongly on management in information markets, then voluntary corporate disclosures can produce adequate information for investors and other corporate stakeholders. Such incentives are drawn from theories about the impacts on management disclosure decisions of signalling, proprietary costs, media attention and political costs. However, when these incentives are not strong, or other incentives such as management opportunistic behaviour are prevalent, then market failure can occur. Regulation of markets for corporate information is then likely to be increased. Hence, Figure 4, link (a), depicts a relationship between management incentives and the environment for regulation.

The aspect of the regulatory environment, which is of concern in this study, is whether the introduction of mandatory disclosure requirements relating to corporate financial reporting inhibits or enhances management's incentives to voluntarily disclose additional information. 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. Dye (1990) argues that the divergence between mandatory and voluntary disclosure is affected by the nature of externalities created because of the disclosure. Externalities created by increased mandatory disclosure requirements refer to the fact that competitor firms would all be faced with the same exposure of their proprietary information, so they do not face the degree of

competitive disadvantage that could have occurred in an unregulated environment. The influence of changes in mandatory disclosure requirements on voluntary disclosure by firms is depicted by link (b) in Figure 4.

3.2.2 Proprietary Information Theories

The disclosure principle and signalling models have been used by prior researchers to address situations where there are information asymmetries between two parties. Chapter 2 referred to the disclosure principle as suggested by Grossman (1981) and Milgrom (1981). Grossman (1981) argues that when information transmittal is costless, a seller will disclose all the information, both good and bad, that he or she holds, as the buyers would put the worst interpretation on non-disclosure. Likewise, Milgrom (1981) and Jung & Kwon (1988) suggest that firms will disclose favourable information about the firm, as non-disclosure will result in users inferring that the content of such information is unfavourable. Jung & Kwon (1988) argue that the possibility that investors have acquired credible information from other independent sources such as the financial press or financial analysts may influence management's decision to voluntarily disclose additional information.

Signalling theory, as referred to in Chapter 2, posits that the process of signalling can reduce the information asymmetry between the parties involved. Management with more information about their company will signal the information in order to disclose their company's general quality within equity markets. Watts & Zimmerman (1986) develop their argument on the assumption that managers of firms will possess more information than outsiders regarding such matters as the firm's expected profits, risk exposure and future cash flows. Thus, managers of higher quality firms are expected to want to differentiate themselves from those of lower quality firms by making additional voluntary disclosure. As suggested by Hughes (1986) such direct disclosures made by managers give a credible signal about firm value as the firm would be penalized if the *ex post* observable cash flow of the firm indicates that the firm provides misleading information. Skinner (1994) provides evidence that managers will voluntarily disclose both good and bad news as the good news signals quality and the bad news is signalled to prevent a decline in the firm's share prices. In fact, Healy & Palepu (1993) argue that such additional disclosures are necessary in order to correct the real value of the firm. However, according to Trueman (1986) the incentive for management to voluntarily

disclose such information only exists provided that the information disclosed is costless. If there are costs involved in disclosing such information, then disclosure is not guaranteed.

In this study, the issuing of AASB 1033 and MASB 24 provides an ideal setting for testing the robustness of signalling theory in a regulated and unregulated environment. These standards 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. High quality firms would prefer such accounting standards, as the flexibility in the disclosure requirements will enable them to provide additional information to distinguish themselves from low quality firms. This way, managers of high quality firms can use the proprietary information that they have about their firms' current and future performance to signal more accurately to investors, the fair value of the firm. In fact rational investors and creditors will expect such managers to use this flexibility to report their firms' performance in the most credible way. Therefore, high quality firms are expected to voluntarily disclose more detailed information about their financial instruments than is mandated by the accounting standards. This signalling theory perspective is depicted as link (c) in Figure 4.

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. Such voluntary disclosure 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. Even though Wagenhofer (1990)

acknowledges the incurrence of proprietary costs due to disclosure, he argues that the existence of such costs does not necessarily imply non-disclosure. Gigler (1994) argues that even though voluntary disclosure is unaudited and can be manipulated by management, such disclosures are credible since firms incur proprietary costs to voluntarily disclose such information. He concludes that the proprietary costs that are incurred by management in making the disclosure provide credibility to the disclosures made. This proprietary costs principle is depicted as link (d) in Figure 4.

Overall, proprietary information theories suggest that management needs to balance the costs and benefits arising as a result of the disclosure of proprietary information when deciding to voluntarily provide additional corporate information. According to Verrecchia (1983), the extent of such voluntary disclosure is related to a threshold level for disclosure, which is dependent on the expected size of the proprietary costs. The higher the proprietary costs, the higher will be the threshold level for disclosure, resulting in lower probability of disclosure. The quality of private information that managers possess may also affect this threshold level for disclosure (Verrecchia, 1990). Managers will be willing to disclose proprietary information if the information is of higher quality for fear that non-disclosure will result in the market discounting the value of the firm's assets (Verrecchia 1990). However, as noted in Chapter 2, the literature on voluntary disclosure suggests that firms prefer a partial disclosure equilibrium whereby their management is willing to disclose private information but not to the extent of completely revealing all information (Gigler, 1994; King & Wallin, 1995; Wagenhofer, 1990).

3.2.3 Legitimacy Theories

Legitimacy theory posits that 'in order to continue operating successfully, corporations must act within the bounds of what society identifies as socially acceptable behaviour' (O'Donovan 2002, p. 344). Thus, according to legitimacy theory, organizations need to ensure that they operate within the values and norms of the society in which they exist, otherwise their very existence may be threatened. Legitimacy theory assumes that there is a social contract either expressed or implied between organizations and society (Shocker & Sethi, 1974). Thus, organizations need to ensure that they fulfil this social contract with society, as the fulfilment of such contract will ensure that the values of the organizations will remain congruent with the values of the society. Organizations must

agree to operate within the bounds imposed by society in order for them to continue to enjoy access to product and resource markets (Campbell et al., 2003). In addition, firms need to constantly manage their corporate image to ensure that their activities are within societal expectation since societal norms are not static.

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, in this study, 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.

Failure by companies to voluntarily disclose information in order to avoid incurring proprietary costs may result in these companies incurring political costs. 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. Politicians, trade unions, consumer associations, stakeholder groups and the general public may decide to impose costs on these companies because of their failure in voluntarily disclosing information. Such costs include consumer boycotts, industrial action, and more government regulations. The corporate sector is especially vulnerable to these political costs arising from intense lobbying by certain groups of voters which will in turn encourage elected officials to take action against the corporation (Watts & Zimmerman, 1986).

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). This study draws on the political cost hypothesis to underpin explanations of the influence of political visibility on management's voluntary disclosure strategy for financial instruments. The literature provides more evidence that

politically visible firms would be more likely to voluntarily disclose additional information than firms that are less politically visible. This is because firms that are politically visible have a greater need to be seen as acting within the bounds of socially acceptable behaviour. The political cost hypothesis is depicted as link (f) in Figure 4.

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).

The influence of the media and its effect on management's voluntary disclosure decisions has been widely investigated by researchers in the area of social and environmental disclosures (Brown & Deegan, 1998; Deegan et al., 2000; Deegan et al., 2002). Brown & Deegan (1998) conclude that variations in corporate disclosure are associated with variations in the level of media attention given on environmental issues, even though not all industries reacted in the same manner. 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). The negative media attention is more likely to be regarded by the community as an important concern (Dearing & Rogers, 1996). The media agenda setting theory is depicted as link (e) in Figure 4.

In summary, the theories presented throughout section 3.2 provide the rationale for factors that are expected to influence management's decision to voluntarily disclose information relating to financial instruments. Figure 4 presents the conceptual model for this study, depicting the links between forces impacting on corporate management decisions to voluntarily disclose information in an information environment that will

change from unregulated to anticipated regulation to a regulated environment. The various factors arising from the theories contained in the conceptual model will be operationalized for the purpose of developing and empirically testing hypotheses.

3.3 Variable Identification and the Empirical Schema

Arising from the theories given in the conceptual model, the explanatory variables to be used in this study as determinants of voluntary disclosure need to be identified. Once identified, the variables can be formulated into regression equations and an empirical schema for this study.

As pointed out in previous chapters, the dependent variable for this study is the voluntary corporate disclosure of items of information related to accounting for, policies about, management of, and markets associated with, financial instruments. The proprietary nature of these items of voluntary disclosure will be part of the measurement of this dependent variable, as will be explained in Chapter 4.

3.3.1 Identification of Independent Variables

The independent variables associated with the three groupings of theories from the conceptual model are:

Regulatory Theory:

- Anticipation of a proposed standard on financial instruments disclosure
- Existence of a standard on disclosure requirements

Proprietary Information Theories:

- Investment growth opportunities
- Hedging strategies to reduce risks

Legitimacy Theories:

- Size of firm
- Probability of financial distress
- Negative media attention

3.3.1.1 Anticipation of and the Existence of Mandatory Disclosure Requirements

The effect of the anticipation of mandatory disclosure requirements on voluntary disclosure of financial instruments-related information will be tested in the unregulated

and anticipated disclosure environment, while the effect of the existence of mandatory disclosure requirements on voluntary disclosure of financial instruments-related information will be tested in the regulated disclosure environment. Both the anticipation of and the existence of mandatory disclosure requirements relating to financial instruments disclosure are expected to have a positive effect on voluntary disclosure.

3.3.1.2 Investment Growth Opportunities and Hedging Strategies

The independent variables, investment growth opportunities and hedging strategies, are of a nature that contains high proprietary information. Investment growth opportunities and hedging strategies will be used to proxy for proprietary costs. This is because proprietary costs are difficult to measure directly, thus, proxies for the measurement of proprietary costs need to be used. Companies with investment growth opportunities and hedging strategies 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). This study will further investigate the direction of this relationship. Firms with higher investment growth opportunities are expected to disclose more information to signal their type. However, due to the impact of proprietary costs on such disclosure decisions, such firms may be reluctant to voluntarily disclose additional information in their financial statements, even to signal their type for fear that the disclosure of such private information will reveal their investment growth opportunities to their competitors. In addition, the size of the growth firms is expected to have a moderating effect on the voluntary disclosure of financial instruments-related information. On the other hand, firms' hedging strategies are expected to have a positive effect on the voluntary disclosure of proprietary information.

3.3.1.3 Probability of Financial Distress, Size of Company and Negative Media Attention

The independent variables, probability of financial distress, size of company, and negative media attention are to test for the impact of political costs and the validity of

legitimacy theory including the media agenda setting theory. These three variables are expected to have a positive association with the voluntary disclosure of information about financial instruments.

3.3.2 Moderating Variables

In addition to using size of company as a variable to test for the impact of political costs on voluntary disclosure, the moderating effect of size of company on investment growth opportunities is also investigated for its influencing effect on the dependent variable. In addition, the anticipated introduction of the mandatory disclosure requirements is also expected to have a moderating effect on the relationship between negative media attention and the voluntary disclosure of information relevant to financial instruments. This relationship is also investigated.

3.3.3 Control Variables

The relevant control variables for this study are the industry of the company and the dispersion of share ownership in the company. These two factors will be controlled in this study for their potential effect on the dependent variable.

3.3.4 Regression Equation and the Empirical Schema

The multiple relationships to be empirically investigated in this study are stated in the following equations:

$$VDISC = \beta_0 + \beta_1 MDISC + \beta_2 HEDGE + \beta_3 GROWTH + \beta_4 (GROWTH \times SIZE) + \beta_5 SIZE + \beta_6 DISTRESS + \beta_7 MEDIA + \beta_8 (MEDIA \times MDISC) + \beta_9 OWNER + \beta_{10} INDUST + e \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

where VDISC is an index of voluntary disclosure of information relevant to financial instruments in the corporate annual reports

MDISC is an index of the mandatory disclosure items relating to financial instruments that exist or are anticipated

HEDGE is the firm's hedging strategies

GROWTH is the firm's investment growth opportunities

(GROWTH X SIZE) is the moderating effect of firm's size on investment growth opportunities
SIZE is the firm's size
DISTRESS is the probability of financial distress
MEDIA is the negative media attention
(MEDIA X MDISC) is the moderating effect of anticipated mandatory disclosure requirements on negative media attention
OWNER is the dispersion of share ownership in the company
INDUST is the industry of the firm
e is the normally distributed random error

β_0 in the regression equation represents a constant. Within the equation, the regression coefficients resulting from standardized data are termed beta coefficients. The standardized beta coefficients enable the elimination of problems associated with different units of measurement, and they also reflect the relative impact of a change in one standard deviation on the dependent variable.

Equation (1) incorporates variables from both the proprietary information theories and legitimacy theories. However, as an explanation of the extent of voluntary corporate disclosures, proprietary information theories focus on management incentives to disclose information that bears proprietary costs i.e. on the "proprietariness" of voluntary disclosures. On the other hand, legitimacy theories focus on management incentives to voluntarily disclose all strategically relevant information. Hence, equation (1) is separated to isolate the different explanatory theories as follows:

$$VDISCPROP = \beta_0 + \beta_1 MDISC + \beta_2 HEDGE + \beta_3 GROWTH + \beta_4 (GROWTH \text{ X } SIZE) + \beta_5 OWNER + \beta_6 INDUST + e \quad \ldots\ldots(2)$$

$$VDISC = \beta_0 + \beta_1 MDISC + \beta_2 SIZE + \beta_3 DISTRESS + \beta_4 MEDIA + \beta_5 (MEDIA \text{ X } MDISC) + \beta_6 OWNER + \beta_7 INDUST + e \quad \ldots\ldots(3)$$

where VDISCPROP is VDISC weighted by perceived "proprietariness" of items disclosed.

Equations (2) and (3) are further depicted in an empirical schema in Figure 5.

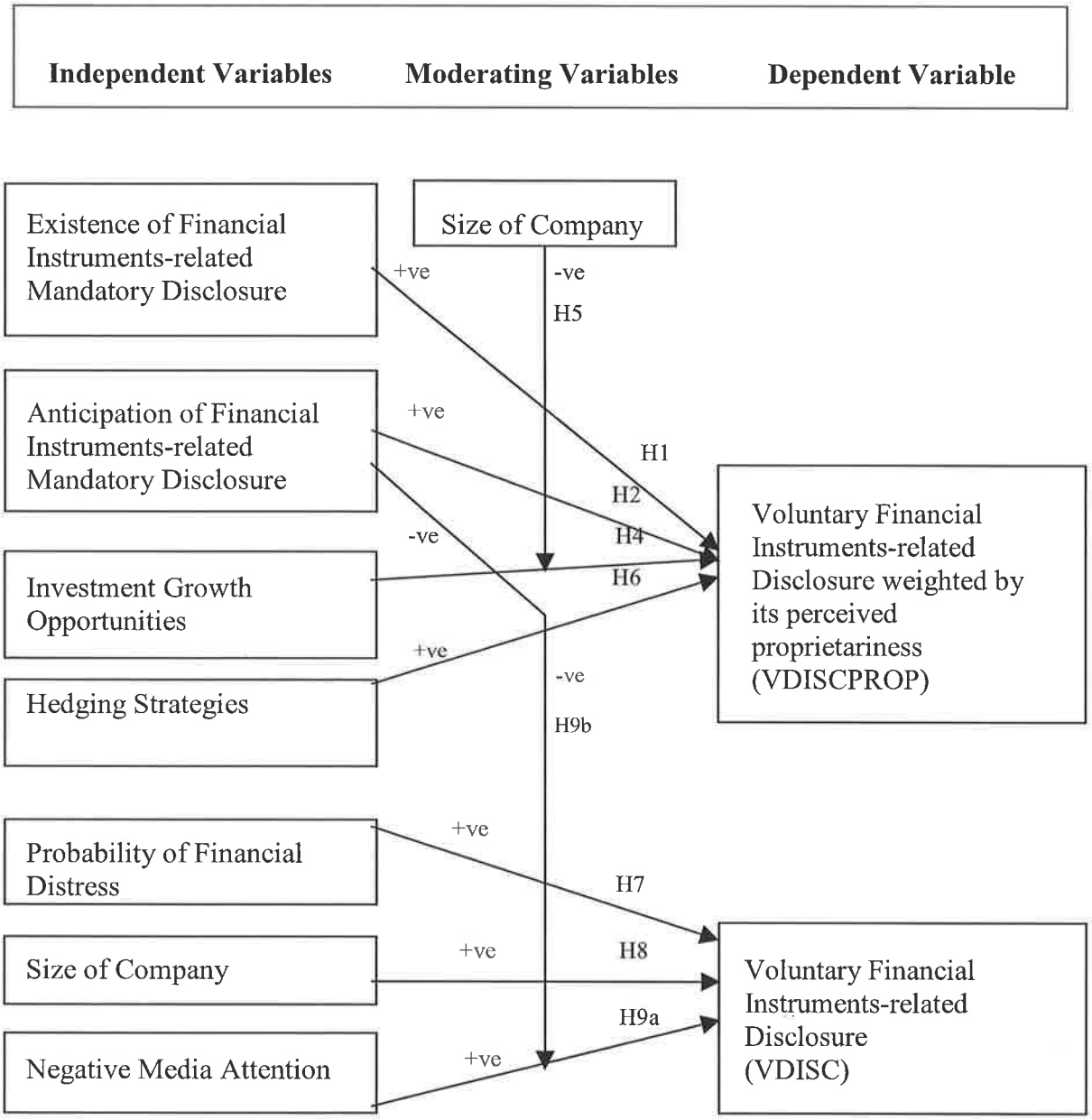
Drawing from the conceptual model, the empirical schema for this study identifies three factors as primary influences on management's decision to voluntarily disclose information relating to financial instruments:

- the anticipation of and the existence of mandatory disclosure requirements relating to financial instruments
- the extent of proprietary costs expected to be incurred by making particular items of financial instruments-related information publicly available
- the extent of political costs expected to be incurred by withholding the disclosure of financial instruments-related information.

The empirical schema shows nine hypotheses (H1, H2, H4 to H9b). H3 is not presented in the empirical schema, as the dependent variable for this hypothesis is not the voluntary disclosure relating to financial instruments but rather the mandatory disclosure items. H3 will be tested during the univariate analysis. These hypotheses are specified and discussed in the next section.

Figure 5

Empirical Schema of Factors Affecting the Voluntary Corporate Disclosure of Information Concerning Financial Instruments



Control Variables

Industry of the Company

Dispersion of Share Ownership

The methods of measuring the respective variables will be addressed in Chapter 4.

3.4 Hypotheses Development

In this section, the hypothesized relationships between the independent variables and the dependent variable are discussed and a set of hypotheses to be empirically tested is generated.

3.4.1 Hypotheses for Testing the Relationship between Mandatory and Voluntary Disclosure

Section 2.2 of this thesis reviewed the literature on the relationship between mandatory and voluntary disclosure. Evidence from this literature indicates that there is a relationship between mandatory and voluntary disclosure. However, the direction of the relationship is uncertain. Empirical investigations undertaken to test Dye's (1986) theoretical model on the relationship between mandatory and voluntary disclosure produced conflicting findings. Thus, a further test of the relationship between mandatory and voluntary disclosure is warranted. This study further tests Dye's (1986) model where he argues that an increase in the mandatory disclosure of non-proprietary information increases the incentives for the voluntary disclosure of correlated proprietary information.

Specific empirical evidence for financial instruments also indicates mixed findings on the relationship between mandatory and voluntary disclosures. As reviewed in Chapter 2, 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) confirm these findings. By contrast, Berkman et al.'s (1997) findings indicate that even with the impending introduction of the mandatory disclosure requirements relating to financial instruments, companies did not voluntarily disclose more information on derivative instruments.

Thus, a review of the existing literature indicates that the direction of the relationship between mandatory and voluntary disclosures remains uncertain. Therefore, this study further investigates the impact of the introduction of mandatory disclosure requirements on managers' voluntary disclosure decisions. It is expected that the anticipation of a forthcoming standard on the disclosure of financial instruments, and then the existence

of this standard, will affect management's decisions on the voluntary disclosure of related proprietary information.

The issuance of AASB 1033 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. As the requirements of the standard give management the discretion of deciding on the extent of disclosures to be made, it is expected that management will voluntarily disclose related proprietary information. Thus, the first hypothesis concerning the relationship between mandatory and voluntary disclosure, which will be tested for the period after the introduction of the mandatory disclosure requirements, is stated as follows:

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

Because of the conflicting findings of Chalmers (2001), Chalmers & Godfrey (2004) and Berkman et al. (1997), this study further investigates the question of whether the likelihood of a proposed standard becoming mandatory has any effect on the voluntary disclosure of related proprietary information. Thus, 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. The hypothesis to be tested before the introduction of the mandatory disclosure requirements is stated as follows:

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.

The next consideration is whether the likelihood of a proposed standard becoming mandatory and the actual introduction of the standard have an effect on the voluntary

disclosure of additional information associated with the proposed mandatory disclosure items. A review of the literature indicates that the likelihood of, and the actual introduction of, the standard on financial instruments disclosure is expected to increase the voluntary disclosure of additional information associated with the mandatory disclosure items (Aggarwal & Simkins, 2004; Chalmers, 2001; Chalmers & Godfrey, 2004). Thus, in this study, the voluntary disclosure of additional information associated with the mandatory disclosure items is compared between unregulated and regulated environments. In the regulated environment, this involves the investigation of the comprehensiveness of the mandatory disclosure items. The comprehensiveness of the mandatory disclosure will indicate the degree of detail with which a required item is disclosed (Wallace & Naser, 1995, p. 328). Wallace et al. (1994) argue that a firm can provide explanations in the notes to the accounts to enhance users' understanding of the disclosure on the item. Thus, they argue that measuring the comprehensiveness of the disclosure of mandatory information items is to measure indirectly the voluntary disclosure relating to that item. Barrett (1976, p.14) argues that as the degree of detail provided by mandatory disclosure is a managerial choice, measuring the comprehensiveness of mandatory disclosure is in essence measuring the amount of information management is willing to voluntarily disclose. Thus, the hypothesis to be tested in the period before and after the introduction of mandatory disclosure requirements is stated as follows:

H3: The anticipated and actual introduction of a standard on disclosure of financial instruments increases the comprehensiveness of disclosure associated with mandatory disclosure items contained in the standard.

3.4.2 Hypotheses for Testing the Validity of Signalling Theory and the Impact of Proprietary Costs on Voluntary Disclosure

Circumstances that can influence management's decision concerning the extent of proprietary information to be signalled include the level of competition in the industry (Darrough & Stoughton, 1990; Harris, 1998; Hayes & Lundholm, 1996), the financial condition of the firms (Cormier & Magnan, 2003; Kelly, 1994) and the type of news to be disclosed (Li et al., 1997; Milgrom, 1981; Scott, 1994; Verrecchia, 1983). Thus, the decision to disclose proprietary information in order to signal quality of a firm is highly dependent on the circumstances of the firm and its industry.

Section 2.3 of Chapter 2 reviews the literature on signalling theory and the assertion that managers of higher quality firms are expected to voluntarily disclose information in order to signal their firm's type and quality. In this study, the impact of proprietary costs on management's voluntary disclosure of financial instruments-related information is investigated for firms in circumstances that differ in terms of their investment growth opportunities and corporate hedging strategies.

According to signalling theory, firms with investment growth opportunities are expected to disclose more information to signal their higher quality type. However, Taylor & Redpath (2000) argue that a firm with greater investment growth opportunities will have heightened proprietary costs associated with voluntary disclosure of information of a proprietary nature that reveals something about future expected cash flows. Therefore, firms with investment growth opportunities may be reluctant to voluntarily disclose additional information that can signal their quality type, for fear that the disclosure of such private information will be used by competitors to take advantage of these investment growth opportunities. The external disclosure by management of its discretionary investments will convey private information about growth opportunities. This can be acted upon by other firms, cause the firm a competitive disadvantage, and represent a proprietary information cost. As explained by Kanodia & Lee (1998), periodic performance reports voluntarily issued by management can reveal private information about the profitability of new investment opportunities. Harris (1998) argues that management will conceal abnormal profits for business segments with greater growth opportunities. Firms with higher growth opportunities have been found to be less specific in their disclosure (Bamber & Cheon, 1998).

Therefore, there will be offsetting motivations for voluntary disclosure of information related to financial instruments arising from the benefits of signalling the firm's higher quality type, on the one hand, and the costs of revealing proprietary information to competitors on the other hand. To test these offsetting influences, this study will investigate the proprietariness of voluntary disclosure of information relating to financial instruments for high and low growth firms. Items of voluntary disclosure are deemed to have greater proprietariness if they are more revealing of expected future cash flows of the firm.

Thus, the following hypothesis seeks to test the effect of investment growth opportunities on voluntary disclosure for the period before and after the introduction of the mandatory disclosure requirements:

H4: The higher the investment growth opportunities, the lower will be the voluntary disclosure of proprietary information relevant to financial instruments.

The next consideration in this study is whether the investment growth opportunities of firms are linked to the firm's size, and whether the size of the growth firms has any effect on their voluntary disclosure decisions. A review of the existing literature reveals that there is a relationship between firms' size and their investment growth opportunities. However, there are conflicting arguments on the direction of this relationship. The literature, nevertheless, gives more support to this relationship being in the inverse. That is, growth companies tend to be smaller (Baker, 1993; Banz, 1981; Fama & French, 1992; Ho et al., 2004; Hutchinson & Gul, 2003; Petty et al., 1996). Smaller companies are less capable of fighting off competitors who seek to enter their market to take advantage of higher growth opportunities. Hence, the combined conditions of being a smaller company and having higher growth opportunities are expected to cause higher proprietary costs of voluntary disclosures.

This study seeks to investigate this relationship by testing the moderating effect of size on the voluntary disclosure of financial instruments-related information in the following hypothesis for the period before and after the introduction of the mandatory disclosure requirements:

H5: The smaller the company size, the greater will be the inverse relationship between investment growth opportunities and the extent of voluntary disclosure of proprietary information relevant to financial instruments.

The financial condition of a firm also influences management's voluntary disclosure decisions (Cormier & Magnan, 2003; Kelly, 1994). In particular, hedging strategies and other risk management levels of firms are financial conditions expected to influence the voluntary disclosure of proprietary information concerning financial instruments.

Empirical investigations reveal that firms use derivatives as a means of hedging rather than for speculative purposes (Allayannis & Ofek, 2001). Managers traditionally use hedging as a means of avoiding risks (Smith & Stulz, 1985; Stulz, 1984; Tufano, 1996). Firms therefore use derivatives to hedge if the expected benefits of corporate risk management outweigh the costs of those derivatives (Guay & Kothari, 2003). Hedging reduces the variations of firms' cash flows and adds value to those firms by ensuring that they have sufficient funds to take advantage of attractive investment opportunities (Froot et al., 1993).

DeMarzo & Duffie (1991) argue that since hedging is optimal when it is undertaken by managers who have private information about the firm's expected profits, managers can use hedging to signal their capabilities to investors. Hedging activities have also been found to increase firm value (Allayannis & Weston, 2001; Graham & Rogers, 2002; Nance et al., 1993; Nguyen & Faff, 2002). As hedging activities increase firm value and are used by firms to avoid risk and to reduce the variability of cash flows, companies that hedge are better protected against competitive disadvantage. Therefore, firms that hedge would be willing to disclose more information to signal their underlying quality, as they are better positioned in the market place and will be able to absorb any proprietary costs that may be incurred due to the disclosure. Thus, it is expected that firms with a higher level of corporate hedging will voluntarily disclose more financial instruments-related information than firms with a lower level of corporate hedging. This study seeks to test the following hypothesis for the period before and after the introduction of the mandatory disclosure requirements with regards to the relationship between hedging strategies and the disclosure of proprietary information:

H6: The higher the level of a company's corporate hedging, the higher will be its voluntary disclosure of proprietary information relevant to financial instruments.

3.4.3 Hypotheses for Testing the Validity of Legitimacy Theory Including the Media Agenda-Setting Theory and the Impact of Political Costs on Voluntary Disclosure

The impact of political costs on management's voluntary disclosure decision is tested in a set of hypotheses in this section 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). For example, Ahmed & Nicholls (1994) and Chow & Wong-Boren (1987) find no significant association between leverage and the extent of voluntary disclosure. In the context of voluntary disclosure of derivative financial instruments, Chalmers & Godfrey (2004) did not find a significant relationship between leverage and firms' voluntary disclosure of derivative financial instruments. However, Malone et al. (1993), Mitchell et al. (1995), Myers (1977), and Taylor & Redpath (2000) argue that firms with high leverage are more likely to provide further voluntary disclosure of information. However, Ahmad et al. (2003) and Cormier & Magnan (2003) find a negative relationship between leverage and voluntary disclosure.

These prior studies use leverage to measure the creditworthiness of firms. In this study the probability of firms facing financial distress is used to measure the state of creditworthiness instead of leverage. This is because, as suggested by Dichev & Skinner (2002), a firm's financial leverage may be a relatively poor proxy for closeness to covenants. 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. Thus, companies that have a higher probability of being classified as distressed will voluntarily disclose more information to ease the effects of political costs than companies that have a lower probability of being classified as distressed. This study seeks to test the following hypothesis for the period before and after the introduction of the mandatory disclosure requirements with regard to the relationship between probability of financial distress and the voluntary disclosure of information:

H7: 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). The political cost hypothesis states that larger firms face greater public exposure and hence are subjected to higher external scrutiny and external interference. 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. Therefore, larger companies would be willing to voluntarily disclose more information than smaller companies. Cormier & Magnan (2003) provide evidence that larger firms tend to report more extensively on their environmental management than smaller firms. They argue that because larger firms are subject to more intense external monitoring than smaller firms, such firms would disclose more environmental information than smaller firms.

Thus, the impact of political costs on management's voluntary disclosure decisions is tested in the following hypothesis for the period before and after the introduction of the mandatory disclosure requirements:

H8: The larger a company's size, the greater will be its voluntary disclosure of information relevant to financial instruments.

Section 2.4.1 of the literature review chapter provides evidence that firms do voluntarily disclose information in their annual reports as a strategy to manage their legitimacy (Brown & Deegan, 1998; Buhr, 1998; Campbell, 2000; Chalmers & Godfrey, 2004; Deegan et al., 2000; Deegan et al., 2002; Deegan & Gordon, 1996; Deegan & Rankin, 1996; Hutchings & Taylor, 2000; Nasi et al., 1997; O'Donovan, 2002; Patten, 1991, 1992; Woodward et al., 2001). As suggested by Cormier & Gordon (2001) management use accounting and financial reporting as a means of communicating with society and

stakeholders about their firms' activities in order to legitimise their actions. Deegan et al. (2000, p. 101) argue that 'organizations utilize their annual report as a means of influencing society's perception of their operations, and as a means of legitimising their ongoing existence'. This is confirmed by O'Donovan (2002) who argues that organizations use annual reports to voluntarily disclose environmental information in order to present themselves in a positive manner. Firms will thus use their annual reports as a means of communication to inform society of their performance and activities in order to be seen as acting within the society's expectations. As suggested by Dowling & Pfeffer (1975), Sethi (1978), and Lindblom (1994), firms will undertake any one of their legitimation strategies to narrow the legitimacy gap in order to remain legitimate. Corporate disclosure is thus the result of organizations reacting to their environments in order to legitimize their actions (Guthrie & Parker, 1989; Hogner, 1982; Hutchings & Taylor, 2000; Lindblom, 1994; O'Donovan 2002; Preston & Post, 1975; Woodward et al., 2001).

The recent study by Chalmers & Godfrey (2004) on changes in the voluntary disclosure of derivative instruments in Australia directly parallels this study. Chalmers & Godfrey (2004) argue that the increase in public scrutiny due to the increase in use of derivative financial instruments by companies in financing their operations, and the media reports associated with derivative financial disasters, have resulted in an increased demand for the transparency of derivative activities. Even though Chalmers & Godfrey (2004, p. 100) assert that 'media reports associated with derivative financial disasters have made stakeholders conscious of, and concerned about, firms' use of derivative financial instruments', their study did not investigate the association between media reports and the voluntary disclosure of financial derivatives.

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 will be done through

the investigation of a high profile incident involving the collapse of Barings Bank in 1995. This incident is 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 AASB 1033 became mandatory.

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. Based on a time lag argument, it is expected that after a period following the negative media coverage, there will be an increase in the voluntary disclosure of information relating to financial instruments. This is done by firms as a corrective action against the threat to their legitimacy, and to avoid incurring political costs. Such a legitimisation need will be heightened for more politically visible companies. 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. There are two hypotheses to be tested for the effect of negative media attention in the pre-regulation period. The first hypothesis to be tested is as follows:

H9a: 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. Thus, the

second related hypothesis to be tested for the effect of negative media attention on the voluntary disclosure of information relating to financial instruments in the pre-regulation period is as follows:

H9b: 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.

3.5 Summary

This chapter identifies the factors that are perceived to influence management's decision to voluntarily disclose financial instruments-related information in a regulated and unregulated environment, taking into consideration the impact of proprietary and political costs on such decisions. In developing the conceptual framework for this study, three streams of accounting research are integrated: research on the relationship between mandatory and voluntary disclosure; research on the proprietary costs perspective; and research on the political costs hypothesis. The chapter also provides an in-depth explanation and justification of the factors that are perceived to influence corporate management decisions to voluntarily disclose information.

The chapter then proceeds to operationalize the conceptual model by presenting the empirical schema for this study. The empirical schema depicts the expected relationships between the independent variables, moderating variables, and the dependent variable. The relevant control variables are also identified in this chapter. Finally, a set of hypotheses, mapped in the empirical schema and generated from prior research, is presented for empirical testing. The methodology from data collection and variable measurement will be fully covered in Chapter 4.

Chapter 4

Research Methodology and Variable Measurement

4.1 Introduction

This chapter describes the research methodology adopted in collecting the data for this study and the measurement approaches used to measure the variables. The relationships between the measured variables will be analysed for purposes of testing the hypotheses in Chapter 5.

This chapter is organized as follows. The first part of the chapter discusses the choice of method used to collect the data for the study. The second part of the chapter discusses the sample selection including the period of study and the sampling procedure used. The third part of the chapter involves variable measurement. This part of the chapter discusses in detail the approaches adopted in measuring the dependent, the independent, and the control variables. This includes the measurement for the voluntary disclosure of information relevant to financial instruments and the weighting of the voluntary disclosures by the perceived proprietariness of the items disclosed. Finally, the chapter provides a summary of the dependent, independent, and the control variables and their measurement methods.

4.2 Choice of Method

In order to capture the data on the factors that influence management's decision to voluntarily disclose financial instruments-related information in a regulated and unregulated environment and the impact of proprietary and political costs on such decisions, this study basically uses two methods of collecting data. First, a content analysis of companies' annual reports is undertaken to capture the amount or quantity of the mandatory and voluntary disclosures of information relating to financial instruments. Second, through a survey process, a panel of experts is used to rate the extent of proprietary costs embodied in each voluntary disclosure item relating to financial instruments. This rating is used to create a weighted disclosure index to measure the quality of voluntary disclosure items in terms of the proprietariness of each item.

4.2.1 Content Analysis of Annual Reports

The first method of collecting data for this study is through content analysis of companies' annual reports. The purpose is to extract the mandatory and voluntary disclosure of information relating to financial instruments. As suggested by Budd et al. (1967), Holsti (1969) and Kassarjian (1977), content analysis enables narrative texts to be placed into categories in order to derive conclusions about their thematic content. According to Guthrie et al. (2004, p. 287) content analysis is 'a technique for gathering data that involves codifying qualitative and quantitative information into pre-defined categories in order to arrive at patterns in the presentation and reporting of information'. According to Berelson (1952, p. 18) content analysis is 'a research technique for the objective, systematic, and quantitative description of the manifest content of communication'. His definition of content analysis implies three general assumptions:

> 1. Content analysis assumes that inferences about the relationship between intent and content or between content and effect can validly be made, or the actual relationships established.
> 2. Content analysis assumes that study of the manifest content is meaningful.
> 3. Content analysis assumes that the quantitative description of communication content is meaningful. This assumption implies that the frequency of occurrence of various characteristics of the content is itself an important factor in the communication process.
>
> (Berelson 1952, p. 18)

The majority of prior studies on voluntary corporate disclosures have focused on content analysis of corporate annual reports to measure the extent of corporate disclosures. Fields in which this approach to data analysis is undertaken include social and environmental reporting research (Campbell et al., 2003; Deegan et al., 2000; Deegan et al., 2002; Deegan & Rankin, 1996; Lemon & Cahan, 1997; Tsang, 1998; Wilmshurst & Frost, 2000), mandatory and voluntary disclosure research (Botosan, 1997; Buzby, 1975; Chow & Wong-Boren, 1987; Cooke, 1992; Hossain & Adams, 1995; Hossain et al., 1995; Owusu-Ansah, 1997; Raffournier, 1995; Wallace & Naser, 1995; Wallace et al., 1994) and intellectual capital research (Bozzolan et al., 2003; Guthrie & Petty, 2000). Prior studies on voluntary disclosures relating to financial instruments and derivatives have also focused on annual reports to investigate the extent

of voluntary disclosures relating to financial instruments (Aggarwal & Simkins, 2004; Chalmers & Godfrey, 2000; Chalmers, 2001; Chalmers & Godfrey, 2004; Taylor & Redpath, 2000).

This study focuses on extracting data relating to the disclosure of financial instruments from companies' annual reports. There is support for the method of capturing data only from corporate annual reports. According to Gray et al. (1995) all forms of data reaching the public domain should be considered in order to capture all corporate social reporting made by an entity, as such data can be considered to be part of the accountability-discharge activity of the organization. However, according to Gray et al. (1995), since this is not practical as it is impossible to be certain that all communications made by an organization have been identified, there is justification for principally focusing just on the annual reports to capture corporate social reporting. Similarly, Guthrie et al. (2004) argue that the annual report is a relevant and useful proxy to focus research investigation. This is because 'annual reports are highly useful sources of information, because managers of companies commonly signal what is important through the reporting mechanism' (Guthrie et al. 2004, p. 287). Wilmshurst & Frost (2000) point out that the annual report is a statutory report that incorporates both statutory and voluntary disclosures, provided by companies on a regular basis and over which management exercises editorial control. Annual reports are also the most easily accessible form of corporate information. Guthrie & Petty (2000, p. 245) suggest that an annual report is a 'means by which a corporation locates and identifies itself with various external and internal stakeholders'. Lang & Lundholm (1993) find a positive correlation between disclosure levels from annual reports with the amount of disclosure provided through other media. Botosan (1997) argues that even though the annual report is only one means of corporate reporting, it should serve as a good proxy for the level of voluntary disclosure provided by a firm across all disclosure avenues.

Arguments against the selection of annual reports only to measure the extent of corporate disclosure have emerged in the corporate social reporting literature. Unerman (2000) concludes that for corporate social reporting, studies that focus exclusively on annual reports run the risk of not capturing the total social disclosures made by companies. This is because the disclosure of social information in annual reports represents a small proportion of the company's total social reporting (Unerman, 2000).

Although companies may use other reporting mediums such as Internet home pages, media releases, corporate advertisements, and company brochures to disclose corporate information, this study will focus on content analysis of annual reports. This is because the disclosure of information relating to the use of financial instruments is normally made by companies through their annual reports. Prior studies on disclosure relating to financial instruments have also focused their investigations on the content analysis of annual reports. Thus, in the area of voluntary corporate reporting relating to the disclosure of financial instruments, the use of content analysis of companies' annual reports to measure the extent of mandatory and voluntary disclosure is justified and empirically valid. By analysing the content of companies' annual reports, the extent of mandatory and voluntary disclosure of information relating to financial instruments can be extracted and patterns in disclosure of information relating to financial instruments can be analysed.

According to Berelson (1952), and Krippendorff (1980), the success of content analysis as a research technique depends on the reliability and validity of the procedures employed. Krippendorff (1980, p. 21) defines content analysis as 'a research technique for making replicable and valid inferences from data to their context'. According to Krippendorff (1980, p. 21):

> Any instrument of science is expected to be reliable. More specifically, when other researchers, at different points in time and perhaps under different circumstances, apply the same technique to the same data, the results must be the same.

Similarly, Berelson (1952) includes the word 'objective' and "systematic' in his definition of content analysis to emphasize the reliability and replicability aspect of content analysis as a research tool. Wilmshurst & Frost (2000, p. 17) state that one of the limitations in undertaking content analysis is the 'risk of inconsistent interpretation of what it is that is being measured'. According to Milne & Adler (1999), the reliability in content analysis involves two separate but related issues. First, content analysts seek to attest that the coded data set produced from the analysis is reliable by using either multiple coders and reporting that discrepancies between the coders are minimal, or by using a single coder who has undergone a sufficient period of training and a pilot sample that has shown an acceptable level of reliability. Second, the reliability of the

coding instrument needs to be established. Decision categories need to be well specified.

In order to ensure the reliability and validity of the measurement process in this study, a systematic method of categorizing and coding the items to be extracted from annual reports is undertaken. Each category of the mandatory and voluntary disclosure items investigated is clearly defined to enable items to be allocated to a particular category. The recording unit used in this study is also clearly defined. To ensure that the data extracted are reliable and accurate based on the categories identified, a second coder was used to independently extract a sample of the data. The detailed procedure involved in the content analysis of companies' annual reports will be further explained in Section 4.4 of this chapter.

4.2.2 Ratings by Panel of Experts

Once the voluntary disclosure items relating to the disclosure of financial instruments to be investigated in this study were identified, a questionnaire containing the voluntary disclosure items was prepared and distributed to selected securities analysts in order to obtain ratings on the degree of perceived proprietary costs embodied in each type of voluntary disclosure item. These analysts were targeted so that a consensus of expert opinion about the extent of proprietary costs that they perceived to be embodied in the voluntary disclosure items presented to them could be obtained.

The use of consensus amongst expert panels is widely used in research (Cohen et al., 1996; Cook et al., 2004; Evans & Crawford, 2000; Gabel & Shipan, 2004; Keller, 2001; Long & Swingen, 1987; Noble, 2004; Szeinbach et al., 2004). Collective decision-making by experts is viewed as better, in terms of identifying appropriate treatments, than individual decision-making (Eddy 1990). Evans & Crawford (2000, p. 545) suggest that 'experts are assumed to provide reasonable estimates of the items under questions.' However, Evans & Crawford (2000) also point out that problems such as accuracy of the estimate and generalisability of the estimates may arise from using expert opinion.

A panel of security analysts is used in this study as this 'sophisticated user' group is viewed as the most appropriate for the purpose of determining the perceived

proprietariness of the voluntary disclosure items. They are professional users of corporate financial information who continuously look for proprietary information embodied in new voluntary disclosures. It is acknowledged that different user groups may view different disclosure items as important and may provide different ratings, however, the view of 'sophisticated users' about different disclosure items relevant to financial instruments is likely to be representative of the thinking of market arbitragers and, therefore, provide the most potent user perspective. The ratings made by these experts are then used to create a weighted disclosure index to measure the quality of voluntary disclosure. Buzby (1974) adopted a similar approach of using responses from a group of financial analysts to weight a disclosure index.

4.3 Sample Selection

The focus of this study is on corporate disclosure relating to financial instruments for Australian companies. However, a preliminary investigation relating to the disclosure of financial instruments made by Malaysian companies is also undertaken. As indicated in Chapter 1, the investigation in Malaysia is a preliminary one due to the recent introduction of the standard on financial instruments disclosure, which became effective for financial statements covering periods beginning on or after 1 January 2002. The preliminary investigation in Malaysia will be limited as a comparative study with Australia. However, it will provide evidence of the disclosure practices of companies in an emerging capital market and will form the basis for future studies to be conducted in Malaysia.

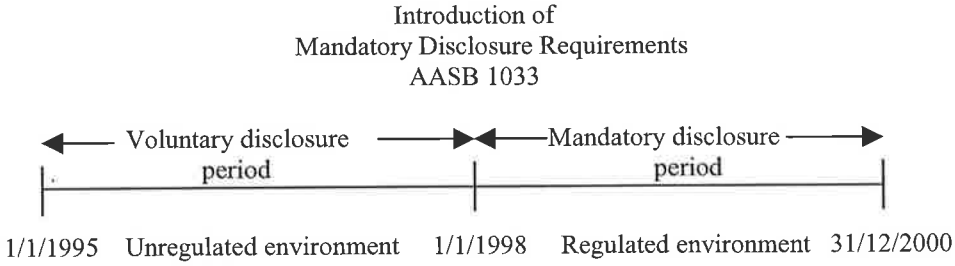
This study is restricted to companies that are listed on the stock exchanges of the respective countries. As companies that are listed on the Australian and the Malaysian Stock Exchange are publicly held, they are required to comply with the disclosure requirements relating to financial instruments issued by the AASB and the MASB. For Malaysian companies the focus is on companies that are listed on the Main Board of the Malaysian Stock Exchange.

4.3.1 Sampling Procedure - Australia

The sample for the Australian companies was sourced from *Connect 4*, a corporate financial database. This database contains the full text of annual reports of the top 500 listed companies in Australia. A stratified sampling method was used in which a

balance of companies was randomly chosen across selected industries. The sample firms are drawn from four industries: *Energy, Materials, Industrials, and Consumer Staples*. The classification of industries in Australia is based on the GICS industry classifications. These are industry classifications based on the Standard and Poor's Global Industry Classification Standard. These four industries are 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. Therefore, even though these companies generally use financial derivatives to a greater extent, their dual use of derivatives makes them different from other non-financial companies in other industries.

A six-year period of study was chosen for Australia, from 1 January 1995 to 31 December 2000. 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). The period of study in Australia is as follows:



To select the sample companies for this study, a search was made on the *Connect 4* database for companies from the four selected industries for the six-year period. Companies whose annual reports were not available on the database for the six-year period were dropped from the sample. A final sample comprising 70 Australian companies from four industries was randomly selected: 12 from *Energy*, 34 from *Materials*, 12 from *Industrials*, and 12 from *Consumer Staples* over a six-year period

resulting in 420 firm-year observations. The list of the sample companies is provided in Appendix 1.

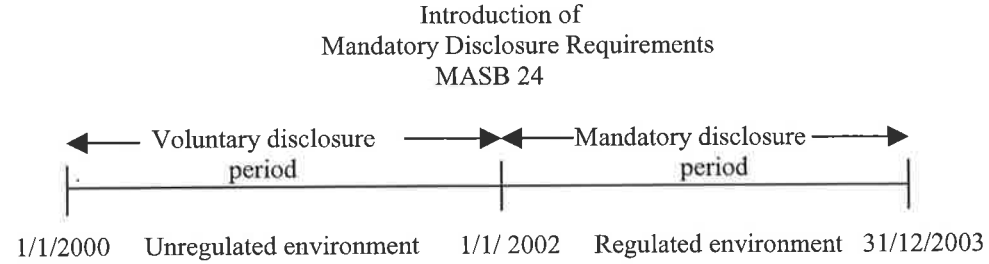
4.3.2 Sampling Procedure - Malaysia

The focus of the preliminary study in Malaysia is on three sectors: the *Plantation,* the *Industrial Products*, and the *Consumer Product* sectors. There are 13 sectors under which companies can be listed on the Malaysian Stock Exchange. Companies from these three sectors were chosen as they are regarded as being more likely to use financial instruments in Malaysia to finance their operations and businesses.

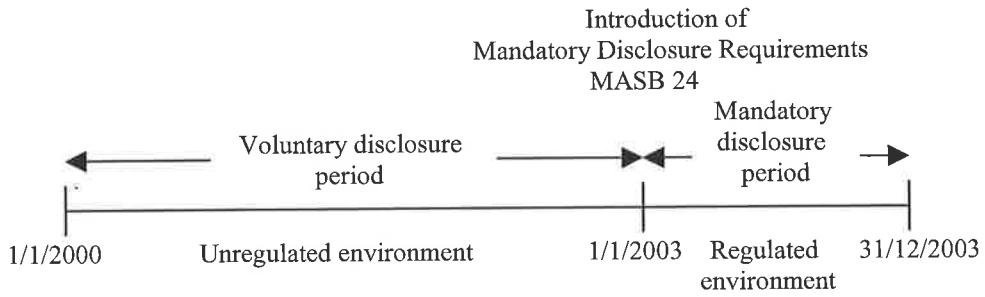
A sample of companies listed on the Main Board of the Malaysian Stock Exchange was sourced from the Malaysian Stock Exchange web site and from the Malaysian Stock Exchange library. As in Australia, the investigation is conducted for the regulated and unregulated disclosure period. However, due to the recent introduction of MASB 24 in Malaysia, a four-year study period was chosen for Malaysia, from 1 January 2000 to 31 December 2003. MASB 24 became operative for financial statements covering periods beginning on or after 1 January 2002. This means that for companies with a financial year beginning 1 January and ending on 31 December, the regulated disclosure period starts from 1 January 2002, whereas for companies whose financial year begins other than 1 January, the regulated disclosure period starts from 1 January 2003.

A stratified sample comprising of 21 companies from the three chosen sectors: 7 from the *Plantation* sector, 7 from the *Industrial Products* sector, and 7 from the *Consumer Products* sector, for a period of four years, was extracted, resulting in 84 firm-year observations for the study in Malaysia. The list of the sample companies is provided in Appendix 2. The period of study in Malaysia is as follows:

For companies with financial year 1 January – 31 December



For companies with financial year other than from 1 January – 31 December



4.4 Variable Measurement (Dependent Variable)

The dependent variable, which is the voluntary disclosure of financial instruments-related information, will be measured in two ways.

(1) The extent of disclosure of identified items of information relating to financial instruments, which are not required to be disclosed by AASB 1033 (or MASB 24) (the quantity of disclosure). This will be measured by counting the number of lines relating to the pre-identified items of financial instruments-related information from content analysis of companies' annual reports.

(2) The extent of disclosure as measured in (1), weighted for the degree of perceived proprietariness embodied in each voluntary disclosure item relating to financial instruments (the quality of disclosure). This will be measured by creating a weighted disclosure index to measure the degree of proprietary costs embodied in each item of voluntary disclosure.

The next section will discuss in detail the approaches adopted in measuring the dependent variable.

4.4.1 Quantity Voluntary Disclosure Index (VDISC)

The quantity of voluntary disclosure will be measured in two stages. First, the process of categorizing items which involves segregating financial instruments-related disclosure items into mandatory and voluntary disclosure items and second, counting the number of lines for each item disclosed.

4.4.1.1 Segregating Items Into Mandatory and Voluntary Disclosure

The first stage in measuring the quantity of voluntary disclosure involves the segregation of items related to financial instruments into mandatory and voluntary categories. The procedure for this disclosure categorization starts with an identification of the items required to be disclosed by AASB 1033 and MASB 24. As the requirements of AASB1033 and MASB 24 are almost the same in substance, similar categories of mandatory and voluntary disclosure items are used for both countries. To identify the types of mandatory disclosures, references were made to AASB 1033, MASB 24 and the Consolidated Model Financial Reports published by the firm of Deloitte Touche Tohmatsu for financial years ending on or after 30 June 2002.

Paragraphs in the accounting standard that are printed in *bold* type are the mandatory provisions of the standard, while paragraphs that are in *light* type are the additional commentary. For AASB 1033, there are 8 paragraphs that are printed in *bold* type for the disclosure part of the standard while for MASB 24 there are 7 *bold* type paragraphs. MASB 24 does not have a specific paragraph relating to the disclosure requirements of commodity contracts. Disclosure requirements relating to commodity contracts are included under *Disclosure of Risk Management Policies*. However, other provisions of the standards are similar. Table 1 depicts the mandatory requirements for both standards.

Table 1

Mandatory Disclosure Requirements for Financial Instruments

AASB 1033	MASB 24
Disclosure of Terms, Conditions and Accounting Policies	Disclosure of Risk Management Policies
Disclosure of Objectives of Derivative Financial Instruments	Terms, Conditions and Accounting Policies
Interest Rate Risk Disclosures	Interest Rate Risk
Credit Risk Disclosures	Credit Risk
Net Fair Value Disclosures	Fair Value
Disclosure of Financial Assets Carried at an Amount in Excess of Net Fair Value	Financial Assets Carried at an Amount in Excess of Fair Value
Disclosure of Hedges of Anticipated Future Transactions	Hedges of Anticipated Future Transactions
Disclosure of Commodity Contracts Regarded as Financial Instruments	

Further elaborations of the disclosure requirements as extracted from the accounting standards are shown in Appendix 3 and 4.

As suggested by Zeghal & Ahmed (1990), one of the limitations in using content analysis to measure disclosure quantity is the element of subjectivity involved in determining a particular type of disclosure. To overcome this limitation, the components of voluntary disclosure to be investigated in this study are grouped into five categories. The categories are as follows:

- risk management strategies and policies
- summary of historical information
- key information relevant to financial instrument
- projected information and
- management discussion and analysis.

Botosan (1997) uses a somewhat similar classification in her study on voluntary disclosure level and its effect on the cost of equity capital. In selecting the items to be included in the weighted disclosure index to measure the voluntary disclosure of information provided by firms in their annual reports, she uses as guidance the recommendations provided in the American Institute of Certified Public Accountants (1994) study of business reporting (the Jenkins Committee Report), the SRI International (1987) survey of investor information needs, and the Canadian Institute of Chartered Accountants (1991) study of annual reports. The five categories of voluntary information identified by investors and financial analysts as useful in investment decision-making in these studies are:

- background information
- summary of historical results
- key non-financial statistics
- projected information
- management discussion and analysis.

Similarly, Taylor & Redpath (2000) in their study on financial instruments disclosure use the following 4 categories to identify voluntary disclosures relating to financial instruments:

- financial results and position affected by financial instruments
- market information relevant to financial instruments
- historical information relevant to financial instruments
- information directly relevant to forecasts of future cash flows.

The categories as identified by Botosan (1997) will be adopted in this study, with variations. The first category used by Botosan (1997) relating to background information will be substituted by a category relating to risk management strategies and policies. Since this study relates to the disclosure of financial instruments-related information, background information relating to risk management strategies and policies is considered more relevant.

The next step is to identify the voluntary disclosure items to be included under each of the categories. These are adopted from two main sources:

(1) from suggestions made by AASB 1033 and MASB 24

(2) from Taylor & Redpath (2000).

Under *other disclosures,* AASB 1033 and MASB 24 encourage entities to make additional disclosures in their annual reports in order to enhance the users' understanding of the entities' use of financial instruments. For example, according to AASB 1033 paragraph 5.10.1, possible disclosures include:

(a) the aggregate change in net fair value recognised as a revenue or an expense for those financial assets and financial liabilities measured and recognised at net fair value

(b) more details about positions at the reporting date and activity during the reporting period, for example, the total amount of deferred or unrecognised gain or loss on hedging instruments other than those relating to hedges of anticipated future transactions

(c) the sensitivity of equity, or of revenues and expenses, to several possible changes in market prices

(d) the duration of the financial instruments

(e) the average aggregate carrying amount during the reporting period of recognised financial assets and financial liabilities, the average aggregate principal, stated, notional or other similar amount during the reporting period of unrecognised financial assets and financial liabilities and the average aggregate net fair value during the reporting period of all financial assets and financial liabilities, particularly when the amounts on hand at the reporting date are unrepresentative of amounts on hand during the reporting period

(f) the entity's value at risk from derivative financial instruments and from other positions at the reporting date and the average value at risk during the reporting period

Paragraph 5.4.10 of AASB 1033 also suggests that 'in some circumstances an entity may be able to provide useful information about its exposure to interest rate risks by indicating the effect of a hypothetical change in the prevailing level of market interest rates on the net fair value of its financial instruments and future financial performance and cash flows'. Thus, AASB 1033 encourages companies to develop other information and other ways of reporting information relating to their use of financial instruments.

In addition to the 'encouraged' items given in AASB 1033, this study also adopts some voluntary disclosure items from Taylor & Redpath's (2000) categories on market information relevant to financial instruments, historical information relevant to financial instruments and information directly relevant to forecasts of future cash flows.

Once the mandatory and voluntary disclosure items were identified, a pilot study of content analysis of annual reports of public listed companies was carried out. For the pilot study, a sample of 10 companies from Australia was chosen at random. A list of different items of disclosure relating to financial instruments was extracted from this sample and separated into mandatory and voluntary items. From the results of this preliminary content analysis, a review of the categories and items of mandatory and voluntary disclosures was made and some items were slightly modified and adjusted. Based on the final categories and items of mandatory and voluntary disclosures, a firm's financial instruments-related disclosure was coded using a 40-item instrument comprising 7 mandatory disclosure items and 33 voluntary disclosure items. Appendix 5 documents the final categories and items of mandatory and voluntary disclosures established for the content analysis in this study.

4.4.1.2 Counting Lines

Various recording units have been used by content analysis researchers to measure the extent of corporate disclosures. For example Deegan & Rankin (1996), Lemon & Cahan (1997) and Wilmshurst & Frost (2000), use word count while researchers such as Guthrie & Parker (1989) use number of pages. Other researchers such as Buhr (1998), Deegan et al. (2000), Deegan et al. (2002), and Tsang (1998), use number of sentences as the unit of analysis. According to Gray et al. (1995), there is some uncertainty as to the optimal measure of the extent of disclosure, with words, sentences and pages being the preferred units of analysis for written communication.

In this study, to measure the extent of disclosure relating to financial instruments within the annual reports, the number of lines relating to the particular item 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. Therefore, to standardize the measurement basis for both types of disclosure the number of lines relating to such information will be counted to measure the extent of disclosure relating

to financial instruments. The number of lines of disclosure relating to textual information on financial instruments disclosure found in notes to the financial statements, directors' review, chairman's statement, corporate governance statement, and in other sections of the annual report will be counted to measure the extent of text relating to financial instruments. For textual disclosures, the number of lines can comprise of complete sentences or part of sentences that are relevant to the items being searched. If the pages relating to the textual disclosures are divided into columns, then the total number of lines counted for such disclosures will be divided by the number of columns appearing on the page. For example, if an A4 page annual report is divided into three columns, then the total number of lines of disclosures for the page will be divided by three. In relation to tabulated information, every row in the table is considered as a line. In counting the lines of disclosure, companies are not penalized for not disclosing items that are not applicable to their business operations. For example, if companies indicate that they are not using derivative financial instruments to finance their activities or are not exposed to commodity price risk because of the nature of their activities, then items relating to such disclosure will be regarded as not applicable information rather than zero disclosure for that item.

To identify the disclosures within an annual report document relating to financial instruments, keywords relating to the items to be extracted were searched. For the Australian companies' annual reports, the keywords were electronically searched using the search option available on the *Connect 4* database. For the Malaysian companies' annual reports, the keywords were manually searched. The sections of the annual report where each keyword appeared were read in detail to fully understand each company's disclosure practices relating to financial instruments disclosures. Appendix 6 documents the string of keywords used to search for the items of disclosure.

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. This is to avoid a situation where a sample firm is penalized for non-disclosure of certain mandatory and voluntary disclosure items, which, in fact, are not applicable to it. Thus, the disclosure index used is a relative index, which is the ratio of what the reporting company actually discloses to what the company is expected to disclose. This relative index approach has been extensively used in prior studies of corporate disclosures

(Chalmers & Godfrey, 2004; Cooke, 1989; Owusu-Ansah, 1998; Wallace, 1988; Wallace et al., 1994).

In fact, a disclosure index has been widely used by researchers over the years to measure the determinants of corporate disclosure levels (Aggarwal & Simkins, 2004; Botosan, 1997; Buzby, 1974; Cerf, 1961; Chalmers, 2001; Chalmers & Godfrey, 2004; Chow & Wong-Boren, 1987; Cooke, 1992; Cooke & Wallace, 1989; Hossain et al., 1994; Hossain & Adams, 1995; Lang & Lundholm, 1993; Raffournier, 1995; Singhvi & Desai, 1971; Taylor & Redpath, 2000; Wallace et al., 1994). These studies have documented consistently strong and corroborative results indicating the validity of such indices in measuring the extent of voluntary disclosure. A review of disclosure indices in accounting research by Marston & Shrives (1991) concluded that the use of disclosure index to measure the level of disclosure provided researchers in many cases with the expected answers to their hypotheses.

The disclosure index used to measure corporate disclosure levels can be weighted or unweighted. An unweighted disclosure index assumes that each item of disclosure is equally important (Cooke, 1991), while a weighted disclosure index assumes that some items of disclosure are rated more important relative to other items. In this study, to measure the voluntary disclosure of information relevant to financial instruments (quantity of disclosure) an unweighted disclosure index is used. The disclosure index to be used to measure the quantity of voluntary disclosure in this study (to measure the effects of political costs) is calculated as follows:

$$VDISC_i = \sum_{c=1\text{-}5} [\sum_{v=1\text{-}n} (l_{vci}/X_{vci})*T_{vc}]$$

where $VDISC_i$ = voluntary disclosure index for company i

$c_{=1\text{-}5}$ = number of voluntary disclosure category

l_{vci} = number of lines of disclosure per voluntary items (v) in an information category (c) for company i

X_{vci} = applicable voluntary items (v) in an information category (c) for company i

T_{vc} = total possible voluntary items (v) in an information category (c)

The voluntary disclosure index gives a measure of the relative extent of the voluntary disclosure of identified items of information relating to financial instruments.

In order to ensure the reliability and accuracy of the lines counted, a research assistant reviewed a sample of the documents to assess the reliability and accuracy of the data collection. The results of the independent extraction of items of disclosure from six annual reports indicated that the counting procedure was reliable and accurate. In addition, due to the large number of firm year observations reviewed in this study, the effect of any potential measurement error or bias would have been minimized.

4.4.2 Quality Voluntary Disclosure Index (VDISCPROP)

A weighted disclosure index is used to score the voluntary disclosure of proprietary information relating to financial instruments (quality of disclosure). The main criticism of using a weighted disclosure index is the subjectivity that exists in the assignment of weights (Gray et al. 1992). In addition, Chow & Wong-Boren (1987) find almost identical results in their disclosure scores using both weighted and unweighted indices. However, in this study in order to investigate the impact of proprietary costs-inducing influences on the voluntary disclosure of financial instruments-related information, the voluntary disclosure items need to be ranked by the degree of proprietariness of information perceived to be embodied in each of the voluntary disclosure items. The concept of proprietariness of information refers to the extent of proprietary cost of competitive disadvantage to the company, or the proprietary benefit to the external user of competitive advantage, from disclosure of that information. In order to minimize subjective rankings, the rating of proprietariness for each voluntary disclosure item is made by securities analysts.

4.4.2.1 Questionnaire

Questionnaires were used to obtain proprietariness ratings from securities analysts. In designing the questionnaire, voluntary disclosure items that had been identified for the study were included in the instrument. For each item identified, the instrument seeks to measure respondents' perceptions of the extent to which proprietary benefits to the user (or costs to the company) are embodied in each disclosure item. Respondents were asked to rate from a scale of 1 to 5 ranging from negligible to high, the degree of proprietariness embodied in each disclosure item as a result of voluntarily disclosing

such information that is otherwise not publicly available. To assist in the decision to rate the proprietariness embodied in each item, 7 categories of information that could be revealed by disclosing such information were identified. The 7 categories of information identified were:

- the entity's future cash flows
- the entity's strategic plans
- the risk exposure facing the business
- the entity's major contract
- the entity's market outlook
- the entity's future liabilities
- the entity's asset values

The overall extent of usefulness to competitors forms the basis for rating the proprietariness for each voluntary disclosure item from negligible (1) to high (5). The sample of the covering letter accompanying the questionnaire and detail of the questionnaire used in this study is as shown in Appendix 7 and 8.

In order to pre-test the understanding of the items included in the questionnaire and to check for ambiguities and other anomalies that might affect the reliability of data, securities analysts in Adelaide were approached for interviews. Letters requesting an interview with securities analysts were sent to 8 of the top stockbroking firms in Adelaide (Appendix 9). Three securities analysts from the firm of ABN AMRO Morgans, Baker Young Stockbrokers, and Taylor Collison agreed to the interview. The interviews conducted ranged in length from half an hour to one hour, and were guided by a set of questions. In order to pilot test the questionnaire, the securities analysts were requested to fill out the questionnaire and to provide feedback on the appropriateness of the questions, their wordings, and the length of the questionnaire. Following the feedback given by the securities analysts in Adelaide, the questionnaires were slightly modified and sent to the top stock broking firms in Melbourne and Sydney. Firms such as ABN AMRO Morgans, Bell Potter Securities Ltd, Fortis Clearing Sydney Pty Ltd, Grange Securities Ltd, Intersuisse Ltd, Macquarie, Tolhurst Noall, Nomura Australia Ltd, Ord Minnett Ltd, Goldman Sachs JBWere, Merrill Lynch Smith Barney, and Taylor Collison Ltd were targeted, as the purpose of the survey was to obtain a

consensus of expert opinion from 'sophisticated users' who are familiar with financial instruments disclosures in companies' annual reports. A total of 6 usable responses were received from the targeted securities analysts in Australia. Some questionnaires were returned by the stockbroking firms unfilled, with comments that they lack expertise on financial instruments disclosures.

Similar questionnaires were distributed to selected securities firms in Malaysia such as CIMB Securities, Apex Securities, OSK Securities, Affin-OUB Securities, TA Securities, RHB Securities, Maybank Securities, PB Securities, and KL City Securities. A total of 6 usable responses were also obtained from the targeted securities analysts in Malaysia, resulting in a total of 12 responses. This number is considered sufficient to form the basis for expert opinion from the 'sophisticated user' group as those who were able to complete the questionnaires demonstrate their expert opinion on financial instruments disclosures.

4.4.2.2 Weighting the Voluntary Disclosure Items

The next stage in creating the weighted disclosure index was to use the responses from the securities analysts to weight the voluntary disclosure items in order to capture the extent to which proprietary information is voluntarily disclosed by companies. This weighted disclosure index is designed to measure the scope of information content and the quality of that information in terms of its proprietary costs. The weighted disclosure index gives a measure of the relative extent of voluntary disclosure embodying proprietary costs. The mean rating given by the 12 respondents for each voluntary disclosure item is the weight given to each of the voluntary disclosure item.

The total number of lines of voluntary disclosures weighted by the perceived proprietariness of the items disclosed is then adjusted for the total applicable items. Again this is done to avoid situations where a sample firm is penalized for non-disclosure of certain voluntary disclosure items, which, in fact, are not applicable to it. Thus, the weighted disclosure index (VDISCPROP) used in this study (to measure the effects of proprietary costs) is calculated as follows:

$$VDISCPROP_i = \sum_{c=1\text{-}5} \left[\sum_{v=1\text{-}n} ((Z_{vc} * l_{vci}) / X_{vci}) * T_{vc} \right]$$

where $VDISCPROP_i$ = proprietariness weighted voluntary disclosure index for company i

$c_{=1-5}$ = number of voluntary disclosure category

Z_{vc} = score for peceived proprietariness of voluntary disclosure items (v) in an information category (c)

l_{vci} = number of lines of disclosure per voluntary items (v) in an information category (c) for company i

X_{vci} = applicable voluntary items (v) in an information category (c) for company i

T_{vc} = total possible voluntary items (v) in an information category (c)

4.4.3 Comprehensiveness of Mandatory Disclosure

The comprehensiveness of mandatory disclosure is measured by the total number of lines of mandatory disclosures made by the sample firms. Similarly, in order to avoid penalizing a sample firm for non-disclosure of certain mandated items which are not applicable to it, a mandatory disclosure index is created by adjusting the total score received by a firm to the total applicable items. This mandatory disclosure index is the ratio of what the reporting firm actually discloses to what the firm is expected to disclose under the regulatory environment. The mandatory disclosure index (MDISC) is calculated as follows:

$$MDISC_i = \sum_{m=1-7} (l_{mi}/X_{mi})*T_m$$

where $MDISC_i$ = mandatory disclosure index for company i

$m_{=1-7}$ = number of mandatory disclosure items

l_{mi} = number of lines of disclosure per mandatory items (m) for company i

X_{mi} = applicable mandatory items (m) for company i

T_m = total possible mandatory items (m)

4.5 Variable Measurement (Independent Variables)

The corporate financial reporting literature suggests that several factors, including corporate attributes, influence the extent to which companies voluntarily disclose

financial information in their annual reports. In this section, the measurement of the seven independent variables (as identified in Section 3.3.1 of Chapter 3) is discussed in order to test the hypotheses developed in the previous chapter. The independent variable values are obtained or calculated using data from companies' annual reports and from the following databases: Connect 4, Thomson One, LexisNexis and Bloomberg.

4.5.1 Mandatory Disclosure Effect

A dichotomous variable will be used as a dummy, to separate the period into pre- and post-regulation years. All disclosure of financial instruments-related information will be treated as voluntary during the years prior to AASB 1033 and MASB 24 coming into effect. The anticipated mandatory disclosure period for Australia is the three years prior to AASB 1033 becoming mandatory in 1998. For Malaysia, the anticipated mandatory disclosure period is either two or three years prior to MASB 24 becoming mandatory depending on the companies' financial year end.

The mandatory disclosure index (MDISC) will be used to measure the effects of the anticipation of, and the existence of, mandatory disclosure requirements on voluntary disclosure of financial instruments-related information.

4.5.2 Investment Growth Opportunities

The concept of "investment opportunity set" (IOS) is not directly observable as it is contingent on discretionary expenditures and firm specific factors. Therefore, it is unlikely that an individual proxy can capture this concept. As summarized by Kallapur & Trombley (1999), several proxies have been used in the accounting and finance literature to capture Myers's idea of the IOS. Kallapur & Trombley (1999) classified IOS into three types: price-based proxies, investment-based proxies, and variance measures. According to them, the price-based proxies rely on the idea that if the growth prospects of the firm are at least partially impounded in stock prices, then growth firms will have higher market values relative to assets in place. The price-based proxies that have been used by previous researchers are:

- market to book value of equity (Bamber & Cheon, 1998; Chung & Charoenwong, 1991; Collins & Kothari, 1989; Gul, 1999; Ho et al., 2004; Lewellen et al., 1987)

- book to market value of assets (Gul, 1999; Smith & Watts, 1992)
- Tobin Q (Skinner, 1993)
- earnings to price ratios (Chung & Charoenwong, 1991; Gul, 1999; Ho et al., 2004; Kester, 1984; Smith & Watts, 1992)
- ratio of property, plant and equipment to firm value (Ho et al., 2004; Skinner, 1993)
- ratio of depreciation to firm value (Smith and Watts, 1992).

On the other hand, the investment-based proxies rely on the idea that a high level of investment activity is positively related to the IOS of the firm. Some of the investment-based proxies that have been used by prior studies are:

- ratio of research and development to assets (Gaver & Gaver, 1993)
- ratio of research and development to sales (Skinner, 1993)
- ratio of research and development to firm value (Smith & Watts, 1992)
- ratio of capital expenditure to value (Smith & Watts, 1992).

Variance measures rely on the idea that options become valuable as the variability of returns on the underlying asset increases. Measures of variance include:

- the variance of returns (Gaver & Gaver, 1993; Smith & Watts, 1992)
- asset betas (Skinner, 1993) and
- variance of asset-deflated sales (Ho et al., 2004).

In addition, Gaver & Gaver (1993) and Hutchinson & Gul (2003) in their studies combine their measures into a composite measure using factor analysis, while other studies have used these measures singularly.

Kallapur & Trombley (1999) provide evidence of a significant relationship between the book-to-market ratio and realized growth. They argue that the findings of some of these previous studies have not been entirely robust due to the choice of proxies in measuring IOS. Kallapur & Trombley (1999) provide evidence that the book-to-market ratio is a valid growth proxy in that it is the one most highly correlated with future growth. This result holds for all the book-to-market measures, namely book to market value of assets and equity, Tobin's Q, and also the ratio of book value of property, plant and equipment

to market value of assets. They also find that capital expenditure deflated by book value of assets is also associated with growth. However, their findings fail to document a consistent relation between realized growth and earnings-price ratio and between research and development intensity and growth, concluding that these two measures may not be a good growth proxy.

Based on Kallapur & Trombley's (1999) findings, Hutchinson & Gul (2003) used three price-based proxies for growth opportunities in their study, and this will form the basis for the choice of proxies to be used in this study. The three price-based proxies that will be used in this study similar to those used by Hutchinson & Gul (2003), are the market value of assets to book value of assets ratios (MKT/VA), the market-to-book value of equity (MKT/VE) and the ratio of gross plant, property and equipment to market value of the firm (PPE/MV). These variables are defined as follows:

MKT/VA = [(Total assets – Total common equity) + Shares outstanding x Share closing price]/Total Assets

MKT/VE = (Shares outstanding x Share closing price)/Total common equity

PPE/MV = Gross property, plant and equipment/(Market value of the firm + Non-current liabilities)

As investment opportunities can take alternative forms, similar to Gaver & Gaver (1993) and Hutchinson & Gul (2003) factor analysis will be used to reduce the variety of observable variables to a single factor. Table 2 presents the results of the common factor analysis for 403 sample firms for the Australian companies. Missing data among the individual growth measures precludes some firms from the analysis. Panel A presents the estimated communality of the three price-based proxies for investment growth opportunities. Panel B presents the eigenvalues of the reduced correlation matrix for the three individual measures of investment growth opportunities. Panel C presents the correlations between the common factor (GROWTH) and the three individual measures of investment growth opportunities. 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. Panel

D presents the descriptive statistics for GROWTH for the sample before reduction. The common factor identified as GROWTH will be used as the measure for investment growth opportunities in this study.

Table 2

Common Factor Analysis of the Three Price-based Proxies for Investment Growth Opportunities (N = 403)

	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)

4.5.3 Corporate Hedging Strategies

AASB 1033 and MASB 24 require firms to report information on financial instruments with off-balance-sheet risk. Under the section *Significant Terms and Conditions*, the standards require firms to report the principal, stated, face or notional amounts of their financial instrument. This requirement enables the use of notional value of derivative holdings as the basis for measuring the extent of hedging. The use of aggregated notional values of derivative holdings to measure the extent of hedging has been adopted by prior researchers (Aggarwal & Simkins, 2004; Allayannis & Ofek, 2001; Berkman & Bradbury, 1996; Graham & Rogers, 2002). Graham and Rogers (2002) in addition to using aggregated notional values of derivatives holdings also calculate the 'net' derivatives position, arguing that while the total notional value effectively gauges derivatives ownership, it may not accurately estimate derivatives hedging if a firm holds offsetting contracts. However, since both AASB 1033 and MASB 24 do not require firms to disclose the direction of the hedge, this study will use the aggregated notional values of derivative holdings to measure the extent of hedging.

Even though firms can hedge with operational strategies, such as building a manufacturing facility in a locality that is the source of foreign currency risk, or issuing convertible debt, this study will focus on hedging with derivatives. The focus will be on

hedging against exposure to interest rate, foreign exchange rate risk, and commodity risk. The extent of corporate hedging in this study will adopt the measures developed by Aggarwal & Simkins (2004) for foreign currency derivatives and Graham & Rogers (2002) for interest rate derivatives. The measure for commodity hedging is specifically develops in this study.

Thus, the measures of the extent of corporate hedging for foreign currency risk, interest rate risk, and commodity risks are as follows:

> Foreign Currency derivatives (FCD) = Aggregate notional values of foreign currency derivatives /Total sales

For interest rate derivatives, the following measure is used:

> Interest rate derivatives (IRD) = Aggregate notional values of interest rate derivatives/Total Assets

The following measure is used for commodity hedging:

> Commodity derivatives (CMD) = Aggregate notional values of commodity derivatives/Total sales

The total measure of the extent of corporate hedging for a firm will therefore be the aggregate of the three measures for corporate hedging (HEDGE).

For the period before the introduction of the standard, disclosure of the notional amounts was not required. Thus, as suggested by Nance et al. (1993), the level of corporate hedging for this period can be measured by means of a survey. Such a survey however, would have serious limitations. Some of the limitations that may arise are as follows:

- non response, that is reluctance on the part of the respondents to reveal past proprietary information or

- error due either to the inability of respondents to recall past technical detail or the exaggeration of the actual facts or
- the problem of creating two measures for one variable, a subjective measure through a survey to determine the extent of hedging by companies for the period before the introduction of the standard, and an objective measure based on the aggregate notional values of the derivatives held by companies as disclosed in their annual reports for the period after the introduction of the standard.

Due to these limitations, the extent of corporate hedging for the period before the introduction of the standard can only be measured for companies that voluntarily disclose the notional value of their derivative holdings. Thus, for companies that do not disclose the notional value of their derivative holdings, the extent of corporate hedging for these companies is not measured and is regarded as missing data in subsequent hypothesis testing.

4.5.4 Probability of Financial Distress

The variable financial distress has been extensively used by researchers in the study of corporate hedging. Geczy et al. (1997) use two measures of borrowing capacity as proxies for a firm's pre-hedging probability of financial distress: the interest coverage ratio, and the long- term debt ratio. They argue that the lower a firm's coverage ratio and the higher its long-term debt ratio, the greater the probability of financial distress. The use of the debt ratio to measure the expected costs of financial distress has also been taken up in other studies (Berkman & Bradbury, 1996; Graham & Rogers, 2002; Haushalter, 2000).

In addition, Nance et al. (1993) argue that firms can reduce the expected financial distress and agency costs associated with long-term debt by maintaining greater short-term liquidity. Drawing on Nance et al.'s (1993) argument, Geczy et al. (1997) use the quick ratio and the dividend payout ratio to proxy for a firm's short-term liquidity. Graham & Rogers (2002) also examine a firm's profitability in investigating a firm's financial distress. They argue that less profitable firms have a higher probability of encountering distress. They measure profitability as the pre-tax return on assets.

In order to obtain a composite measure for companies in financial distress, it is imperative that these different accounting ratios that measure different facets of the companies are considered together. Various models have been developed to give a single measure for financial distress. The first Z-score model that provided a single measure of financial distress was developed in the US by Altman (1968) to predict corporate bankruptcy. In the UK, Taffler (1983; 1984) developed a Z-score based on a linear discriminant model. His model uses financial ratio data within a multivariate decision model framework to indicate the degree to which the financial profile of the company under examination resembles the profile of either previous failures or typical financially healthy companies. The model is popularly use by banks and industrial firms in the UK to identify potential insolvent concerns.

Castagna & Matolcsy (1981) developed a Z-score model for Australian companies using a number of discriminant analysis models for sample firms that were listed on the Sydney Stock Exchange from 1963-1977. Their model analysed various aspects including linear v. quadratic discriminant classification rules, equal v. unequal prior probabilities of failure assumptions, temporal v. atemporal models and variable dimension reducing techniques.

In this study, a Z-score model developed by Izan (1984) will be used to measure the financial distress of companies. Izan (1984) developed an industry-relative, business failure classification model combining ratios from a sample of approximately 100 failed and non-failed companies in Australia. This industry-relative model provides a single measure for financial distress across industries as raw ratios are adjusted to reduce the impact of industry differences. To reduce the impact of industry differences Izan (1984) suggests the use of the following 'industry relatives' (IR):

$IR_{it} = X_{it}/X_{igt}$

where

IR_{it} = industry relative for ratio i in period t

X_i = ratio i,

g = industry g,

t = year t and

X_{igt} = industy g's median for ratio i in period t

An IR below 1.0 indicates a less than industry 'average' performance for that ratio in that specific year. An IR greater than 1.0 indicates above average performance.

Izan (1984) identified five IRs as providing the best measure of corporate failure. Thus, her IR-discriminant model, which is linear in form, contains the following variable set:

X_1 = Earnings before interest and taxes (EBIT)/Total assets

X_2 = EBIT/ Interest expense

X_3 = Current assets/Current liabilities

X_4 = Funded debt (borrowings)/Shareholders' funds

X_5 = Market value of equity/Total liabilities

The summation of these variables (with a constant term) yields a Z-score:

$$Z = a_0 + a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_5X_5$$

where a_0 is the constant term, $a_1 - a_5$ are the coefficients or weights, and $X_1 - X_5$ are the IR. Table 3 gives the standardized coefficient or weights to be used for each variable.

Table 3

Standardized Coefficient for Each Variable - Adapted from Izan (1984, p. 313)

Variable	Standardized coefficient
EBIT/Total asset (X_1)	0.23
EBIT/ Interest expense (X_2)	0.53
Current Assets/Current liabilities (X_3)	0.24
Funded debt (borrowings)/ Shareholders' funds (X_4)	-0.25
Market value of equity/Total liabilities (X_5)	0.44

The measure for financial distress will be carried out to determine the probability of financial distress for sample companies. Table 4 depicts Izan's (1984) group classification probabilities for the industry relative model. These probabilities will be used in this study to measure a firm's state of financial distress. The temporal stability of these financial ratio indicators of financial distress is deemed to be sufficiently strong to justify use of the probabilities from Table 4 in the measure of probable financial distress in this study.

Table 4

Group Classification Probabilities – Industry Relative Model

Adapted from Izan (1984, p. 317)

Z-score	Failed group probability
>3.50	<0.001
2.30	0.01
2.04	0.02
1.80	0.03
1.50	0.05
1.22	0.10
1.00	0.15
0.77	0.20
0.66	0.25
0.46	0.30
0.32	0.35
0.26	0.40
0.12	0.45
0.00	0.50
-0.08	0.55
-0.19	0.60
-0.32	0.65
-0.44	0.70
-0.55	0.75
-0.63	0.80
-0.90	0.85
-1.16	0.90
-1.52	0.95
-1.85	0.97
-2.15	0.98
-2.45	0.99
<-2.5	>0.99

According to Izan (1984), firms with an industry relative determined Z-score of greater than 3.50 have less than 0.1% probability of being classified as failed. A score of 0.00 implies a 50% probability, a score of –0.55 implies a 75% probability and –1.16 results in a 90% probability.

4.5.5. Size of Companies

The size of a company is commonly defined and measured based on its market capitalization. The use of market capitalization to measure company size has the advantage of determining company size based on market perception of the company's future prospects. Thus, by measuring size based on market capitalization, company size is measured based on people's expectations about a company's future. In this study the natural log of market capitalization will be used to measure company size, as the data do not meet the parameters of a normal distribution, and thus they are transformed into their natural logarithmic values (Bozzolan et al., 2003; Chalmers & Godfrey, 2000; Mohebbi et al., 2005).

4.5.6 Media Attention

Unfavorable media attention will be measured by the number of relevant articles in the print media. The use of the number of relevant articles appearing in major national and regional newspapers to measure media attention was also undertaken by Deegan et al. (2002) to test the relationship between unfavourable print media coverage and social and environmental disclosures. Negative media coverage in newspaper articles covering the collapse of Barings Bank from 1995-2000 will be reviewed. This will be done by assessing the database LexisNexis that allows a review of a variety of major newspapers. Major world newspapers and Australian newspapers are available through this database, including newspapers such as the Australian Financial Review, The Advertiser, The Age, The Australian, The Sydney Morning Herald, the New York Times, The Economist, and the Far Eastern Economic Review. The number of negative media articles in Australian newspapers from 1995-2000 relating to the collapse of Barings Banks will be identified and aggregated.

4.6 Variable measurement (Control Variables)

The following measures are used to control for the potential impact of industry classification and ownership structure on management's disclosure decisions.

4.6.1 Industry of the Company

To control for the effect of industry classification, categorical data are used to classify the sample into each industry group.

4.6.2 Dispersion of Share Ownership

To control for the extent of concentration of shareholding in the company, such share ownership structure is measured as the number of shares held by the top 20 shareholders as a proportion of the total number of shares issued (Chalmers & Godfrey 2004).

Table 5 provides a summary of the variables, their measurements and their sources.

Table 5

Summary of the Variables, their Measurements and Sources

Variables	**Measures**	**Source**
Dependent variable		
• $VDISC_i$ (voluntary disclosure index for company i)	$\sum_{c=1-5} [\sum_{v=1-n} (l_{vci}/X_{vci})*T_{vc}]$ $c_{=1-5}$ = number of voluntary disclosure category l_{vci} = number of lines of disclosure per voluntary items (v) in an information category (c) for company i X_{vci} = applicable voluntary items (v) in an information category (c) for company i T_{vc} = total possible voluntary items (v) in an information category (c)	Connect 4
• $VDISCPROP_i$ (proprietariness weighted voluntary disclosure index for company i)	$\sum_{c=1-5} [\sum_{v=1-n} ((Z_{vc}*l_{vci})/X_{vci})*T_{vc}]$ $c_{=1-5}$ = number of voluntary disclosure category Z_{vc} = score for perceived proprietariness of voluntary disclosure items (v) in an information category (c) l_{vci} = number of lines of disclosure per voluntary items (v) in an information category (c) for company i X_{vci} = applicable voluntary items (v) in an information category (c) for company i T_{vc} = total possible voluntary items (v) in an information category (c)	Connect 4

Table 5 (Continued)

Variables	Measures	Source
Independent variables		
Mandatory Disclosure		
• $MDISC_i$ (mandatory disclosure index for company i)	$\sum_{m=1-7} (l_{mi}/X_{mi})*T_m$ $m_{=1-7}$ = number of mandatory disclosure items l_{mi} = number of lines of disclosure per mandatory items (m) for company i X_{mi} = applicable mandatory items (m) for company i T_m = total possible mandatory items (m)	Connect 4
Proprietary Costs		
GROWTH		
• MKT/ VA	[(Total assets – Total common equity) + Shares outstanding x Share closing price] /Total Assets (Hutchinson & Gul, 2003)	Thomson One, Connect 4 & Bloomberg
• MKT/VE	(Shares outstanding x Share closing price)/Total common equity (Hutchinson & Gul, 2003)	Connect 4 & Bloomberg
• PPE/MV	Gross property, plant and equipment/ (Market value of the firm + Non-current liabilities) (Hutchinson & Gul, 2003)	Thomson One & Connect 4
HEDGE		
Mandatory disclosure period		
• FCD	Aggregate notional values of foreign currency derivatives /Total sales (Aggarwal & Simkins, 2004)	Connect 4
• IRD	Aggregate notional values of interest rate derivatives/Total Assets (Graham & Rogers, 2002)	Connect 4
• CMD	Aggregate notional values of commodity derivatives /Total sales	Connect 4

Table 5 (Continued)

Variables	Measures	Source
Independent variables		
Political Costs		
DISTRESS		
• IR_{it}	X_{it}/X_{igt} where IR_{it} = industry relative for ratio i in period t X_i = ratio i, g = industry g, t = year t and 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	Thomson One
X_2 (Interest coverage)	EBIT/interest expense	Thomson One
X_3 (Liquidity ratio)	Current assets/Current liabilities	Thomson One
X_4 (Leverage measure)	Long term + Short term debts/Common shareholders equity	Thomson One
X_5 (Relationship between market value of common equity compared with total liabilities)	Market value of common equity/Total liabilities	Thomson One, & Bloomberg
SIZE	Natural log of market capitalization (Chalmers & Godfrey, 2000; Bozzolan et al., 2003; Mohebbi et al., 2005)	Bloomberg
MEDIA	Number of relevant articles in the Australian print media during the year (Deegan et al., 2002)	LexisNexis
Control Variables		
OWNERSHIP STRUCTURE	Number of shares held by the top 20 shareholders as a proportion of the total number of shares issued (Chalmers & Godfrey, 2004)	Connect 4
INDUSTRY	Nominal data classified by each industry group	

4.7 Summary

This chapter presents the research methodology adopted in this study including an explanation of the choice of method used to collect data. Basically, the data for this study is collected through content analysis of companies' annual reports. Various databases such as Connect 4, Thomson One, Bloomberg and LexisNexis are used to source data for the study. In developing a weighted disclosure index to measure the quality of voluntary disclosure relating to financial instruments, a panel of experts comprising of securities analysts is used to rate the degree of perceived proprietariness embodied in each type of voluntary disclosure item. The use of such a panel of experts provides face validity to the ratings. These ratings were sourced using questionnaires.

The chapter then proceeds with an explanation of the sampling procedure and the time period for the study. An in-depth explanation of the measurements used to measure the dependent, independent, and control variables, including the justification for each measure, is also given in the chapter.

The details of the data analysis, including the testing of the hypotheses developed in Section 3.4 of Chapter 3, are provided in the next chapter.

Chapter 5

Data Analysis and Discussion

5.1 Introduction

This chapter presents and discusses the results of the various data analyses carried out in this study. Primary data collected through a survey questionnaire and secondary data extracted from companies' annual reports and corporate databases are used in the analyses. Both univariate and multivariate analysis are applied to the collected data. Since the variables are defined in a way that allows them to be measured with objective data from corporate databases and annual reports, single item scales are devised to capture these variables. Hence validity and reliability tests, which are important for variables measured using primary data and multiple item scales, are not an issue. Nevertheless, nominal data are obtained for most of the variables. Consequently, the normality of distributions for these variables is an issue in order to apply parametric tests. As explained in Chapter 4, no variables are measured using a single absolute figure, apart from MEDIA. Therefore, non-normality of distributions would be unlikely. Since MEDIA is not measured in relation to each company in the sample, parametric analysis is not affected by this variable.

The only subjective data used in the study is the collection by survey of proprietary cost ratings made by securities analysts on the voluntary disclosure items. The results of a consensus test on these respondents' ratings of the proprietary cost weights are first provided. Next, the results relating to Australian companies' disclosures, which is the focus of this study are presented. The presentation of the results for the Australian companies will start with descriptive statistics relating to the collection of objective data concerned with mandatory and voluntary disclosure of financial instruments-related information, the growth and hedging components, the probability of financial distress and the negative media attention. The chapter then proceeds with the testing of hypotheses generated in Chapter 4. The initial testing of the hypotheses is carried out by using univariate tests. By conducting univariate tests some initial insights into the relationship between the dependent variable and the independent variables are obtained. After this initial analysis, the chapter then proceeds to the next stage of hypotheses

testing by using multiple regression analysis based on the panel estimation method. The final part of the chapter presents the preliminary results from Malaysian companies' disclosures. Descriptive statistics on mandatory and voluntary disclosure items relating to financial instruments for Malaysian companies and univariate tests on the effects of mandatory disclosure requirements on the voluntary disclosure of financial instruments-related information are presented.

The analyses are undertaken using SPSS 12, EViews 5.1 and TSP 4.5.

5.2 Proprietary Cost Ratings

In order to create a weighted voluntary disclosure index to measure the voluntary disclosure of proprietary information, the voluntary disclosure items relating to financial instruments disclosure need to be weighted for the perceived inherent level of proprietary costs in the different disclosure items. The mean rating score amongst the respondents for each respective voluntary disclosure item is used as the weight for that particular item in determining the weighted voluntary disclosure. The resultant VDISCPROP will measure the proprietariness of the total voluntary disclosure items relating to financial instruments.

Table 6 presents the means, medians, and standard deviations for the proprietary cost weights for each voluntary disclosure item. The responses from the expert panel of 12 securities analysts are pooled and the mean rating score for each item is calculated. The voluntary disclosure items are then ranked from the highest to the lowest, based on the mean rating score given for each of the item. Voluntary disclosure items under the category of *Projected Information* are rated as having higher proprietary costs by the panel of experts over other categories, with the disclosure on *forecast future levels of production* having the highest-rated mean of 4.1667 (out of a total score of 5). The lowest-rated item which is *summary of past market interest rates* has a mean score of 1.6667.

Table 6

Extent of Perceived Proprietary Costs on the Voluntary Disclosure Items Relevant to Financial Instruments Disclosure

Voluntary Disclosure Items	Proprietary Cost Weights Importance Rating Mean	Median	Std Deviation
1. Forecast of future levels of production	4.1667	4.0000	0.83485
2. Profit forecast	4.0000	4.0000	1.04447
3. Forecast of future market share	4.0000	4.0000	1.12815
4. Cash flow	3.9167	4.0000	1.08362
5. Sales forecast	3.9091	4.0000	0.94388
6. Forecast sales at current balance sheet date on contracts held but to be settled in the future	3.5833	3.5000	1.16450
7. The sensitivity of equity or revenues and expenses to several possible changes in market prices	3.4167	4.0000	1.08362
8. The adequacy of collateral or other security held assuming a default had occurred, including its net fair value	3.1667	3.0000	0.93744
9. The probability of losses arising from credit risk in the future	3.0833	3.0000	0.90034
10. Effect of a hypothetical change in the prevailing level of market interest rates on future financial performance of the firm	3.0000	3.0000	0.95346
11. The entity's value at risk or aggregate value at risk from derivative financial instruments	3.0000	3.0000	0.73855
12. Discussion of the firm's financial risk management and treasury policies as agreed by its directors	3.0000	3.0000	1.04447
13. Discussion of management's policies on hedging of risk	3.0000	3.0000	1.04447
14. Discussion of management's specific financial control policies to monitor the risks associated with financial instruments	3.0000	3.0000	0.95346
15. Discussion of liquidity management and how the firm monitors and controls the associated risks	3.0000	3.0000	0.95346
16. Discussion of the firm's policy in monitoring each type of risk (price, currency, interest rate, credit, liquidity, cash flow risk)	2.8333	3.0000	0.93744

Table 6 (continued)

Extent of Perceived Proprietary Costs on the Voluntary Disclosure Items Relevant to Financial Instruments Disclosure

Mandatory and Voluntary Disclosure Items	Proprietary Cost Weights Importance Rating Mean	Median	Std Deviation
17. Total amount of deferred or unrecognised gains or losses on hedging instruments (other than for hedges of anticipated future transactions)	2.8333	3.0000	0.83485
18. Effect of a hypothetical change in the prevailing level of market interest rates on the cash flow of the firm	2.8333	3.0000	0.93744
19. Summary of past contractual prices	2.8333	2.0000	1.33712
20. Summary of past realized prices on settlement of contracts	2.7500	3.0000	1.05529
21. Discussion of the associated risks and the business purposes served by using hedging instruments	2.6667	3.0000	1.15470
22. Average aggregate principal/stated/ notional amount for unrecognised financial assets and financial liabilities	2.6667	3.0000	1.15470
23. The total average net fair value for financial assets, financial liabilities and unrecognised financial items, respectively	2.5833	2.5000	1.16450
24. Effect of a hypothetical change in the prevailing level of market interest rates on the net fair value of financial instruments	2.5000	3.0000	0.67420
25. Summary of past hedging gains and losses	2.4545	2.0000	1.03573
26. Discussion of the extent to which various types of financial instruments are used	2.4167	2.0000	1.08362
27. The duration of the financial instruments of past exchange rates	2.4167	2.5000	1.08362
28. The aggregate positive fair value and, separately, the aggregate negative fair value for financial assets and financial liabilities disclosed at fair value	2.4167	2.0000	1.24011
29. Summary of past exchange rates	2.3333	2.0000	1.07309
30. Summary of past commodities sales	2.3333	2.0000	1.07309
31. Information on the maturity profile of the carrying amount of financial liabilities	2.3333	2.0000	0.98473

Table 6 (continued)

Extent of Perceived Proprietary Costs on the Voluntary Disclosure Items Relevant to Financial Instruments Disclosure

	Proprietary Cost Weights Importance Rating		
Mandatory and Voluntary Disclosure Items	Mean	Median	Std Deviation
32. Information on any material undrawn committed borrowing facilities	2.3333	2.0000	0.98473
33. The average aggregate carrying amount of recognised financial assets and financial liabilities	2.2727	2.0000	1.00905
34. The aggregate change in net fair value recognised as a revenue or an expense for financial assets and financial liabilities	2.2500	2.0000	0.75378
35. Summary of past market prices of tradable commodities	2.1667	2.0000	1.02986
36. Summary of past market interest rates	1.6667	1.5000	0.88763

5.3. Consensus Test on Respondents' Ratings of Proprietary Cost Weights

To test the consensus amongst the respondents' ratings of the proprietary cost weights for the voluntary disclosure items, a bi-variate correlation analysis is carried out for all possible pairs, (N=66) among the respondents. Table 7 presents the results of the correlations analysis and the mean and median for these correlations. A mean 0.309 indicates that, on the whole, there is evidence of a moderate consensus amongst the respondents' ratings. These values are comparable to prior studies of judgment consensus (see for example Chow & Wong-Boren, 1987). Thus, the use of the mean rating score to create the weighted voluntary disclosure index to measure the voluntary disclosure of proprietary information is justified.

Table 7

Bi-variate Correlations of the Panel of Experts Ratings of the Perceived Proprietary Costs (Pearson Correlation)

	resp1	resp2	resp3	resp4	resp5	resp6	resp7	resp8	resp9	resp10	resp11
resp2	-.060										
resp3	.178	.178									
resp4	.291	.337*	.188								
resp5	.431**	.063	.513**	.498**							
resp6	.168	.351*	.292	.658**	.594**						
resp7	-.066	.191	.028	.324	.025	.468**					
resp8	.255	.098	.279	.556**	.607**	.652**	.354*				
resp9	.105	.397*	-.020	.339*	.064	.396*	.347*	.258			
resp10	.372*	.180	.218	.600**	.822**	.643**	.183	.537**	.089		
resp11	.262	.120	.398*	.106	.459**	.461**	.451**	.543**	.401*	.316	
resp12	.094	-.056	.235	.153	.384*	.353*	.382*	.564**	.052	.194	.544**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Mean = 0.309045
Median = 0.32

5.4. Descriptive Statistics for Australian Companies

Descriptive statistics relating to the mandatory and voluntary disclosure of financial instruments-related information, the growth and hedging components, the probability of firms facing financial distress, and the negative media attention relating to financial instruments for Australian companies are presented in this section.

5.4.1 Mandatory and Voluntary Disclosure Items

Descriptive statistics relating to the mandatory and voluntary disclosure of financial instruments-related information in sample firms' annual reports from 1995 to 2000 appear in Tables 8 to11.

Table 8 presents the description of the aggregate disclosure of mandatory and voluntary items relating to financial instruments for 1995–2000. As explained in Chapter 4, mandatory items are those prescribed in bold type in AASB 1033; voluntary items are adopted from Botosan's (1997) and Taylor & Redpath's (2000) categories of voluntary information identified by investors and financial analysts as useful in investment decision-making. For the Mandatory Disclosure Items, the item on the *disclosure and discussion of the extent and nature of financial derivatives used* has the highest overall mean of 22.54 lines of disclosure. This is followed by the item on *discussion of firm's*

exposure to interest rate risk with an overall mean of 20.42 lines. *Disclosure of accounting policies and methods adopted for financial derivatives* has the lowest overall mean in this category with 5.66 lines of disclosure. There does not emerge an intuitive pattern of 'usefulness' of items concerning their extent of mandatory disclosure. For example, discussion of the firm's risk exposure varies widely between different risk categories. Rather, the extent of mandatory disclosure for each item appears to be related to the amount of activity associated with each item. For example, the overall mean disclosure for interest rate risk exposure is much higher than for credit risk or commodity price risk exposure because more firms deal with interest rate risk. The aggregate mandatory disclosure index (MDISC) shows an overall mean of 87.54 lines of disclosure.

For the Voluntary Disclosure Items, in addition to the aggregate voluntary disclosure index (VDISC), a voluntary disclosure index for each category (which is the total number of lines for the category, adjusted for the proportion of applicable items in the category to the total possible items in the category) is also shown. The voluntary disclosure index for the category on *Discussion of Risk Management Strategies and Policies Relating to Financial Instruments* has the highest overall mean (12.64 lines of disclosure). The item, *discussion of firm's risk management and treasury policies* in this category has the highest mean. 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. Thus, general information receives higher voluntary disclosure than specific information.

Table 8

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

Disclosure Items	Frequencies Distribution (number of lines disclosed)							
		Percentiles						
	N	25	50	75	Overall Mean	Min	Max	Std Dev
Mandatory Disclosure Items								
Disclosure and discussion of the extent and nature of financial derivatives used	377	3.00	16.00	29.00	22.54	0	201	27.626
Disclosure of accounting policies and methods adopted for financial derivatives	376	0.25	5.00	8.00	5.66	0	30	5.672
Discussion of firm's exposure to interest rate risk	420	0.00	17.00	36.00	20.42	0	91	21.152
Discussion of firm's exposure to credit risk	420	0.00	6.00	10.00	6.46	0	32	6.213
Discussion of firm's exposure to commodity price risk and the hedging instruments used to mitigate this risk	186	0.00	4.00	8.00	10.93	0	177	24.610
Disclosure of the aggregate net fair value of financial assets and financial liabilities and the methods adopted in determining net fair value	420	0.00	6.00	24.00	13.52	0	75	16.670
Objectives for holding or issuing derivatives	377	3.00	6.00	11.00	7.89	0	63	8.222
Mandatory Disclosure Index (MDISC)	420	23.33	76.00	127.50	87.54	0	426	80.558
Voluntary Disclosure Items								
Discussion of Risk Management Strategies and Policies Relating to Financial Instruments								
Discussion of firm's risk management and treasury policies	420	0.00	4.00	10.00	6.27	0	52	7.623
Discussion of management's specific financial control policies to monitor the risks associated with financial instruments	420	0.00	0.00	0.00	0.44	0	32	2.147
Discussion of liquidity management and how the firm monitors and controls the associated risks	420	0.00	0.00	0.00	0.48	0	7	1.269
Discussion of firm's policy in monitoring and controlling price, market, business, cash flow risks	419	0.00	1.00	4.00	3.22	0	45	6.071
Discussion of firm's foreign exchange risk management and the hedging instruments used to mitigate this risk	389	0.00	0.00	4.00	2.33	0	43	4.766
Voluntary Disclosure Index for Risk Management	420	4.00	9.00	17.00	12.64	0	86	13.13
Summary of Historical Information Relevant to Financial Instrument								
Summary of past exchange rates	370	0.00	0.00	0.00	0.29	0	12	1.520
Summary of past sales	420	0.00	1.00	2.00	2.89	0	33	5.169
Summary of past market prices of tradable commodities	179	0.00	0.00	0.00	0.40	0	12	1.512
Summary of past realized prices on settlement of contracts	370	0.00	0.00	0.00	0.08	0	3	0.425
Summary of past hedging gains and losses	370	0.00	0.00	0.00	0.03	0	2	0.218
Summary of past market interest rates	420	0.00	0.00	0.00	0.02	0	2	0.217
Summary of past contractual prices	370	0.00	0.00	0.00	0.02	0	1	0.126
Voluntary Disclosure Index for Historical Information	420	0.00	1.17	4.67	3.90	0	91	7.675
Key Information Relevant to Financial Instrument								
Average aggregate principal/stated/notional amount for unrecognised financial derivatives	370	0.00	0.00	0.00	0.00	0	0	0.00

Table 8 (continued)
Description of Aggregate Disclosure of Mandatory and Voluntary Items Relating to Financial Instruments for 1995 – 2000

Disclosure Items	Frequencies Distribution (number of lines disclosed)							
		Percentiles						
	N	25	50	75	Overall Mean	Min	Max	Std Dev
Voluntary Disclosure Items								
Information on the maturity profile of the carrying amount of financial liabilities	415	0.00	0.00	3.00	3.13	0	33	5.791
Information of any material undrawn committed borrowing facilities	415	1.00	2.00	5.00	3.12	0	27	3.310
The aggregate change in net fair value recognised as a revenue or an expense for financial assets and financial liabilities	420	0.00	0.00	0.00	0.00	0	0	0.00
The aggregate positive fair value and, separately, the aggregate negative fair value for financial assets and financial liabilities disclosed at fair value	420	0.00	0.00	0.00	0.18	0	4	0.671
The total average net fair value for financial assets, financial liabilities and unrecognised financial items	420	0.00	0.00	0.00	0.00	0	0	0.00
The average aggregate carrying amount of recognised financial assets and financial liabilities	420	0.00	0.00	0.00	0.00	0	0	0.00
Total amount of deferred or unrecognised gains or losses on hedging (other than for hedges of anticipated future transactions)	370	0.00	0.00	0.00	1.25	0	42	4.686
Voluntary Disclosure Index for Key Information	420	2.00	5.00	9.00	7.59	0	76	9.38
Projected Information								
Cash flow forecast	420	0.00	0.00	0.00	1.23	0	91	8.049
Profit forecast	420	0.00	1.00	4.00	2.83	0	25	4.166
Sales forecast	420	0.00	0.00	4.00	2.66	0	51	5.573
Forecast of future levels of production	420	0.00	0.00	4.00	2.95	0	50	5.408
Forecast of future market share	420	0.00	0.00	0.00	0.30	0	9	0.905
Forecast sales at current balance sheet date on contracts held but to be settled in the future	420	0.00	0.00	0.00	1.13	0	61	4.484
Voluntary Disclosure Index for Projected Information	420	3.00	7.00	15.00	11.10	0	97	13.60
Management Discussion and Analysis								
Effect of a hypothetical change in the prevailing level of market interest rates on the net fair value of financial instruments	420	0.00	0.00	0.00	0.00	0	0	0.000
Effect of a hypothetical change in the prevailing level of market interest rates on future financial performance of the firm	420	0.00	0.00	0.00	0.01	0	2	0.109
Effect of a hypothetical change in the prevailing level of market interest rates on the cash flow of the firm	420	0.00	0.00	0.00	0.00	0	0	0.000
The probability of losses arising from credit risk in the future	420	0.00	0.00	0.00	0.16	0	6	0.621
The sensitivity of equity or revenues and expenses to several possible changes in market prices	420	0.00	0.00	0.00	0.16	0	9	0.943
The entity's value at risk or aggregate value at risk from derivative financial instruments	376	0.00	0.00	0.00	0.04	0	3	0.344
The adequacy of collateral or other security held assuming a default had occurred, including its net fair value	420	0.00	0.00	0.00	0.19	0	8	0.771
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 9. 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 9 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. In fact all items in the mandatory disclosure category except for the item *discussion of firm's exposure to commodity price risk and the hedging instruments used to mitigate this risk* show a significant increase over the 6-year period. 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, with two of the items in that category (*discussion of firm's risk management and treasury policies; and discussion of firm's policy in monitoring and controlling price, market, business and cash flow risks*) showing significant increase over the 6 years. The only other voluntary disclosure item that shows a significant increase over the 6-year period is the item under the category of *Key Information Relevant to Financial Instrument*. The item relating to information on *the aggregate positive fair value and, separately, the aggregate negative fair value for financial assets and financial liabilities disclosed at fair value* in that category indicates 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 9

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								
Disclosure and discussion of the extent and nature of financial derivatives used	10.66	10.84	18.19	28.79	32.57	34.56	10.870	0.000**
Disclosure of accounting policies and methods adopted for financial derivatives	3.25	3.67	4.70	6.89	7.40	8.11	9.194	0.000**
Discussion of firm's exposure to interest rate risk	3.06	4.00	10.63	29.20	36.10	39.53	84.799	0.000**
Discussion of firm's exposure to credit risk	2.01	2.06	4.90	9.91	9.84	10.06	42.119	0.000**
Discussion of firm's exposure to commodity price risk and the hedging instruments used to mitigate this risk	5.42	5.45	8.32	14.74	17.81	13.84	1.423	0.218
Disclosure of the aggregate net fair value of financial assets and financial liabilities and the methods adopted in determining net fair value	3.40	3.64	9.96	21.06	21.77	21.31	26.072	0.000**
Objectives for holding or issuing derivatives	5.46	5.60	6.59	9.56	10.00	10.17	4.956	0.000**
MDISC	30.06	31.99	61.99	122.56	136.80	141.85	44.837	0.000**
Voluntary Disclosure Items								
Discussion of Risk Management Strategies and Policies Relating to Financial Instruments								
Discussion of firm's risk management and treasury policies	2.37	4.14	6.37	7.61	8.61	8.53	8.429	0.000**
Discussion of management's specific financial control policies to monitor the risks associated with financial instruments	0.26	0.26	0.16	0.77	0.69	0.49	0.969	0.437
Discussion of liquidity management and how the firm monitors and controls the associated risks	0.43	0.39	0.44	0.49	0.57	0.57	0.256	0.937
Discussion of firm's policy in monitoring and controlling price, market, business, cash flow risks	0.51	3.11	3.67	4.30	3.71	3.97	3.704	0.003**
Discussion of firm's foreign exchange risk management and the hedging instruments used to mitigate this risk	1.88	2.02	2.31	2.75	2.63	2.38	0.324	0.898
Voluntary Disclosure Index for Risk Management	5.32	9.85	12.86	15.78	16.14	15.87	8.294	0.000**
Summary of Historical Information Relevant to Financial Instrument								
Summary of past exchange rates	0.10	0.06	0.24	0.53	0.47	0.37	0.997	0.419
Summary of past sales	2.30	2.33	2.66	2.96	3.76	3.36	0.885	0.491
Summary of past market prices of tradable commodities	0.20	0.23	0.33	0.31	0.60	0.70	0.544	0.743
Summary of past realized prices on settlement of contracts	0.03	0.08	0.06	0.10	0.10	0.10	0.234	0.947
Summary of past hedging gains and losses	0.00	0.02	0.03	0.05	0.05	0.05	0.549	0.739
Summary of past market interest rates	0.03	0.03	0.03	0.03	0.03	0.00	0.200	0.962

Table 9 (continued)
Disclosure Items: Comparison of Means by Year

Disclosure Items	1995	1996	1997	1998	1999	2000	F-value	Sig
	Number of lines of disclosure							
Voluntary Disclosure Items Summary of past contractual prices	0.02	0.02	0.02	0.02	0.02	0.02	0.000	1.000
Voluntary Disclosure Index for Historical Information	2.75	2.80	3.35	5.12	4.94	4.43	1.358	0.239
Key Information Relevant to Financial Instrument Average aggregate principal/stated/notional amount for unrecognised financial derivatives	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Information on the maturity profile of the carrying amount of financial liabilities	3.16	3.61	2.67	2.81	3.32	3.23	0.241	0.944
Information on any material undrawn committed borrowing facilities	2.52	2.38	3.22	3.54	3.68	3.36	1.864	0.100
The aggregate change in net fair value recognised as a revenue or an expense for financial assets and financial liabilities	0.00	0.00	0.00	0.00	0.00	0.00	-	-
The aggregate positive fair value and, separately, the aggregate negative fair value for financial assets and financial liabilities disclosed at fair value	0.03	0.03	0.09	0.31	0.33	0.31	3.613	0.003**
The total average net fair value for financial assets, financial liabilities and unrecognised financial items	0.00	0.00	0.00	0.00	0.00	0.00	-	-
The average aggregate carrying amount of recognised financial assets and financial liabilities	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Total amount of deferred or unrecognised gains or losses on hedging (other than for hedges of anticipated future transactions)	0.81	0.76	0.74	1.62	1.76	1.82	0.796	0.553
Voluntary Disclosure Index for Key Information	5.18	5.36	5.36	6.53	7.18	6.94	0.874	0.498
Projected Information Cash flow forecast	0.46	0.34	0.39	0.36	2.76	3.10	1.897	0.094
Profit forecast	2.83	2.20	2.49	2.71	3.67	3.09	1.051	0.387
Sales forecast	2.33	2.63	2.40	2.99	2.83	2.79	0.147	0.981
Forecast of future levels of production	2.16	2.97	2.86	2.74	3.30	3.69	0.641	0.669
Forecast of future market share	0.43	0.26	0.39	0.26	0.26	0.19	0.720	0.608
Forecast sales at current balance sheet date on contracts held but to be settled in the future	1.84	1.34	0.69	0.89	1.04	0.97	0.584	0.712
Voluntary Disclosure Index for Projected Information	10.04	9.74	9.20	9.94	13.86	13.81	1.746	0.123
Management Discussion and Analysis Effect of a hypothetical change in the prevailing level of market interest rates on the net fair value of financial instruments	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Effect of a hypothetical change in the prevailing level of market interest rates on future financial performance of the firm	0.03	0.00	0.00	0.00	0.00	0.01	0.840	0.522
Effect of a hypothetical change in the prevailing level of market interest rates on the cash flow of the firm	0.00	0.00	0.00	0.00	0.00	0.00	-	-
The probability of losses arising from credit risk in the future	0.19	0.20	0.14	0.14	0.17	0.14	0.114	0.989

Table 9 (continued)

Disclosure Items: Comparison of Means by Year

Disclosure Items	1995	1996	1997	1998	1999	2000	F-value	Sig
	Number of lines of disclosure							
Voluntary Disclosure Items								
The sensitivity of equity or revenues and expenses to several possible changes in market prices	0.23	0.31	0.11	0.10	0.14	0.07	0.663	0.652
The entity's value at risk or aggregate value at risk from derivative financial instruments	0.05	0.05	0.05	0.05	0.05	0.00	0.201	0.962
The adequacy of collateral or other security held assuming a default had occurred, including its net fair value	0.17	0.24	0.14	0.16	0.26	0.17	0.264	0.933
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

To further analyse the mandatory and voluntary disclosures, a comparison of means of the disclosure index for the four industries is undertaken for the period of study. Table 10 presents the results of this analysis. The results indicate that there is a significant difference in the means of MDISC between the four industries with *Materials* having the highest score (97.72 lines of disclosure). For the voluntary disclosure items, the mean voluntary disclosure index for four of the categories and the mean for VDISC show a significant difference during the period of study. However, the difference in the means for the Voluntary Disclosure Index for Historical Information is not significant. These results suggest the presence of an 'industry effect' on the extent of corporate disclosure of both mandatory and voluntary items.

Table 10

Disclosure Index: Comparison of Means by Industry

Disclosure Index	Energy	Materials	Industrials	Consumer Staples	F-value	Sig
	Number of lines of disclosure					
MDISC	84.39	97.72	64.20	85.21	3.206	0.023*
Voluntary Disclosure Index for Risk Management	17.52	12.89	10.31	9.35	5.801	0.001**
Voluntary Disclosure Index for Historical Information	4.61	3.38	4.11	4.44	0.650	0.583
Voluntary Disclosure Index for Key Information	6.98	9.49	4.56	5.83	6.487	0.000**
Voluntary Disclosure Index for Projected Information	15.32	9.73	12.03	9.83	3.375	0.018*
Voluntary Disclosure Index for Management Discussion and Analysis	0.29	0.81	0.19	0.47	4.094	0.007**
VDISC	44.73	36.31	31.20	29.93	3.700	0.012*

** Significant at the 0.01 level
* Significant at the 0.05 level

5.4.2 Weighted Voluntary Disclosure Items

To create the weighted voluntary disclosure index, the number of lines of disclosure for each voluntary disclosure item is multiplied by a 'proprietariness' rating score for that item (as indicated in Table 6) and subsequently divided by 3. This division by 3 is required to provide comparability between the weighted and the unweighted voluntary disclosure items as a likert scale of 1-5 is used in the survey questionnaire to rate the voluntary items, resulting in a median of 3. The weighted voluntary disclosure index is then adjusted for the proportion of applicable voluntary disclosure items in a category to the total possible items in the category.

Table 11 presents the comparison of the means between years for the weighted voluntary disclosure items and the proprietariness weighted voluntary disclosure index (VDISCPROP) for 1995 – 2000. The weighted voluntary disclosure index for each category (which is the proprietariness weighted total number of lines for the category, adjusted for the proportion of applicable items in the category to the total possible items in the category) is also shown. As in Table 9, a one-way ANOVA is undertaken to

analyse the variance between the groups over the 6-year period, and an F-ratio is calculated. Table 11 indicates that VDISCPROP is significantly different over the 6 years with an F-value of 4.712. However, only the Weighted Voluntary Disclosure Index for the category *Discussion of Risk Management Strategies and Policies Relating to Financial Instruments* shows a significant increase in voluntary disclosure over the 6-year period. The extent of voluntary disclosure of proprietary information about risk management has significantly increased up to and including, in 1998. After AASB 1033 became effective in 1998, the extent of voluntary proprietary information disclosure is seen in Table 11 to have stabilized.

Table 11

Weighted Disclosure Items: Comparison of Means by Year

Disclosure Items	1995	1996	1997	1998	1999	2000	F-value	Sig
	Number of lines of disclosure							
Voluntary Disclosure Items								
Discussion of Risk Management Strategies and Policies Relating to Financial Instruments								
Discussion of firm's risk management and treasury policies	2.37	4.14	6.37	7.61	8.61	8.52	8.429	0.000**
Discussion of management's specific financial control policies to monitor the risks associated with financial instruments	0.26	0.26	0.16	0.77	0.69	0.49	0.969	0.437
Discussion of liquidity management and how the firm monitors and controls the associated risks	0.43	0.39	0.44	0.49	0.57	0.57	0.256	0.937
Discussion of firm's policy in monitoring and controlling price, market, business, cash flow risks	0.48	2.94	3.47	4.06	3.51	3.75	3.704	0.003**
Discussion of firm's foreign exchange risk management and the hedging instruments used to mitigate this risk	1.77	1.90	2.18	2.60	2.48	2.25	0.324	0.898
Weighted Voluntary Disclosure Index for Risk Management	5.19	9.57	12.54	15.40	15.79	15.52	8.435	0.000**
Summary of Historical Information Relevant to Financial Instrument								
Summary of past exchange rates	0.08	0.05	0.19	0.41	0.36	0.29	0.997	0.419
Summary of past sales	1.79	1.81	2.07	2.30	2.92	2.61	0.885	0.491
Summary of past market prices of tradable commodities	0.14	0.17	0.24	0.22	0.43	0.51	0.544	0.743
Summary of past realized prices on settlement of contracts	0.03	0.07	0.06	0.09	0.09	0.09	0.234	0.947
Summary of past hedging gains and losses	0.00	0.01	0.03	0.04	0.04	0.04	0.549	0.739
Summary of past market interest rates	0.02	0.02	0.02	0.02	0.02	0.00	0.200	0.962
Summary of past contractual prices	0.02	0.02	0.02	0.02	0.02	0.02	0.000	1.000
Weighted Voluntary Disclosure Index for Historical Information	2.13	2.18	2.61	3.98	3.84	3.45	1.365	0.236

Table 11 (continued)

Weighted Disclosure Items: Comparison of Means by Year

Disclosure Items	1995	1996	1997	1998	1999	2000	F-value	Sig
	Number of lines of disclosure							
Voluntary Disclosure Items								
Key Information Relevant to Financial Instrument								
Average aggregate principal/stated/notional amount for unrecognised financial derivatives	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Information on the maturity profile of the carrying amount of financial liabilities	2.46	2.81	2.07	2.19	2.58	2.51	0.241	0.944
Information on any material undrawn committed borrowing facilities	1.96	1.85	2.50	2.75	2.86	2.61	1.864	0.100
The aggregate change in net fair value recognised as a revenue or an expense for financial assets and financial liabilities	0.00	0.00	0.00	0.00	0.00	0.00	-	-
The aggregate positive fair value and, separately, the aggregate negative fair value for financial assets and financial liabilities disclosed at fair value	0.02	0.02	0.07	0.25	0.26	0.25	3.613	0.003**
The total average net fair value for financial assets, financial liabilities and unrecognised financial items	0.00	0.00	0.00	0.00	0.00	0.00	-	-
The average aggregate carrying amount of recognised financial assets and financial liabilities	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Total amount of deferred or unrecognised gains or losses on hedging (other than for hedges of anticipated future transactions)	0.76	0.72	0.70	1.53	1.66	1.72	0.796	0.553
Weighted Voluntary Disclosure Index for Key Information	5.18	5.36	5.36	6.53	7.18	6.94	0.929	0.462
Projected Information								
Cash flow forecast	0.60	0.45	0.50	0.47	3.60	4.05	1.897	0.094
Profit forecast	3.77	2.93	3.31	3.62	4.90	4.11	1.051	0.387
Sales forecast	3.03	3.43	3.13	3.89	3.69	3.63	0.147	0.981
Forecast of future levels of production	3.00	4.13	3.97	3.81	4.58	5.12	0.641	0.669
Forecast of future market share	0.57	0.34	0.51	0.34	0.34	0.25	0.720	0.608
Forecast sales at current balance sheet date on contracts held but to be settled in the future	2.20	1.60	0.82	1.06	1.25	1.16	0.584	0.712
Weighted Voluntary Disclosure Index for Projected Information	13.17	12.88	12.25	13.19	18.35	18.32	1.780	0.116
Management Discussion and Analysis								
Effect of a hypothetical change in the prevailing level of market interest rates on the net fair value of financial instruments	0.00	0.00	0.00	0.00	0.00	0.00	-	-
Effect of a hypothetical change in the prevailing level of market interest rates on future financial performance of the firm	0.03	0.00	0.00	0.00	0.00	0.01	0.840	0.522

Table 11 (continued)

Weighted Disclosure Items: Comparison of Means by Year

Disclosure Items	1995	1996	1997	1998	1999	2000	F-value	Sig
	Number of lines of disclosure							
Voluntary Disclosure Items								
Effect of a hypothetical change in the prevailing level of market interest rates on the cash flow of the firm	0.00	0.00	0.00	0.00	0.00	0.00	-	-
The probability of losses arising from credit risk in the future	0.19	0.21	0.15	0.15	0.18	0.15	0.114	0.989
The sensitivity of equity or revenues and expenses to several possible changes in market prices	0.26	0.36	0.13	0.11	0.16	0.08	0.663	0.652
The entity's value at risk or aggregate value at risk from derivative financial instruments	0.05	0.05	0.05	0.05	0.05	0.00	0.201	0.962
The adequacy of collateral or other security held assuming a default had occurred, including its net fair value	0.18	0.26	0.15	0.17	0.27	0.18	0.264	0.933
Weighted Voluntary Disclosure Index for Management Discussion and Analysis	0.70	0.86	0.47	0.47	0.65	0.42	0.746	0.590
Proprietariness weighted voluntary disclosure index (VDISCPROP)	26.38	30.85	33.22	39.57	45.82	44.66	4.712	0.000**

** Significant at the 0.01 level

5.4.3 Growth and Hedging Components

Turning to the independent variables in the study, growth and hedging are variables that reflect a firm's condition of proprietariness of information disclosed. Table 12 presents the means for the growth factor (GROWTH) and the total for hedging (HEDGE) for the period of study. Table 12 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, nor is there significant difference in the hedging components including HEDGE. Thus, the mean conditions of proprietariness of information disclosure for all firms in the sample, namely investment growth opportunities and the extent of risk control through hedges, have not trended in any identifiable direction over the 6-year period.

Table 12

Growth and Hedging 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**
FCD	204	0.4050	0.4693	0.8827	1.0728	1.0316	1.1154	0.855	0.513
IRD	165	0.2736	0.2305	0.2411	0.1972	0.1681	0.1546	0.987	0.427
CMD	87	1.5817	1.3982	2.2381	5.0378	2.5655	2.4128	1.317	0.265
HEDGE	277	1.0320	0.9604	1.6266	2.2667	1.6045	1.6275	0.802	0.549

** Significant at the 0.01 level

5.4.4 Probability of Financial Distress

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 13. 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 13

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

5.4.5 Media Attention

A second condition affecting the political cost of non-disclosure is media attention. Table 14 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 14

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

5.5 Hypotheses Testing for Australian Companies

The most extensive data analysis in this study will involve the testing of the hypotheses that have been generated. Both univariate and multivariate tests are conducted for each group of hypothesis.

5.5.1 Univariate Tests

In testing the relationship between mandatory and voluntary disclosure and the effect of proprietary information costs on the voluntary disclosure of proprietary information, a univariate analysis is first carried out to examine the separate associations between firms' voluntary disclosure of proprietary information and the independent variables of interest. This will be the initial stage of testing H1, H2, H3, H4, H5 and H6. Univariate tests can provide some initial insights into the relationship between the dependent variable and the independent variables. However, univariate analysis can only consider the effects of the independent variables in isolation of each other. To strengthen the univariate analysis findings regarding the hypothesized relationships, separate tests are undertaken on samples for the regulated and unregulated disclosure environments.

Similar univariate analysis is carried out to examine the separate associations between firms' voluntary disclosure of information, and the political cost-based determinants of probability of financial distress, size of company, and media attention (Testing of H7, H8 and H9a).

5.5.1.1 Effects of Anticipation of and the Existence of Mandatory Disclosure Requirements – Tests of H1, H2 and H3

The first group of hypotheses tests the relationship between mandatory and voluntary disclosures. More specifically, they test the relationship between voluntary disclosure of proprietary information and the introduction of a regulated disclosure environment.

In testing H1 which predicts that an increase in mandatory disclosure of non-proprietary information relevant to financial instruments increases the voluntary disclosure of related proprietary information, a comparison is made between the means of the mandatory disclosure items for the pre- and post-regulation years with the means of the weighted voluntary disclosure items for the same period. Table 15 presents the comparison of means between the pre- and post-regulation years for the mandatory disclosure items while Table 16 presents the comparison of means between the pre- and post-regulation years for the weighted voluntary disclosure items. An independent-sample t-test is used to compare the mean score for the two groups of years.

Table 15

Mandatory Disclosures: Comparison of Means between Pre-Regulation and Post-Regulation Years

Disclosure Items	Pre years mean	Post years mean	t	Sig (2-tailed)
Mandatory Disclosure Items				
Disclosure and discussion of the extent and nature of financial derivatives used	13.22	32.01	-6.995	0.000**
Disclosure of accounting policies and methods adopted for financial derivatives	3.87	7.47	-6.460	0.000**
Discussion of firm's exposure to interest rate risk	5.90	34.94	-19.353	0.000**
Discussion of firm's exposure to credit risk	2.99	9.94	-13.813	0.000**
Discussion of firm's exposure to commodity price risk and the hedging instruments used to mitigate this risk	6.40	15.46	-2.549	0.012*
Disclosure of the aggregate net fair value of financial assets and financial liabilities and the methods adopted in determining net fair value	5.67	21.38	-10.943	0.000**
Objectives for holding or issuing derivatives	5.88	9.91	-4.904	0.000**
MDISC	41.35	133.74	-14.336	0.000**

** Significant at the 0.01 level
* Significant at the 0.05 level

Table 16

Weighted Disclosures: Comparison of Means between Pre-Regulation and Post-Regulation Years

Disclosure Items	Pre years mean	Post years mean	t	Sig (2-tailed)
Voluntary Disclosure Items				
Discussion of Risk Management Strategies and Policies Relating to Financial Instruments				
Discussion of firm's risk management and treasury policies	4.30	8.25	-5.502	0.000**
Discussion of management's specific financial control policies to monitor the risks associated with financial instruments	0.22	0.65	-2.030	0.043*
Discussion of liquidity management and how the firm monitors and controls the associated risks	0.42	0.54	-1.000	0.318
Discussion of firm's policy in monitoring and controlling price, market, business, cash flow risks	2.30	3.77	-2.643	0.009**
Discussion of firm's foreign exchange risk management and the hedging instruments used to mitigate this risk	1.95	2.44	-1.078	0.282
Weighted Voluntary Disclosure Index for Risk Management	9.1002	15.5733	-5.364	0.000**
Summary of Historical Information Relevant to Financial Instrument				
Summary of past exchange rates	0.10	0.36	-2.040	0.042*
Summary of past sales	1.89	2.61	-1.846	0.066
Summary of past market prices of tradable commodities	0.18	0.39	-1.252	0.213
Summary of past realized prices on settlement of contracts	0.05	0.09	-0.875	0.382
Summary of past hedging gains and losses	0.01	0.04	-1.440	0.151
Summary of past market interest rates	0.02	0.01	0.449	0.654
Summary of past contractual prices	0.02	0.02	-0.013	0.989
Weighted Voluntary Disclosure Index for Historical Information	2.3047	3.7557	-2.510	0.013*

Table 16 (continued)

Weighted Disclosures: Comparison of Means between Pre-Regulation and Post-Regulation Years

Disclosure Items	Pre years mean	Post years mean	t	Sig (2-tailed)
Voluntary Disclosure Items				
Key Information Relevant to Financial Instrument				
Average aggregate principal/stated/notional amount for unrecognised financial derivatives	0.00	0.00	-	-
Information on the maturity profile of the carrying amount of financial liabilities	2.45	2.43	0.043	0.965
Information on any material undrawn committed borrowing facilities	2.10	2.74	-2.536	0.012*
The aggregate change in net fair value recognised as a revenue or an expense for financial assets and financial liabilities	0.00	0.00	-	-
The aggregate positive fair value and, separately, the aggregate negative fair value for financial assets and financial liabilities disclosed at fair value	0.04	0.26	-4.225	0.000**
The total average net fair value for financial assets, financial liabilities and unrecognised financial items	0.00	0.00	-	-
The average aggregate carrying amount of recognised financial assets and financial liabilities	0.00	0.00	-	-
Total amount of deferred or unrecognised gains or losses on hedging (other than for hedges of anticipated future transactions)	0.73	1.64	-1.982	0.048*
Weighted Voluntary Disclosure Index for Key Information	5.2975	6.8856	-2.100	0.036*
Projected Information				
Cash flow forecast	0.52	2.70	-2.143	0.033*
Profit forecast	3.34	4.21	-1.608	0.109
Sales forecast	3.20	3.74	-0.761	0.447
Forecast of future levels of production	3.70	4.50	-1.101	0.272
Forecast of future market share	0.48	0.31	1.403	0.161
Forecast sales at current balance sheet date on contracts held but to be settled in the future	1.54	1.15	0.740	0.460
Weighted Voluntary Disclosure Index for Projected Information	12.7659	16.6190	-2.215	0.027*

Table 16 (continued)
Weighted Disclosures: Comparison of Means between Pre-Regulation and Post-Regulation Years

Disclosure Items	Pre years mean	Post years mean	t	Sig (2-tailed)
Voluntary Disclosure Items				
Management Discussion and Analysis Effect of a hypothetical change in the prevailing level of market interest rates on the net fair value of financial instruments	0.00	0.00	-	-
Effect of a hypothetical change in the prevailing level of market interest rates on future financial performance of the firm	0.01	0.00	0.447	0.655
Effect of a hypothetical change in the prevailing level of market interest rates on the cash flow of the firm	0.00	0.00	-	-
The probability of losses arising from credit risk in the future	0.18	0.16	0.392	0.695
The sensitivity of equity or revenues and expenses to several possible changes in market prices	0.25	0.12	1.242	0.215
The entity's value at risk or aggregate value at risk from derivative financial instruments	0.05	0.03	0.437	0.662
The adequacy of collateral or other security held assuming a default had occurred, including its net fair value	0.20	0.21	-0.127	0.899
Weighted Voluntary Disclosure Index for Management Discussion and Analysis	0.6790	0.5153	1.009	0.314
VDISCPROP	30.1473	43.3490	-4.477	0.000**

** Significant at the 0.01 level
* Significant at the 0.05 level

Table 15 indicates that there is a significant increase in all the mandatory disclosure items and in MDISC from the pre- to the post-regulation years. This result is expected since, with the introduction of AASB 1033 'Presentation and Disclosure of Financial Instruments', companies are required to disclose these items in the post-regulation years and such disclosures are no longer voluntary. Results from Table 16 indicate that during the same period, VDISCPROP shows a significant increase from the pre- to the post-regulation years. In fact the weighted voluntary disclosure index for all categories, except for the Weighted Voluntary Disclosure Index for Management Discussion and Analysis, indicates a significant increase in voluntary disclosure of proprietary information from the pre- to the post-regulation years. Thus, H1 is fully accepted

indicating that an increase in the mandatory disclosure of non-proprietary information relevant to financial instruments results in an increase in the voluntary disclosure of related proprietary information.

However, the nature of the voluntary information may influence management's decision to disclose the proprietary information. This is indicated by the category *Management Discussion and Analysis* not showing a significant increase from the pre- to the post-regulation years. Voluntary disclosure items in this category consistently have a low amount of disclosure in the pre- and post-regulation years. This indicates that managers are not willing to disclose such information in the pre-regulation years, and that the introduction of the accounting standards on financial instruments disclosure encouraging such disclosures has not influenced their voluntary disclosure decisions.

In testing for H2, which states that 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, an analysis is made of the Weighted Voluntary Disclosure Index for the five categories of voluntary disclosure items and VDISCPROP for the pre-regulation years. Table 17 presents the comparison of means for the Weighted Voluntary Disclosure Index for each category and VDISCPROP during the pre-regulation years. A one-way ANOVA is undertaken to analyse the variance between the years for each sub-category over the 3-year period and an F-ratio calculated.

Table 17

Weighted Voluntary Disclosures: Comparison of Means for Pre-Regulation Years

Disclosure Index	1995	1996	1997	F-value	Sig
	Number of lines of disclosure				
Weighted Voluntary Disclosure Index for Risk Management	5.19	9.57	12.54	11.055	0.000**
Weighted Voluntary Disclosure Index for Historical Information	2.13	2.18	2.61	0.238	0.789
Weighted Voluntary Disclosure Index for Key Information	5.18	5.36	5.36	0.017	0.983
Weighted Voluntary Disclosure Index for Projected Information	13.17	12.88	12.25	0.084	0.920
Weighted Voluntary Disclosure Index for Management Discussion and Analysis	0.70	0.86	0.47	0.791	0.455
VDISCPROP	26.38	30.85	33.22	1.409	0.247

** Significant at the 0.01 level

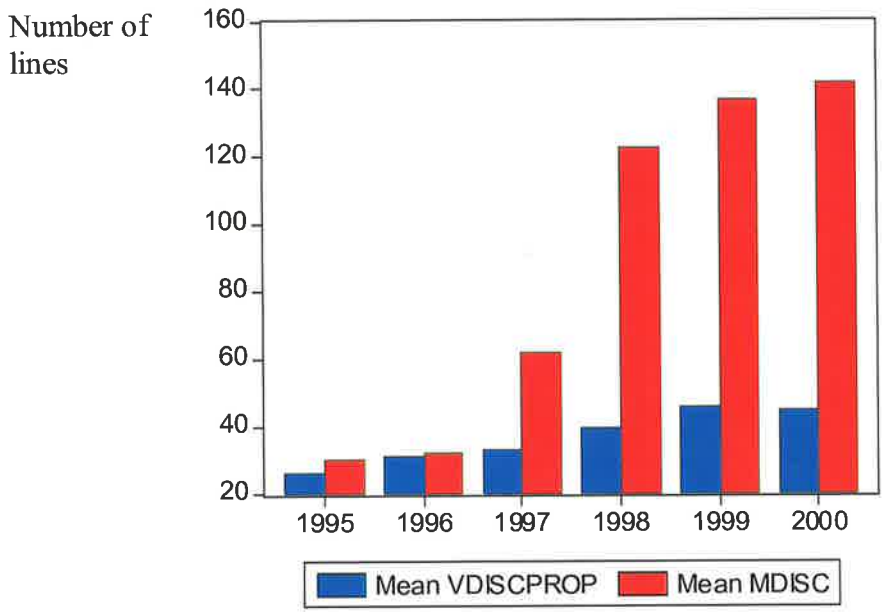
Table 17 indicates that there is a significant increase in the Weighted Voluntary Disclosure Index for Risk Management. However, no other categories, including VDISCPROP, show a significant increase in disclosure during the pre-regulation years leading up to the introduction of the accounting standard in 1998. Thus, the increase in voluntary disclosure of related proprietary information due to the introduction of mandatory disclosure relates closely with the type of information. Information such as risk management strategies and policies, which is perceived by management to be directly related to the disclosure of financial instruments, increases during the anticipated years before the introduction of the accounting standard on financial instruments disclosure. Thus, H2 is accepted for information that is closely related to the proposed standard.

Figure 6 depicts the relationship between the mean VDISCPROP, MDISC for the unregulated period (years 1995–1997), and MDISC for the regulated period (years 1998–2000). It is visually evident in Figure 6 that mean MDISC has grown over the 3 years in which AASB 1033 has been anticipated, especially in 1997 (one year prior to regulation), and again it has grown at a much higher level over the 3 years in which

AASB 1033 has been in operation. The mean VDISCPROP has also increased over the 6 years.

Figure 6

Graph of the Relationship between VDISCPROP and MDISC



H3 predicts that an increase in both the likelihood of, and actual introduction of, a standard on disclosure of financial instruments will increase the voluntary disclosure of additional information directly associated with mandatory disclosure items contained in the standard. To test H3, a comparison is made between the means for the mandatory disclosure items during the pre-regulation years (voluntary disclosures) and the means for the mandatory disclosure items for the post-regulation years (testing for comprehensiveness of mandatory disclosures). To compare the means, a one-way ANOVA is carried out and an F-test computed. The results of this analysis are shown in Table 18 and Table 19.

Table 18

Mandatory Disclosure Items: Comparison of Means for Pre-Regulation Years

Disclosure Items	1995	1996	1997	F-value	Sig
	Number of lines of disclosure				
Disclosure and discussion of the extent and nature of financial derivatives used	10.66	10.84	18.19	2.577	0.079
Disclosure of accounting policies and methods adopted for financial derivatives	3.25	3.67	4.70	2.223	0.111
Discussion of firm's exposure to interest rate risk	3.06	4.00	10.63	8.359	0.000**
Discussion of firm's exposure to credit risk	2.01	2.06	4.90	11.551	0.000**
Discussion of firm's exposure to commodity price risk and the hedging instruments used to mitigate risk	5.42	5.45	8.32	0.585	0.559
Disclosure of the aggregate net fair value of financial assets & financial liabilities & the methods adopted in determining net fair value	3.40	3.64	9.96	6.902	0.001**
Objectives for holding or issuing derivatives	5.46	5.60	6.59	0.489	0.614
MDISC	30.06	31.99	61.99	8.535	0.000**

** Significant at the 0.01 level

Table 19

Mandatory Disclosure Items: Comparison of Means for Post-Regulation Years

Disclosure Items	1998	1999	2000	F-value	Sig
	Number of lines of disclosure				
Disclosure and discussion of the extent and nature of financial derivatives used	28.79	32.57	34.56	0.590	0.556
Disclosure of accounting policies and methods adopted for financial derivatives	6.89	7.40	8.11	0.554	0.575
Discussion of firm's exposure to interest rate risk	29.20	36.10	39.53	6.354	0.002**
Discussion of firm's exposure to credit risk	9.91	9.84	10.06	0.024	0.977
Discussion of firm's exposure to commodity price risk and the hedging instruments used to mitigate risk	14.74	17.81	13.84	0.128	0.880
Disclosure of the aggregate net fair value of financial assets & financial liabilities & the methods adopted in determining net fair value	21.06	21.77	21.31	0.032	0.969
Objectives for holding or issuing derivatives	9.56	10.00	10.17	0.077	0.926
MDISC	122.56	136.80	141.85	1.189	0.307

** Significant at the 0.01 level

Table 18 indicates that there is a significant increase in the means of MDISC during the pre-regulation years. In fact 3 of the 7 proposed mandatory disclosure items show significant difference in means during the pre-regulation years. This indicates that the likelihood of an introduction of a standard on disclosure of financial instruments increases the voluntary disclosure of additional information associated with the mandatory disclosure items contained in the standard. However, results from Table 19 indicate no significant increase in the means for MDISC for the post-regulation years. Only the item *discussion of firm's exposure to interest rate risk* indicates significant increase in the means during the post-regulation years. Therefore, even though there is a significant increase in the disclosure relating to the proposed mandatory disclosure items in the anticipated regulatory environment, once the proposed mandatory items became mandatory in the regulated environment there is no significant difference in disclosure in the three years after regulation, except for the item *discussion of firm's exposure to interest rate risk.* Thus, H3 is partially accepted i.e. an increase in the likelihood of an introduction of a standard on disclosure of financial instruments increases the voluntary disclosure of additional information associated with mandatory disclosure items contained in the standard.

5.5.1.2 Effects of Proprietary Costs – Tests of H4, H5 and H6

H4 predicts that the higher the investment growth opportunities of a firm, the lower will be the firm's voluntary disclosure of proprietary information relevant to financial instruments. To test this hypothesis, a bi-variate correlation analysis between VDISCPROP and investment growth opportunities, as measured by GROWTH, is undertaken. Table 20 presents the relationship between the two variables. The existence of a significant relationship between the two variables can be gauged from the Pearson's correlation coefficient. The correlation coefficient will give an indication of both the strength and the direction of the linear relationship between the two variables. Results indicate that there is a significant negative relationship between investment growth opportunities and the voluntary disclosure of proprietary information relevant to financial instruments. Thus, H4 is fully accepted. This is consistent with previous findings (Bamber & Cheon, 1998; Harris, 1998). It confirms the fact that firms with higher investment growth opportunities will have more to lose to competitors if they disclose more information relating to their financial instruments (for example, undrawn

borrowing facilities, unrecognised gains or losses on hedging, forecasts of future sales on contracts, sensitivity of revenues and expenses to possible market changes).

Table 20

Correlations Analysis between GROWTH and VDISCPROP

		GROWTH
VDISCPROP	Pearson Correlation	-0.115*
	Sig. (1-tailed)	0.011
	N	403

* Correlation is significant at the 0.05 level (1-tailed).

H5 adds a moderating variable, company size, to the relationship in H4. H5 predicts that the smaller the company size, the greater will be the inverse relationship between investment growth opportunities and the extent of voluntary disclosure of proprietary information relevant to financial instruments. Thus, to test for H5, a partial correlation analysis is carried out to explore the relationship between GROWTH and VDISCPROP while controlling SIZE (Table 21). When SIZE is controlled, there is a higher correlation coefficient for the relationship between GROWTH and VDISCPROP, indicating that size of growth firms is significant in influencing management's decision to voluntarily disclose proprietary information.

Table 21

Correlations Analysis between GROWTH and VDISCPROP while Controlling for SIZE

Control Variables			GROWTH
SIZE	VDISCPROP	Correlation	-0.221**
		Significance (1-tailed)	.000
		df	400

** Correlation is significant at the 0.01 level (1-tailed).

In order to further test the effect of size of growth firms on the voluntary disclosure of proprietary information, sample companies are divided into big growth firms and small growth firms. Analysis of log market capitalisation of the sample firms indicates a median of $5.728 million. Thus, companies with log market capitalisation greater or equal to $5.728 million are categorized as big growth firms, while companies with a log market capitalisation of less than $5.728 million are categorized as small growth firms.

Table 22 present the results of the bi-variate correlation analysis between VDISCPROP and GROWTH for small and big growth firms. The results indicate that when SIZE is divided into small and big growth firms, there is a significant inverse relationship between VDISCPROP and GROWTH for small growth firms. Thus, H5 is fully accepted. Smaller growth companies are more reluctant to voluntarily disclose proprietary information for fear that the disclosure of such information will reduce the value of their investment growth opportunities since they will have less capacity than large companies to protect their markets from other entrants.

Table 22

Correlations Analysis between VDISCPROP and GROWTH for Small and Big Firms

		Small Firms	Big Firms
		GROWTH	
VDISCPROP	Pearson Correlation	-0.275**	-0.066
	Sig. (1-tailed)	.000	0.176
	N	201	202

** Correlation is significant at the 0.01 level (1-tailed).

Another proprietary cost-based effect on voluntary corporate disclosure decisions is the ability of a firm to cushion itself from competitors' actions through the adoption of hedging strategies. To test H6 which predicts that the higher the level of a company's corporate hedging, the higher will be its voluntary disclosure of proprietary information relevant to financial instruments, a bi-variate correlation analysis between HEDGE and VDISCPROP is undertaken for the pre and post-regulation years. However, for the pre-regulation years, the data for HEDGE is limited to companies that voluntarily disclose the notional values of their derivatives hedging. Companies that used derivatives to hedge in the pre-regulation years, but did not disclose the notional values, are omitted from the analysis.

Table 23 presents the results of the correlation analysis for the pre-regulation period while Table 24 presents the results for the post-regulation period. The results indicate that for both the pre- and post-regulation periods there is no significant correlation between corporate hedging strategies as measured by the level of corporate hedging and the voluntary disclosure of proprietary information related to financial instruments. This is consistent with the findings by Aggarwal & Simkins (2004) who did not find

evidence of a relationship between derivative usage and the voluntary disclosure of derivatives information.

Table 23

Correlations Analysis between HEDGE and the VDISCPROP for the Pre-Regulation Period

		HEDGE
VDISCPROP	Pearson Correlation	0.029
	Sig. (1-tailed)	0.382
	N	106

Table 24

Correlations Analysis between HEDGE and the VDISCPROP for the Post-Regulation Period

		HEDGE
VDISCPROP	Pearson Correlation	0.096
	Sig. (1-tailed)	0.105
	N	171

A further analysis is carried out to investigate this relationship for the post-regulation period since in the post-regulation period companies that hedge are required to disclose the notional values of their derivatives hedging. Sample firms in the post-regulation periods are segregated into firms that hedge and firms that do not hedge. An independent sample t-test is then used to compare the overall mean score for VDISCPROP for the two groups. Table 25 presents the overall mean score for VDISCPROP for the two groups and the results of the t-test. Table 26 presents the mean score of VDISCPROP for the two groups and the results of the t-test by industry.

Table 25

Corporate Hedging Strategies: Comparison of Means for the Post-Regulation Years

Corporate Hedging Strategies	N	Overall Mean VDISCPROP	t	Sig (2-tailed)
Firms that do not hedge	39	42.74		
Firms that hedge	171	43.49	0.120	0.905

Table 26

Corporate Hedging Strategies: Comparison of Means for the Post-Regulation Years by Industry

Industry	Firms that do not Hedge	Firms that Hedge	t	Sig (1-tailed)
	Means VDISCPROP			
Energy	39.40	63.08	1.757	0.045*
Materials	21.40	42.65	6.033	0.000**
Industrials	27.74	34.74	1.254	0.214
Consumer Staples	22.45	32.70	1.715	0.046*

** Significant at the 0.01 level
* Significant at the 0.05 level

The overall mean score (Table 25) shows that there is no significant difference in the means for VDISCPROP for firms that hedge and for firms that do not hedge, indicating that hedging does not have an influence on management's decision to voluntarily disclose related proprietary information relating to financial instruments. However, analysis by industry group indicates that there is a significant difference in the means for *Materials, Energy and Consumer Staples* indicating that for these industries hedging has a significant influence on management's disclosure decisions. While *Industrials* reveals no relationship between the level of VDISCPROP for firms that do and do not hedge, an explanation could be that for this industry, firms that do hedge have not considered this practice to be a sufficient component of their risk management to affect their voluntary disclosure decisions.

Thus, even though the overall results given in Table 25 indicate that the level of a company's corporate hedging has no influence on the voluntary disclosure of proprietary information relevant to financial instruments, analysis by industry groups in Table 26 suggests that for most industries corporate hedging strategies do influence management's voluntary disclosure decisions. Thus, the results of the univariate analysis are mixed as to whether H6 is to be accepted or rejected. This hypothesis is further tested in the multivariate analysis section of this chapter.

5.5.1.3 Effects of Political Costs – Tests of H7, H8 and H9a

H7 predicts that the higher the probability that a company is in financial distress, the greater will be its voluntary disclosure of information relevant to financial instruments. To test this relationship, the sample firms are divided into firms having a higher probability of being financially distressed (having more than 50% probability of failure i.e. having a negative Z-score) and firms having a lower probability of being financially distressed (having less than 50% probability of failure, positive Z-score). A bi-variate correlation analysis between DISTRESS and VDISC is performed for the two groups. Results indicate that there is no significant correlation between DISTRESS and VDISC for both groups (companies with negative Z-score, Pearson correlation of 0.125; companies with positive Z-score, Pearson correlation of 0.019). An independent sample t-test is then performed to compare the mean score of VDISC for the two groups in the pre- and post- regulation period. Table 27 presents the results of the t-test.

Table 27
Probability of Financial Distress: Comparison of Means for the Pre- and Post-Regulation Period

	Firms with negative Z-score	Firms with positive Z-score	t	Sig (1-tailed)
	Means VDISC			
Pre period	(N =38) 35.37	(N= 159) 28.50	-1.540	0.0625
Post period	(N=42) 48.34	(N=158) 40.08	-1.415	0.0795

The overall mean score shows that there is no significant difference in the means of VDISC for firms having a higher probability of being classified as distressed to those firms having a lower probability of being classified as distressed in both the pre- and post-regulation period. However, a p-value of 0.0625 in the pre-period and 0.0795 in the post-period suggest that there is weak evidence that there is a difference between the two groups in the amount of voluntary disclosure of information being made. However, H7 is rejected. Evidence of higher VDISC as a means of mitigating the political costs arising from demands and actions of creditors and other stakeholders when there is heightened likelihood of financial distress is not sufficiently strong in this univariate analysis.

To test for H8 which predicts that the larger the company's size (and by inference its political exposure), the greater will be its voluntary disclosure of information relevant to financial instruments, the size of the sample companies is divided into big and small, and a bi-variate correlation analysis between SIZE and VDISC is performed for the two groups. An independent sample t-test is then performed to compare the mean score of VDISC for the two groups in the pre- and post-regulation period. Table 28 presents the results of the correlation analysis while Table 29 presents the results of the t-test.

Table 28
Correlations Analysis between VDISC and Size of Firms

		Small Firms	Big Firms
		SIZE	
VDISC	Pearson Correlation	-0.05	0.511**
	Sig. (1-tailed)	0.241	0.000
	N	202	202

** Correlation is significant at the 0.01 level (1-tailed).

Bi-variate correlation analysis between VDISC and SIZE confirm that there is a significant positive correlation between big firms and the amount of voluntary disclosure of information relating to financial instruments.

Table 29
Size of Firms: Comparison of Means for the Pre- and Post-Regulation Period

	Small Firms	Big Firms	t	Sig (2-tailed)
	Means VDISC			
Pre period	(N =101) 20.52	(N=100) 38.65	-5.583	0.000**
Post period	(N=101) 30.82	(N=102) 52.48	-4.859	0.000**

** Significant at the 0.01 level (2-tailed).

Results of the t-test indicate that there is a significant difference in the means of VDISC for big and small firms in both the pre- and post-period. Therefore, H8 is accepted.

H9a predicts that the increased level of unfavourable print media coverage about corporate use of financial instruments following the collapse of Barings Bank will cause a greater degree of companies' voluntary disclosure of information relevant to financial instruments. The argument is that media agenda-setting can create a heightened political

sensitivity amongst stakeholders generally, which is counteracted by firms providing greater voluntary disclosure about their relevant policies and practices for financial instruments. Since there was extensive media attention relating to the use of financial instruments in 1995 and 1996 due to the incident in 1995, a bi-variate correlation analysis between VDISC and MEDIA is performed for the pre-regulation period. Table 30 presents the results of the correlation analysis. There is a significant correlation between the voluntary disclosure of information relating to financial instruments and the number of media articles appearing in Australian newspapers in the pre-regulation period. However, the relationship is significantly negative, which is not in the predicted direction. A possible explanation for this unexpected result is the presence of a confounding variable. Such a confounding variable would be the fact that during the pre-regulation period of 1995-1997 there was much debate and detailed releases of professional accounting documents on financial instruments i.e., ED 65 in 1995 and AASB 1033 pre-effective release in 1996. That is, anticipation of regulation increased between 1995-1997, whereas media attention about scandals decreased in the same 3-year period. This effect of the anticipated mandatory disclosure requirements on the relationship between VDISC and MEDIA will be tested during the multivariate analysis (H9b).

Table 30

Correlations Analysis between VDISC and MEDIA in the Pre-Regulation Period

		MEDIA
VDISC	Pearson Correlation	-0.121*
	Sig. (1-tailed)	0.04
	N	210

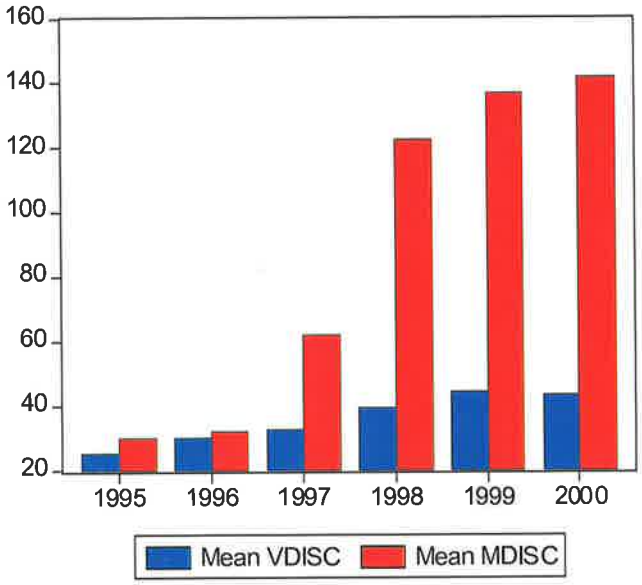
* Correlation is significant at the 0.05 level (1-tailed).

Figure 7 presents the graphical relationship between VDISC, MDISC and MEDIA from 1995-2000. An inverse relationship between disclosure and media attention is visually evident by comparing the trends of these two diagrams.

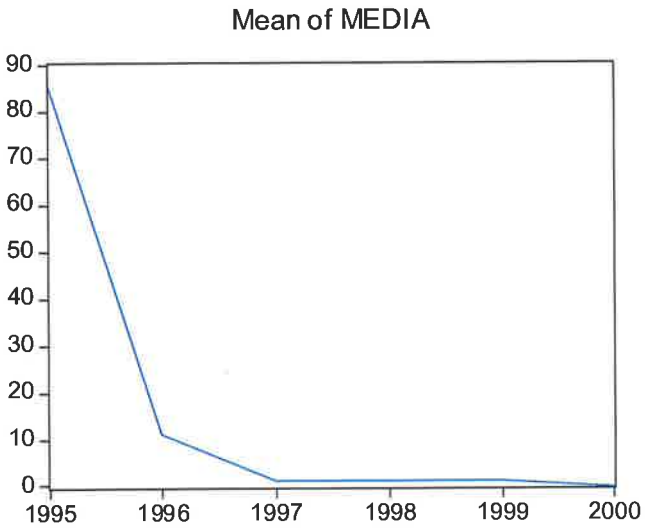
Figure 7

Graph of the Relationship between VDISC, MDISC and MEDIA from 1995-2000

Number of lines



Number of media articles in Australian newspapers



5.5.2 Multivariate Tests

5.5.2.1 Choice of Multivariate Model

In order to allow for the simultaneous testing of the independent variables, hypotheses relating to the effects of proprietary and political costs on the extent of voluntary disclosure of proprietary information relevant to financial instruments for the period before and after the introduction of the mandatory disclosure requirements are tested using multiple regression analysis. Multiple regression analysis enables the direction and extent of the relationships between the dependent and various independent variables to be determined. It enables a determination of each independent variable's relative importance in the explanation of the dependent variable.

Since the data in this study is extracted for 70 companies across 6 years resulting in a total of 420 observations, the data set contains both cross-sectional and a time series dimension. Furthermore, since the observation for the 6-year period is carried out on the same 70 companies, the data set is therefore a panel data set. Among the advantages of using panel data as suggested by Hsiao (1985; 1986), Klevmarken (1989) and Solon (1989) is the ability to control for individual heterogeneneity. Panel data are also better able to study the dynamics of adjustments and the effects of policy changes. For example in this study, in measuring voluntary corporate disclosure, cross-sectional data can estimate what proportion of the population voluntarily discloses information at a point in time. However, repeated cross-sections can show how this proportion changes over time. With panel data an estimate can be made of what proportion of those who voluntarily disclose in one period continue to disclose in another period due to the introduction of mandatory disclosure requirements. Thus, panel data are better able to identify and measure effects that are not detectable in pure cross-section or pure time-series data.

Panel data suggest that individuals, firms, states or countries are heterogenous. Thus, time series and cross-section studies that do not control for this heterogeneity run the risk of obtaining biased results. For example in this study, the voluntary disclosure of information relating to financial instruments is modelled as a function of mandatory disclosure, proprietary costs, and political costs. These variables vary with companies and time. In addition to these variables, there are other unobserved or omitted variables that may be correlated or uncorrelated with the observed independent variables that may

affect the voluntary disclosure of information relating to financial instruments. These unobserved variables might take two forms. They may differ between cases but are constant over time (time-invariant or cross-sectional effects) or they may vary over time but are constant between cases (time-variant or period effects). Some of these unobserved variables may be difficult to measure or difficult to obtain, thus not all of these variables can be included in the analysis of panel data.

In this study, in addition to the observed independent variables, it is expected that there are also other unobserved or omitted variables that affect the companies' heterogeneity, that are correlated with the observed independent variables, and may thus affect the dependent variable. For example, the different risk aversion levels of management may be correlated with companies' hedging strategies and affect management's voluntary disclosure decisions. The entrance of rivals, the extent of intellectual capital, or the extent of management expertise, for example, are unobserved elements of company heterogeneity which may be correlated with company's investment growth opportunities and size of company. They may affect management's voluntary disclosure of information relating to financial instruments. Thus, the omission of these variables from the model will lead to biases in the resulting estimates unless panel data analysis is used to control for these unobserved effects.

In circumstances where there is neither significant cross-sectional nor significant time period effects, panel data can be pooled and an ordinary least squares regression can be used. In such cases the panel model has constant coefficients (both for intercept and slope) and is called the pooled regression model. Although cross sectional and period effects are mostly present in panel data, there may be situations when neither of these effects is statistically significant. In such situations it is possible to use the ordinary least squares regression. Thus, even though it is possible to use the ordinary least squares multiple regression techniques on panel data, the results generated from such regression analysis may not be optimal, as the results may be potentially biased if there are omitted variables that are not controlled for, and are correlated with the independent variables and, in turn, affect the dependent variable. The estimates of coefficients derived from such regression analysis may be subject to omitted variable bias or heterogeneity bias. This is because the ordinary least squares multiple regression techniques do not control for potential heterogeneity and endogeneity biases in panel data.

In this study, in order to control for potential heterogeneity and endogeneity biases due to the presence of omitted variables that affect the voluntary disclosure of information relating to financial instruments, the following econometric model is used in analysing the panel data. Letting $_i$ denote the cross-sectional unit and $_t$ time period, the econometric model is specified as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{it1} + \beta_2 X_{it2} + \beta_3 X_{it3} + \ldots + \beta_k X_{itk} + a_i + e_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

where Y_{it} is the dependent variable for company $_i$ at time $_t$; β_0 is a constant; $\beta_1 X_{it1}$, $\beta_2 X_{it2}$, $\beta_3 X_{it3}$, ... $\beta_k X_{itk}$ are the observed independent variables for company $_i$ at time $_t$; the variable a_i captures all unobserved, time-invariant factors that affect Y_{it} and the error e_{it} is the idiosyncratic error or time-varying error because it represents unobserved factors that change over time and affect Y_{it}.

Two commonly used panel models for controlling the unobserved effects are the fixed effects model or the random effects model. According to Wooldridge (1999) the fixed effects model is suitable in analysing panel data when the unobserved effect is correlated with the independent variables, while the random effects model is more attractive when the unobserved effect is uncorrelated with all the explanatory variables. By using panel models it is possible to control for the cross sectional and period effects, even without observing them, by observing the changes in the dependent variable over time. The fixed effects model controls the cross-sectional effects a_i by effectively removing these effects from the regression model. The model uses the changes in the variables over time to estimate the effects of the independent variables on the dependent variable. However, the major disadvantage of the fixed effect model is that it also removes all time-invariant variables such as industry, sex, and race from the regression. Therefore, the coefficients of these time-invariant variables cannot be estimated during the regression analysis.

The random effects model, on the other hand, assumes that the unobserved effects are uncorrelated with each of the independent variables. The random effects model specifies that a firm's intercept consists of the population's mean intercept and some random disturbance term. The result is that the regression disturbance term consists of two components: one associated with the cross-sectional unit, and the other the typical

ordinary least square disturbance term. Its effect is to treat each firm as if it were an observation from a larger population (Griffiths et al., 1993).

5.5.2.2 Regression Application to Panel Data in this Study

In this study, the significant time variant variables that affect all companies and changes between time period, which is the change in accounting standard relating to financial instruments disclosure and the effect of negative media attention, are observed variables. All other unobserved variables that are time variant are assumed to be statistically insignificant and are not correlated with the independent variables of interest and will be captured by the idiosyncratic error or time-varying error e_{it}. Thus, the multiple regression analysis in this study will control for omitted variable bias due to cross-sectional effects by removing a_i from the regression model.

Separate regression analysis is initially undertaken in this study to test for the separate effects of proprietary and political costs on the voluntary disclosure of information relating to financial instruments in the period before and after the introduction of the mandatory disclosure requirements. Then, in order to test the combined influence of mandatory disclosure requirements, the impact of proprietary and the impact of political costs on management's voluntary corporate disclosure relating to financial instruments in a regulated and unregulated environment, a multiple regression analysis combining the three perspectives will be undertaken.

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 is 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) are 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. This will allow the intercept to differ across the pre- and post-period to take into consideration that the population may have different distributions in the different time periods. 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. By using multiplicative (time) dummies, the slope term of the independent variables will vary over time allowing determination of whether the effects of the independent variables have changed over time.

Taking these factors into consideration, the model underlying the regression analysis for the effects of proprietary and political costs in a regulated and unregulated environment in this study is specified in the following equations:

Effects of Proprietary Costs

$$VDISCPROP_{it} = \beta_0 + \delta_0 y19982000 + \beta_1 MDISC_{it} + \delta_1 y19982000.MDISC_{it} + \beta_2 HEDGE_{it} + \delta_2 y19982000.HEDGE_{it} + \beta_3 GROWTH_{it} + \delta_3 y19982000.GROWTH_{it} + \beta 4\,(GROWTH\ X\ SIZE)_{it} + \delta_4 y19982000.\,(GROWTH\ X\ SIZE)_{it} + \beta_5 OWNER_{it} + \delta_5 19982000.OWNER_{it} + \beta_6 INDUST_i + \delta_6 19982000.INDUST_i + a_i + e_{it} \quad \ldots\ldots\ldots\ldots (5)$$

where:

$VDISCPROP_{it}$ is the proprietariness weighted voluntary disclosure index relating to financial instruments of firms from 1995 to 2000

β_0 is the intercept for the base period (pre-regulation period)

$\beta_0 + \delta_0$ is the intercept for the post-regulation period.

$MDISC_{it}$ is the mandatory disclosure index relating to mandatory disclosure of information for sample firms from 1995 to 2000. Therefore, the mandatory disclosure index relating to the proposed mandatory disclosure of information in the pre-period is β_1, and the mandatory disclosure index relating to mandatory disclosure of information in the post-period is $\beta_1 + \delta_1$. Thus, δ_1 measures how the voluntary disclosure of proprietary information relating to financial instruments has changed from

the pre-regulation years to the post-regulation years due to the effect of mandatory disclosure items.

$HEDGE_{it}$ is the level of firms' hedging from 1995 to 2000; β_2 measures the level of firms' hedging in the pre-period while $\beta_2 + \delta_2$ measures the level of firms' hedging in the post period; δ_2 measures how the voluntary disclosure of proprietary information relating to financial instruments has changed from the pre- to the post-regulation period as a result of firms' hedging strategies.

$GROWTH_{it}$ is the firms' investment growth opportunities from 1995 to 2000; β_3 measures the effect of firms' investment growth opportunities in the pre-period; $\beta_3 + \delta_3$ measures the effect of firms' investment growth opportunities in the post period; δ_3 measures how the voluntary disclosure of proprietary information relating to financial instruments has changed from the pre- to the post-regulation period for firms with investment growth opportunities.

$(GROWTH \times SIZE)_{it}$ measures the moderating effect of size of firms on investment growth opportunities from 1995 to 2000; β_4 measures the moderating effect of size of firms on investment growth opportunities in the pre-regulation period; $\beta_4 + \delta_4$ measures the moderating effect of size of firms on investment growth opportunities in the post-regulation period; δ_4 measures how the voluntary disclosure of proprietary information relating to financial instruments has changed from the pre- to the post-regulation period, taking into consideration the effect of size of growth firms.

$OWNER_{it}$ is the percentage of shares held by the top 20 shareholders of the firms from 1995 to 2000; β_5 measures the percentage of shares held by the top 20 shareholders of the firms in the pre-regulation period; $\beta_5 + \delta_5$ measures the percentage of shares held by the top 20 shareholders of the firms in the post-regulation period; δ_5 measures how the voluntary disclosure of proprietary information relating to financial instruments has

changed from the pre- to the post-regulation period due to ownership structure.

$INDUST_i$ is the industry of the sample firms in 1995 to 2000 (dummy variable). There is no $_t$ subscript for INDUST as the variable industry is time invariant, i.e. companies belong to the same industry during the period of study. β_6 measures the effect of industry in the pre-period; $\beta_6 + \delta_6$ measures the effect of industry in the post-period; δ_6 measures how the voluntary disclosure of proprietary information relating to financial instruments has changed from the pre- to the post-regulation period for different industries.

a_i represents the unobserved time-invariant effect and

e_{it} is the idiosyncratic error or time-varying error.

Effects of Political Costs

$$VDISC_{it} = \beta_0 + \delta_0 y19982000 + \beta_1 MDISC_{it} + \delta_1 y19982000.MDISC_{it} + \beta_2 SIZE_{it} + \delta_2 y19982000.SIZE_{it} + \beta_3 DISTRESS_{it} + \delta_3 y19982000.DISTRESS_{it} + \beta_4 MEDIA_t + \beta_5 (MEDIA_t \times MDISC_{it}) + \beta_6 OWNER_{it} + \delta_6 19982000.OWNER_{it} + \beta_7 INDUST_i + \delta_7 19982000.INDUST_i + a_i + e_{it} \quad ..(6)$$

where:

$VDISC_{it}$ is the voluntary disclosure index relating to financial instruments of firms from 1995 to 2000.

β_0, $\beta_0 + \delta_0$ and $MDISC_{it}$ have been previously defined.

$SIZE_{it}$ is the size of firms from 1995 to 2000. Therefore, the effect of size of the firms in the pre-period is β_2 and the effect of size of the firms in the post-period is $\beta_2 + \delta_2$. Thus, δ_2 measures how the voluntary disclosure of information relating to financial instruments has changed from the pre-regulation years to the post-regulation years due to the effect of size of companies.

$DISTRESS_{it}$ is the probability of the firms facing financial distress from 1995 to 2000; β_3 measures the probability of firms facing financial distress in the pre-period, while $\beta_3 + \delta_3$ measures the probability of firms facing financial distress in the post period; δ_3 measures how the voluntary disclosure of information relating to financial instruments has changed from the pre- to the post-regulation period as a result of firms' probability of facing financial distress.

$MEDIA_t$ is the negative media attention relating to financial instruments from 1995 to 2000; There is no $_i$ subscript for MEDIA as the negative media attention relating to the use of financial instruments varies over time but is constant amongst companies as the newspaper articles relate to negative media articles in general and not those specific to any particular company; β_4 measures the effect of negative media attention relating to financial instruments in the pre-period.

($MEDIA_t$ X $MDISC_{it}$) measures the moderating effect of mandatory disclosure items on negative media attention from 1995 to 2000; β_5 measures the moderating effect of the proposed mandatory disclosure items on negative media attention in the pre-regulation period.

$OWNER_{it}$, $INDUST_i$, a_i and e_{it} have been defined previously.

For the variables $MEDIA_t$ and ($MEDIA_t$ X $MDISC_{it}$) the investigation is only for the base period since hypotheses H9a and H9b are testing the effects of negative media attention and the confounding effects of anticipated regulation on the relationship between voluntary disclosure and negative media attention in the pre-regulation period where there was extensive negative media coverage on financial instruments disclosure due to the collapse of Barings Bank in 1995.

5.5.2.3 Multicollinearity Tests

Before undertaking the multiple regression analysis, a test for the presence of multicollinearity amongst the independent variables is performed. When there are several independent variables in a regression equation, a test for the presence of multicollinearity needs to be applied. High multicollinearity amongst the variables can

have the effect of substantially distorting the results or making them unstable. Table 31 contains the correlation matrix of the independent variables for testing the effects of proprietary costs while Table 32 contains the correlation matrix of the independent variables for testing the effects of political costs. An examination of Table 31 and Table 32 indicates that multicollinearity is present. However, the bi-variate correlations amongst the independent variables are less than 0.7, except for the correlation between GROWTH and (GROWTH X SIZE) in Table 31 which has a correlation of 0.944. Tabachnick & Fidell (2001) suggest that careful consideration should be given before including two variables in the same analysis when their correlation is 0.7 or more. GROWTH and (GROWTH X SIZE) are highly correlated because in testing the moderating effect of firms' size on investment growth opportunities, (GROWTH X SIZE) is computed by taking SIZE multiplied by GROWTH.

Table 31
Correlation Matrix of the Independent Variables (Effects of Proprietary Costs) - 1

		MDISC	HEDGE	GROWTH	GROWTH X SIZE	OWNER	INDUST
MDISC	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	420					
HEDGE	Pearson Correlation	.336**	1				
	Sig. (2-tailed)	.000					
	N	277	277				
GROWTH	Pearson Correlation	-.054	.007	1			
	Sig. (2-tailed)	.279	.914				
	N	403	265	403			
GROWTH X SIZE	Pearson Correlation	-.038	.004	.944**	1		
	Sig. (2-tailed)	.446	.944	.000			
	N	403	265	403	403		
OWNER	Pearson Correlation	-.063	.259**	.111*	.146**	1	
	Sig. (2-tailed)	.195	.000	.026	.003		
	N	419	277	402	402	419	
INDUST	Pearson Correlation	-.055	-.192**	-.060	-.081	-.233**	1
	Sig. (2-tailed)	.257	.001	.230	.103	.000	
	N	420	277	403	403	419	420

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 32
Correlation Matrix of the Independent Variables (Effects of Political Costs)

		MDISC	SIZE	DISTRESS	MEDIA	OWNER	INDUST
MDISC	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	420					
SIZE	Pearson Correlation	.289**	1				
	Sig. (2-tailed)	.000					
	N	404	404				
DISTRESS	Pearson Correlation	-.022	.034	1			
	Sig. (2-tailed)	.655	.498				
	N	397	397	397			
MEDIA	Pearson Correlation	-.365**	-.049	-.037	1		
	Sig. (2-tailed)	.000	.329	.467			
	N	420	404	397	420		
OWNER	Pearson Correlation	-.063	-.187**	-.010	.036	1	
	Sig. (2-tailed)	.195	.000	.838	.464		
	N	419	403	396	419	419	
INDUST	Pearson Correlation	-.055	.111*	-.085	.000	-.233**	1
	Sig. (2-tailed)	.257	.025	.091	1.000	.000	
	N	420	404	397	420	419	420

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

A collinearity diagnostic test is subsequently performed on all the independent variables as an additional test for the presence of multicollinearity, which may not be evident in the correlation matrix. The results are presented in Tables 33 and 34, as tests for the presence of multicollinearity amongst the independent variables in the proprietary-costs model and political-costs model respectively.

Table 33
Collinearity Diagnostic Test
(Independent Variables for the Effects of Proprietary Costs) - 1

Independent variables	Collinearity Statistics	
	Tolerance	VIF
MDISC	0.847	1.181
HEDGE	0.796	1.256
GROWTH	0.100	9.976
GROWTH X SIZE	0.100	10.034
OWNER	0.820	1.220
INDUST	0.826	1.211

Table 34

Collinearity Diagnostic Test
(Independent Variables for the Effects of Political Costs)

Independent variables	Collinearity Statistics	
	Tolerance	VIF
MDISC	0.781	1.280
SIZE	0.872	1.147
DISTRESS	0.985	1.015
MEDIA	0.857	1.167
OWNER	0.890	1.123
INDUST	0.903	1.108

Two statistics are given in Table 33 and Table 34: Tolerance and VIF. Tolerance is an indicator of how much of the variability of the specified independent variable is not explained by the other independent variables, and is calculated using the formula $1\text{-}R^2$ for each variable. A small value (normally less than 0.10) will indicate that the multiple correlations between the other variables is high, thus indicating the presence of high multicollinearity. The VIF (Variation inflation factor) is the inverse of the Tolerance value. High VIF values (normally above 10) suggest high multicollinearity. Thus, the collinearity diagnostic tests confirm the presence of high multicollinearity between the variable GROWTH (Tolerance 0.100; VIF 9.976) and (GROWTH X SIZE) (Tolerance 0.100; VIF 10.034). Therefore, in order to avoid substantially distorting the results of the multiple regression analysis or making them unstable, the variable (GROWTH X SIZE) is excluded from the multiple regression analysis. Furthermore, the moderating effect of size on investment growth opportunities (H5) has been tested and confirmed in the univariate test.

Table 35 and Table 36 indicate the correlation matrix and the results of the collinearity diagnostic test for the independent variables to test for the effects of proprietary costs without the variable (GROWTH X SIZE). The results indicate that there is no longer the presence of high multicollinearity amongst the independent variables.

Table 35

Correlation Matrix of the Independent Variables (Effects of Proprietary Costs) - 2

		MDISC	HEDGE	GROWTH	OWNER	INDUST
MDISC	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	420				
HEDGE	Pearson Correlation	.336**	1			
	Sig. (2-tailed)	.000				
	N	277	277			
GROWTH	Pearson Correlation	-.054	.007	1		
	Sig. (2-tailed)	.279	.914			
	N	403	265	403		
OWNER	Pearson Correlation	-.063	.259**	.111*	1	
	Sig. (2-tailed)	.195	.000	.026		
	N	419	277	402	419	
INDUST	Pearson Correlation	-.055	-.192**	-.060	-.233**	1
	Sig. (2-tailed)	.257	.001	.230	.000	
	N	420	277	403	419	420

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 36

Collinearity Diagnostic Test
(Independent Variables for the Effects of Proprietary Costs) - 2

	Collinearity Statistics	
Independent variables	Tolerance	VIF
MDISC	0.856	1.168
HEDGE	0.796	1.256
GROWTH	0.928	1.078
OWNER	0.824	1.213
INDUST	0.826	1.210

5.5.2.4 Choice of Fixed Effects Estimator and Inclusion of Statistical Adjustments

In this study, since the unobserved cross-sectional effects variables are correlated with the independent variables of interest, the appropriate model to analyse the panel data in order to avoid omitted variable bias is the fixed effect model. To confirm this choice, the Hausman (1978) test was performed. This test is a test of H_0: that random effects will be consistent and efficient, versus H_1: that random effects will be inconsistent. In this test, a comparison was made between the random effects estimator and the fixed effects estimator. The test generates a chi-square statistic with degrees of freedom equal to the number of coefficients estimated by both models. If there is systematic difference between the two estimators, the chi-square test statistic will be greater than its critical

value, indicating that the assumption of exogeneity between the unobserved variables and all of the independent variables cannot be accepted. To implement the Hausman (1978) test, a comparison was made of the estimates from using the random effects model to those from using the fixed effects. Table 37 presents the results of the Hausman test for the multiple regression models relating to proprietary costs and political costs, respectively. For the multiple regressions on the effects of proprietary costs, the Hausman (1978) test generates a chi-square statistic of 24.686273 with 11 degrees of freedom and a p-value of 0.0101 (2-tailed). Since the p-value is significant at the 5% confidence interval, the null hypothesis is rejected, thus the fixed effects model is used in the multiple regression analysis for the effects of proprietary costs, as this is the more efficient estimator. For the Hausman (1978) test on the multiple regression model relating to political costs, the chi-square statistic is 44.017480 with 13 degrees of freedom and a p-value of 0.0000 (2-tailed). Similarly, since the p-value is significant at the 1% confidence level, the null hypothesis is rejected; therefore, the fixed effects estimator is more efficient and will also be used for the analysis.

Table 37

Results of Hausman (1978) Test for the Multiple Regression Model on the Effects of Proprietary and Political Costs

Correlated Random Effects - Hausman Test
Effects of Proprietary Costs
Equation: VDISCPROP
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	24.686273	11	0.0101

Correlated Random Effects - Hausman Test
Effects of Political Costs
Equation: VDISC
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	44.017480	13	0.0000

To control for the unobserved cross-section effects in the regression analyses, a cross-section fixed effects estimator is used.

Standard errors in regression models assume that errors are homoskedastic with the same variance across time and cases. For panel data this may be a restrictive assumption especially where the cross-sectional units are of varying sizes, and as a result may exhibit different variation suggesting the presence of heteroskedasticity (Baltagi, 1995). In order to test for the presence of heteroskedasticity in the panel data, the Lagrange Multiplier (LM) heteroskedasticity test was conducted. The LM heteroskedasticity test was undertaken for the four multiple regressions that will be presented in the results in this chapter. The p-values from these LM tests were each found to be significant, confirming the presence of heteroskedasticity in the regression analyses. The presence of heteroskedasticity however does not cause bias or inconsistency in the fixed effects estimator, but it is no longer efficient. The problem of efficiency arises because resulting standard errors and test statistics generated from the regression analyses are not valid due to heteroskedasticity. Two approaches are normally used to remedy for heteroskedasticity. If the nature of the heteroskedasticity is known, then the heteroskedasticity can be corrected using the weighted least squares estimators, or alternatively, if the heteroskedasticity is of an unknown form, robust standard errors are normally computed to correct for heteroskedasticity (Wooldridge, 1999). In this study, heteroskedasticity-robust standard errors are computed to correct for the presence of heteroskedasticity, as according to Wooldridge (1999), this is the more convenient way to remedy for heteroskedasticity regardless of the kind of heteroskedasticity present. Thus, to correct the standard errors in the regression analyses, heteroskedasticity-robust standard errors are computed so that the t and F-statistics remain valid. The standard errors in the regression analyses in this study are corrected using the White cross-section estimator of variance.

5.5.2.5 The Proprietary Costs Results – Tests of H1, H2, H4 and H6

H3, which is already tested in the univariate tests, will not be tested in the multiple regression analysis since the hypothesis is testing the voluntary disclosure of information associated with mandatory disclosure items in the pre-regulation period and the comprehensiveness of the mandatory disclosure in the post-regulation period. The dependent variable is therefore not similar to the test of H1, H2, H4 and H6.

Table 38 presents the first results of the multiple regression analysis for the effects of proprietary costs on the voluntary disclosure of proprietary information relating to financial instruments in the period before and after the introduction of the mandatory disclosure requirements. The sample size for this regression analysis is for 58 companies or 265 firm year observations. This smaller sample size is mainly due to the missing data for the measurement of hedging strategies, since for the pre-regulation period the disclosure of the notional values of derivatives holdings is not required. Thus, hedging strategies can only be measured for companies that voluntarily disclose the notional values of their derivatives holdings. The missing data for the measurement of hedging precludes some firms from the analysis.

As the four multiple regression outputs to be presented in this chapter are computer-generated outputs, (Table 38, Table 39, Table 41 and Table 43), the p-values for the multiple regression results are automatically generated for two-tailed tests. Since predictions were made regarding the directions of the effects of the independent variables on the dependent variable in the hypotheses generated in Chapter 3, the p-values for the two-tailed tests are converted to a one-tailed tests for variables MDISC, MDISCy19982000, HEDGE, HEDGEy19982000, GROWTH, GROWTHy19982000, DISTRESS, DISTRESSy19982000, SIZE, SIZEy19982000, MEDIA and (MEDIA X MDISC). If the variables have the predicted sign, the adjusted p-value for one-tailed tests is one-half of the reported p-value. If the variables are not in the predicted direction, the adjusted p-value for one-tailed tests is 1- ½ the p-value.

Furthermore, as the fixed effects model removes all time-invariant variables from the regression analysis, the effect for the control variable, industry, can only be estimated by interacting the variable with the time dummy variable y19982000. INDUSTEy19982000 measures the change in the voluntary disclosure of proprietary information relating to financial instruments for companies in the Energy Industry; INDUSTMy19982000 measures the change in the voluntary disclosure of proprietary information relating to financial instruments for companies in the Materials Industry; INDUSTIy19982000 measures the change in the voluntary disclosure of proprietary information relating to financial instruments for companies in the Industrials Industry; and INDUSTCSy19982000 measures the change in the voluntary disclosure of proprietary information relating to financial instruments for companies in the Consumer

Staples Industry. Only the changes in voluntary disclosure of proprietary information from the pre- to the post- regulation period for the four different industries can be investigated. The effect of industry for the base period cannot be estimated during the regression analysis. Even though there are four industries, only the effects of three industries can be included in the regression analysis at a time as industry is a dummy variable. This is to avoid a singular matrix.

Results of the first multiple regression analysis on the effects of proprietary costs (Table 38) indicate that the F-statistic for the model is 14.20401 and the p-value is significant and with an adjusted R-squared of 0.772781 the overall model has strong explanatory power. The Durbin-Watson statistic of 1.638524 indicates that there is no strong evidence of first-order serial correlation since as a rule of thumb, with 50 or more observations and only a few independent variables, a Durbin-Watson statistic of below 1.5 provides an indication of positive first order serial correlations (see Johnston & DiNardo, 1997).

Table 38
Fixed Effects Model: Proprietary Costs Results (1)

Dependent Variable: VDISCPROP
Method: Panel Least Squares
Sample: 1995 2000
Cross-sections included: 58
Total panel (unbalanced) observations: 265
White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob (2-tailed)	Prob (1-tailed)
C	43.83427	8.858259	4.948407	0.0000	-
MDISC	0.027772	0.031746	0.874820	0.3827	0.1914
MDISCy19982000	0.147604	0.066269	2.227337	0.0271	0.0136
HEDGE	1.363151	1.097978	1.241511	0.2159	0.1080
HEDGEy19982000	-1.802776	1.386683	-1.300064	0.1951	0.9025
GROWTH	-1.166790	3.386511	-0.344540	0.7308	0.3654
GROWTHy19982000	11.11634	3.275747	3.393527	0.0008	0.9996
OWNER	-0.189858	0.112850	-1.682399	0.0941	-
OWNERy19982000	-0.132604	0.107772	-1.230412	0.2200	-
INDUSTEy19982000	32.38964	14.04015	2.306929	0.0221	-
INDUSTMy19982000	2.465271	8.032594	0.306908	0.7592	-
INDUSTIy19982000	6.770217	7.112156	0.951922	0.3423	-

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.831307	Mean dependent var	40.08347
Adjusted R-squared	0.772781	S.D. dependent var	32.75266
S.E. of regression	15.61238	Akaike info criterion	8.553145
Sum squared resid	47774.32	Schwarz criterion	9.485226
Log likelihood	-1064.292	F-statistic	14.20401
Durbin-Watson stat	1.638524	Prob (F-statistic)	0.000000

Because of the inclusion of the HEDGE variable, which has a large block of missing data, the results in Table 38 are based on a highly reduced number of panel observations. The results to be presented in Table 39 will be based on a much more complete set of 69 sample companies or 402 panel observations because it excludes the HEDGE variable. Hence, Table 39 will provide sounder tests of hypotheses H2 and H4 than Table 38. The importance of Table 38 is to provide a multivariate test of H6 concerning the relationship between VDISCPROP and HEDGE.

HEDGE is hypothesized to have a positive influence on VDISCPROP. The result in Table 38 reveals that HEDGE has the expected sign in the base period, but it is not a significant relationship. That is, in the pre-regulation period, the extent of voluntary disclosure of proprietary information associated with financial instruments is found to be unaffected by the proprietary cost protecting influence of the use of hedging for risk control (HEDGE).

The results in Table 38 provide a different picture when the changes between pre and post-regulation periods are considered. The y19982000 time dummy variable, which is interacted with the independent variables, is to measure the effect of the changes of the dependent variable from the unregulated to the regulated environment. The results show that change in the extent of voluntary disclosure from the pre- to the post-period is negatively affected by the use of hedging (HEDGEy19982000). However, this change in the dependent variable from the pre- to the post-regulation period due to hedging level (HEDGEy19982000 1-tailed p-value is 0.9025) is not in the predicted direction and not significant. Therefore, HEDGE is not significant for the pre-regulation period, the effect of the change from the pre- to the post-regulation period is not in the predicted direction and not significant. Therefore, the effect of HEDGE in the post-regulation period is also not significant.

These results provide the test for H6. In the pre-regulation period, when hedging level increases by 1 unit, there is an insignificant increase of 1.36 lines of voluntary disclosure of proprietary information relating to financial instruments. The result is consistent with the findings made by Aggarwal & Simkins (2004) who suggest that in the absence of mandatory disclosure requirements, firms with higher levels of currency derivatives usage did not voluntarily provide increased disclosure of derivative activities. With the introduction of the AASB 1033 in 1998, an increase of 1 unit of hedging results in an insignificant decrease of 1.8 lines of voluntary disclosure of proprietary information relating to financial instruments. The change in voluntary disclosure of proprietary information from the pre- to the post-period due to hedging level is not in the predicted direction and is not significant. Therefore, hedging level is found to be unrelated to management's decision to voluntarily disclose proprietary information relating to financial instruments in any regulatory environment. H6 is thus rejected. The argument is not supported that firms would disclose more proprietary

information to signal their underlying quality in a situation where they may be able to better absorb proprietary costs due to greater use of hedging for management of their risks exposure. In fact, the inference is that avoidance of currency and interest rate risk (through hedging) is not related to avoidance of competitor risk (through less disclosure of proprietary information).

In order to increase the sample size of companies to be included in the regression analysis, a second regression analysis is performed without the variable HEDGE, INDUSTMy19982000 and INDUSTIy19982000, as these variables have no significant effect on the voluntary disclosure of proprietary information. Separate regression analysis undertaken indicates that INDUSTCSy19982000 is also not significant. Table 39 presents the result of the second regression analysis while Table 40 presents the result of the first Wald test for the variable OWNER. OWNER, which is treated as a control variable, is found to be not significant in the base period but the change from the pre- to the post-regulation period is significant (p-value 0.0059, 2-tailed tests, Table 39). A Wald coefficient restrictions test is performed to determine whether the regression coefficient for the variable OWNER, as generated from the regression analysis in Table 39, is significant for the post-period. This test can determine whether the coefficients generated for the base period and y19982000 for the variable OWNER have any effect on the dependent variable for the post-regulation period. The Wald statistic measures how close the unrestricted estimates come to satisfying the restrictions under the null hypothesis. Thus, the null hypothesis is that the set of coefficients has no effect on the dependent variable. The null hypothesis for the variable OWNER is H_0: $\beta_5 + \delta_5 = 0$ versus a double-sided alternative hypothesis (i.e. $\beta_5 + \delta_5$ is not equal to 0).

Results of the first Wald test for OWNER (Table 40) indicate that OWNER is significant at 5% confidence level (2-tailed test) for the post-period. Consequently, OWNER cannot be dropped from the regression analysis in Table 39, otherwise it would be a confounding variable in the post-regulation period.

In Table 39, sample size for this regression analysis has increased to 69 companies or 402 firm year observations. The F-statistic for the model is 15.66634 and the p-value is significant. The adjusted R-squared for this model is 0.732840 suggesting that the

overall model has strong explanatory power. The Durbin-Watson statistic of 1.482580 suggests that there is mild evidence of first-order serial correlation in the regression analysis. Similarly, with heteoskedasticity, the presence of first-order serial correlation does not cause bias or inconsistency in the fixed effects estimator.

Results of the regression analysis from Table 39 indicate that for the independent variable MDISC, which is involved in testing for H1 and H2, an increase of 1 line of disclosure relating to the proposed mandatory disclosure items results in an increase of 0.049 line of voluntary disclosure of proprietary information in the pre-regulation period. The increase in voluntary disclosure due to the impending mandatory disclosure requirements in this regression analysis is significant at the 1% confidence level (1-tailed test, p-value 0.0013). H2 is thus accepted.

By comparison, the introduction of AASB 1033 in 1998 brought about a subsequent increase of 0.112 lines of voluntary disclosure of proprietary information for every increase of 1 line of mandatory disclosure items (MDISCy19982000). The increase in voluntary disclosure of proprietary information relating to financial instruments due to the introduction of AASB 1033 is significant at the 1% confidence level (1-tailed test, p-value 0.0006). Therefore, an increase in the mandatory disclosure of non-proprietary information relevant to financial instruments increases the voluntary disclosure of related proprietary information. Since the increase is significant, H1 is fully accepted. In the post-regulation period an increase of 1 line of mandatory disclosure items results in a significant increase of (0.049 + 0.112) 0.161 lines of voluntary disclosure of proprietary information relating to financial instruments.

In the pre-regulation period, management is not required to disclose information relating to the use of financial instruments. Therefore, such information is normally kept 'off-balance sheet' by management, as it would be proprietary in nature. Management would fear that the disclosure of proprietary information might result in loss of profits to the company as a result of strategic actions taken by competitors. Results of this study indicate that firms, however, do voluntarily disclose proprietary information relating to financial instruments even in the pre-regulation period. The results are in line with signalling theory, which predicts that managers of certain types of firms will voluntarily disclose more information than proprietary costs would warrant in order to

signal their type or quality as the disclosure of such information will favourably influence investors' decisions.

The issuance of AASB 1033 in 1998 imposed mandatory disclosure requirements on financial instruments, making the information relating to the mandatory disclosure items non-proprietary for all reporting entities. Therefore, in the post-regulation period, management possesses both proprietary and non-proprietary information relating to financial instruments. In such circumstances, the results of this study indicate that management is now willing to voluntarily disclose more proprietary information relating to financial instruments than in the pre-regulation period. The results confirm Dye's (1986) assertion that in cases where managers are endowed with both proprietary and non-proprietary information, mandatory and voluntary disclosures may complement each other and an increase in mandatory disclosure of non-proprietary information will increase the voluntary disclosure of related proprietary information. As suggested by Dye (1986) in such circumstances the increase in the mandatory disclosure of non-proprietary information would reduce the benefits of withholding correlated proprietary information. With the introduction of the AASB 1033 certain accounting information relating to the use of financial instruments is made readily available to users of accounting information. When such information is made available, users of accounting information are able to infer other proprietary information relating to financial instruments from the mandatory information. Thus, management may perceive that it is to the best interest of the company to voluntarily disclose such information. For example, in the post-regulation period, an item of mandatory disclosure became the discussion of the extent and nature of financial derivatives used, and accounting policies adopted, for these disclosures. The findings revealed that, in parallel to these items of mandatory disclosures, there was an increase in the voluntary disclosure of discussions of risk management strategies relating to financial instruments (Table 11). Another example is that when the mandatory item of disclosure of net fair value of financial assets and financial liabilities was introduced, the voluntary disclosure of key information on aspects of recognition and measurement of financial assets and liabilities emerged (Table 11). The empirical findings in this study confirm Dye's (1986) model. This finding is also consistent with Taylor and Redpath (2000).

It is further revealed in Table 39 that the proprietary costs surrogate variable GROWTH, has the predicted sign and is significant in the pre-regulation period. Thus, with increased sample size, the effect of GROWTH in the pre-regulation period is significant at the 5% confidence interval (p-value for GROWTH 1 tailed-test, 0.0415). Therefore, companies with higher investment growth opportunities voluntarily disclose less proprietary information in the pre-regulation period. This indicates that in the pre-regulation period, firms with investment growth opportunities are reluctant to disclose proprietary information relating to financial instruments for fear that such disclosure will be acted upon by competitors and in turn erode their opportunities for growth. In this situation firms are more inclined not to reveal their proprietary information than to signal their higher quality type. For example, higher growth firms would be less inclined to voluntarily disclose their objectives for holding or issuing derivatives in the pre-regulation period (Table 15). Thus, H4 is accepted for the pre-regulation period. However, the variable GROWTH did not have the predicted sign with the introduction of the mandatory disclosure requirements. The adjusted p-value for 1-tailed test is therefore 0.9900 (1 – ½ p) making the change not significant. This result suggests that management's ability or incentive to protect the firm's proprietary information in order to safeguard growth opportunities was reduced in the post-regulation period when all firms were now required to disclose information that had previously been of a proprietary nature.

Table 39
Fixed Effects Model: Proprietary Costs Results (2)

Dependent Variable: VDISCPROP
Method: Panel Least Squares
Sample: 1995 2000
Cross-sections included: 69
Total panel (unbalanced) observations: 402
White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob. (2-tailed)	Prob. (1-tailed)
C	32.65835	8.954787	3.647027	0.0003	-
MDISC	0.048973	0.016090	3.043702	0.0025	0.0013
MDISCy19982000	0.111670	0.033958	3.288446	0.0011	0.0006
GROWTH	-4.656190	2.676660	-1.739552	0.0829	0.0415
GROWTHy19982000	6.181064	2.644439	2.337382	0.0200	0.9900
OWNER	-0.061411	0.106132	-0.578628	0.5632	-
OWNERy19982000	-0.101452	0.036588	-2.772856	0.0059	-
INDUSTEy19982000	18.35021	4.599306	3.989779	0.0001	-

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.782808	Mean dependent var	35.04530
Adjusted R-squared	0.732840	S.D. dependent var	30.24873
S.E. of regression	15.63481	Akaike info criterion	8.505431
Sum squared resid	79689.79	Schwarz criterion	9.260979
Log likelihood	-1633.592	F-statistic	15.66634
Durbin-Watson stat	1.482580	Prob(F-statistic)	0.000000

Table 40

Results of Wald Coefficient Restrictions Test (1)

Wald Test:
Test of coefficients OWNER +OWNERy19982000 = 0

Test Statistic	Value	df	Probability
F-statistic	4.754713	(1, 326)	0.0299
Chi-square	4.754713	1	0.0292

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(6) + C(7)	-0.162863	0.074690

Restrictions are linear in coefficients.

5.5.2.6 The Political Costs Results – Tests of H7, H8, H9a and H9b

Table 41 presents the result of the multiple regression analysis for the effects of political costs on the voluntary disclosure of information relating to financial instruments in the period before and after the introduction of the mandatory disclosure requirements. The sample size for this regression analysis is for 69 sample firms or 396 firm year observations. Missing data for the measurement of market capitalization precludes some observations from the analysis. Initial regression results indicate that the effect for INDUSTMy19982000, INDUSTIy19982000 and INDUSTCSy1982000 are not significant and are thus omitted from the final regression results.

Table 41

Fixed Effects Model: Political Costs Results

Dependent Variable: VDISC
Method: Panel Least Squares
Sample: 1995 2000
Cross-sections included: 69
Total panel (unbalanced) observations: 396
White cross-section standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob. (2-tailed)	Prob. (1-tailed)
C	9.964935	13.66377	0.729296	0.4664	-
MDISC	0.067895	0.024656	2.753739	0.0062	0.0031
MDISCy19982000	0.075532	0.012367	6.107810	0.0000	0.0000
DISTRESS	-0.000205	0.001575	-0.130218	0.8965	0.5518
DISTRESSy19982000	-0.012033	0.004897	-2.457091	0.0145	0.9928
SIZE	4.147454	1.304110	3.180294	0.0016	0.0008
SIZEy19982000	0.619369	0.545397	1.135631	0.2570	0.1285
MEDIA	0.026834	0.010536	2.546836	0.0113	0.0057
(MEDIA X MDISC)	-0.002425	0.000267	-9.092168	0.0000	0.0000
OWNER	-0.102778	0.102538	-1.002345	0.3169	-
OWNERy19982000	-0.108522	0.047575	-2.281064	0.0232	-
INDUSTEy19982000	18.67548	3.687710	5.064249	0.0000	-

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.835571	Mean dependent var	34.12402
Adjusted R-squared	0.794463	S.D. dependent var	29.60072
S.E. of regression	13.41982	Akaike info criterion	8.209711
Sum squared resid	56908.94	Schwarz criterion	9.014037
Log likelihood	-1545.523	F-statistic	20.32658
Durbin-Watson stat	1.406700	Prob(F-statistic)	0.000000

Results in Table 41 of the multiple regression analysis on the effects of political costs indicate that the F-statistic for the model is 20.32658 and the p-value is significant and with an adjusted R-squared of 0.794463 the overall model has strong explanatory power. The Durbin-Watson statistic of 1.406700 suggests the presence of mild first-order serial correlation in the regression results.

The results indicate that all the independent variables have the expected signs except for the variable DISTRESS. Therefore, the adjusted p-values for 1-tailed test for DISTRESS is 1- ½ p. Thus, DISTRESS is not significant in the pre-regulation period and the change due to regulation is also not significant (p-values, 1-tailed, 0.5518 and 0.9928 respectively). MDISC, MDISCy19982000, SIZE, SIZEy19982000 and MEDIA are positively related to the voluntary disclosure of information relating to financial instruments while (MEDIA X MDISC) is negatively related. MDISC and MDISCy19982000 are both significant at the 1% confidence level (1-tailed test, p-value 0.0031 and 0.0000 respectively). Therefore, MDISC is also significant in the post-regulation period. SIZE is significant in the base period and results of the second Wald test (Table 42) indicate that the p-value is significant for SIZE. Thus, SIZE is significant in the post-regulation period. However, the increase in voluntary disclosure due to size of company from the pre- to the post-regulation period is not significant. OWNER is not significant in the base period but results of the second Wald test (Table 42) indicate that the p-value is significant. Therefore, OWNER cannot be dropped from the regression analysis in Table 41 otherwise it would be confounding variable in the post-regulation period.

Table 42

Results of Wald Coefficient Restrictions Test (2)

Wald Test: Test of coefficients
SIZE + SIZEy19982000 = 0

Test Statistic	Value	df	Probability
F-statistic	20.90472	(1, 316)	0.0000
Chi-square	20.90472	1	0.0000

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(6) + C(7)	4.766823	1.042574

Restrictions are linear in coefficients.

Table 42 (continued)

Results of Wald Coefficient Restrictions Test (2)

Wald Test: Test of coefficients OWNER + OWNERy19982000 = 0

Test Statistic	Value	df	Probability
F-statistic	9.571526	(1, 316)	0.0022
Chi-square	9.571526	1	0.0020

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(10) + C(11)	-0.211301	0.068298

Restrictions are linear in coefficients.

Results of the regression analysis from Table 41 indicate that MDISC is significant for the pre- and post-period. An increase in the mandatory disclosure items results in an increase in the voluntary disclosure of information relating to financial instruments, both in the pre- and post-regulation period. Thus, the introduction of AASB 1033 results in an increase in the voluntary disclosure of information relating to financial instruments. This finding for the political cost model reinforces the results of a positive relationship between mandatory and voluntary disclosure under the proprietary cost model (Table 38). It supports signalling theory's argument and evidence that the perceptions of potential investors regarding the quality of a company will be managed through greater voluntary disclosures when the market for information is active (Carter et al., 1998; Datar et al., 1991). In this study, the market for signals of quality obtained from financial instruments information is found to be active in terms of showing that mandatory and voluntary disclosures complement each other.

The variable DISTRESS is concerned with the test for H7. Results of the regression analysis are not consistent with the hypothesis. The variable DISTRESS did not have the predicted sign. Companies that have a higher probability of being in financial distress are expected to voluntarily disclose more information so as to appeal to the bondholders in order to give bondholders more confidence and to avoid the exercise of

bond covenants. As such, these companies are expected to voluntarily disclose more information in order to inform the bondholders of their financial situations. This phenomenon was not evident in the analysis. Therefore, H7 is rejected. Perhaps one of the contributing factors to a failure to find that firms in distress will have an incentive to disclose more details relating to their financial instruments is that such firms, by virtue of their poor financial condition, did not have hedging instruments in place for them to disclose. Alternatively, as suggested by Dichev & Skinner (2002), debt covenant violations are not associated with financial distress and private lenders use debt covenant violations only as a screening device without imposing serious consequences on the borrowing firms. Thus, companies that are in distress do not have the incentives to voluntarily disclose more information, as they know that lenders would waive their debt covenant violations or reset the debt covenants.

The variable SIZE is to test for H8. Both in the regulated and unregulated environment larger companies are hypothesized to voluntarily disclose more information relating to financial instruments than smaller companies. With the introduction of AASB 1033 there is an increase in voluntary disclosure of information for larger firms. While the increase in disclosure from the pre-regulation to the post-regulation period is not significant, the Wald test (Table 42) reveals that SIZE is significantly related to VDISC in the post-regulation period. The findings confirm the political costs hypothesis. Larger companies are willing to disclose more information than smaller companies to avoid incurring political costs. Since larger companies are subjected to more intense monitoring than smaller companies, larger companies are willing to voluntarily disclose more information than smaller companies, both in the regulated and unregulated environment. The findings from this study suggest that the condition of the regulatory environment does not alter the voluntary disclosure decisions of management of large companies from a political cost perspective. As large companies are politically visible, management of large companies are adopting the strategy of voluntarily disclosing corporate information regardless of the regulated or unregulated environment. The findings also confirm legitimacy theory, especially strategic legitimacy. As larger companies have greater need to manage their corporate image and to act within societal expectation, management of such companies are adopting the strategy of disclosing more information in pursuit of their goals. Thus, H8 is accepted. It is concluded that the results for SIZE in Tables 41 and 42 reinforce the wide body of evidence in the

literature that voluntary disclosure is used by larger firms to manage their potential political costs and perceived legitimacy in society.

MEDIA and (MEDIA X MDISC) are concerned with the tests for H9a and H9b. The initial univariate test of H9a indicated that there was a possibility that the anticipation of mandatory disclosure requirements had a moderating effect on the relationship between VDISC and MEDIA in the pre-regulation period. During this period, while media attention is hypothesised to positively affect the extent of voluntary disclosure, it was also a period when the introduction of mandatory disclosure became increasingly anticipated. Thus, to analyse the effect of MEDIA on VDISC in the anticipated regulation period, the interaction between MEDIA and MDISC is further analysed. Schoonhoven (1981) explains that the tests for the existence of non-monotonic versus monotonic interaction effects can be performed by examining the partial derivative of the regression equation. The partial derivative of the regression equation for the effects of the political costs inducing variable, MEDIA, is examined as follows:

$$\delta VDISC_{it} / \delta MEDIA_t = \beta_4 MEDIA_t + \beta_5 (MEDIA_t \text{ X } MDISC_{it}) \text{ .....(7)}$$

The existence of non-monotonic effects provides information on where in the range of the moderating variable, ($MEDIA_t$ X $MDISC_{it}$), a change in the direction of slope occurs for the moderating variable. If the value of $\delta VDISC_{it} / \delta MEDIA_t$ is always positive or always negative over the entire observed range of the moderating variable, then the relationship between VDISC and MEDIA will be considered monotonic. If the value of $\delta VDISC_{it}/\delta MEDIA_t$, is otherwise, then the relationship will be considered non-monotonic. Equation (7) becomes zero when ($MEDIA_t$ X $MDISC_{it}$) has a particular value, which is defined as the inflection point of the slope (the value of $MEDIA_t$ X $MDISC_{it}$ at the turning point of the slope). Mathematically, equation (7) is where ($MEDIA_t$ X $MDISC_{it}$), the modifying variable, is equal to the ratio of the coefficients of the additive and interaction term (ie - β_4/β_5). This is the point on the range of the modifying variable at which MEDIA, the variable that is modified, has no effect on the dependent variable. That is to say, it is the point of inflection of the partial relation $\delta VDISC_{it}/\delta MEDIA_t$. If the value for the moderating variable obtained from the inflection point ratio falls within the observed range of the moderating variable in the

sample, this is the point at which the effect of MEDIA on VDISC will change signs (Schoonhoven 1981).

The partial derivative of equation (7) can be calculated as follows:

$\delta VDISC_{it} / \delta MEDIA_t = \beta_4 MEDIA_t + \beta_5 (MEDIA_t \text{ X } MDISC_{it})$

$= 0.026834 + (-0.002425)$ (From Table 41)

$= 0.024409$ (Intercept)

The inflection point $= - \beta_4 / \beta_5$

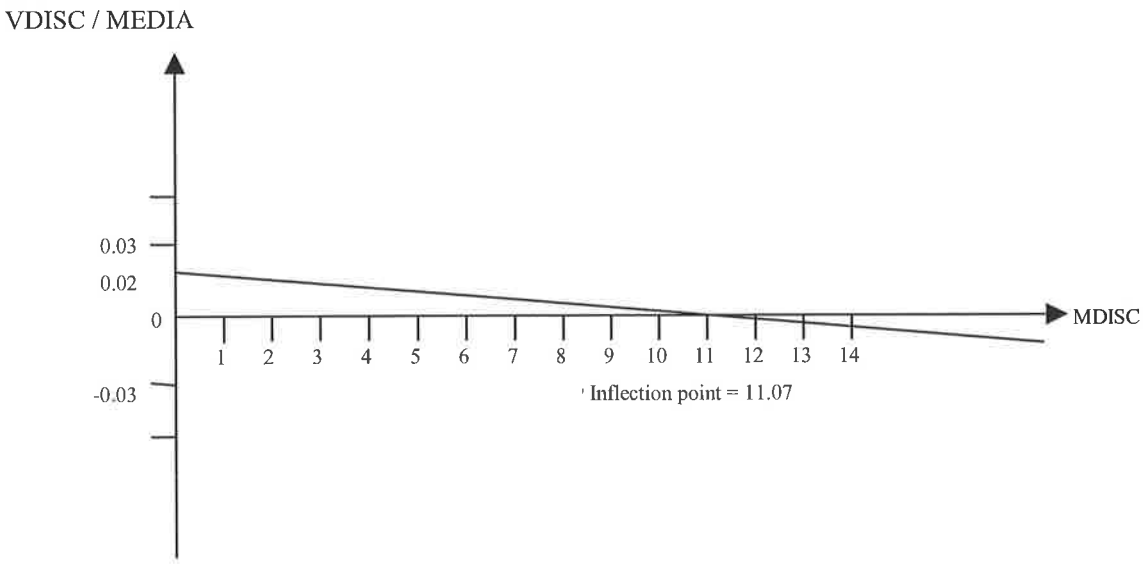
$= - 0.026834/-0.002425$

$= 11.07$

The partial derivative equation can be plotted to show the effect of the modified variable on the dependent variable over the range of the modifying variable. Figure 8 depicts the graphical presentation of the partial derivative equation for the anticipated regulation period.

Figure 8

Graph of the Partial Derivative Regression Equation for the Interaction Effects of MDISC and MEDIA



The inflection point of 11.07 is within the observed range for the values of MDISC suggesting a non-monotonic relationship. Thus, there is a moderating effect of MDISC

on the relationship between VDISC and MEDIA. Figure 8 shows that when MDISC is greater than 11.07 lines, VDISC is smaller relative to the media attention. When MDISC is less than 11.07 lines, VDISC will be larger relative to the media attention. This non-monotonic relationship suggests that MEDIA has a positive effect on VDISC when MDISC is low and a negative effect on VDISC when MDISC is high in the anticipated regulation period.

Results of the regression analysis from Table 41 indicate that when there is high general media attention concerning the misuse of financial instruments (MEDIA), then there is an increase in the voluntary disclosure of information relating to financial instruments in the pre-regulation period. Thus, H9a is accepted. The results support the media agenda setting theory. In the pre-regulation period when there was extensive negative media attention relating to financial instruments due to the collapse of Barings Bank, companies voluntarily disclosed more information relating to financial instruments. This evidence suggests that negative media attention relating to the use of financial instruments is perceived by management as having an effect on the legitimacy of the firms, resulting in a legitimacy gap. Management therefore adopt the strategy of voluntarily disclosing more information on their use of financial instruments even though during this period there were no regulatory requirements. Such media attention arising from the Barings Bank incident influenced management's disclosure decisions. The results confirm the findings of Deegan et al. (2000).

However, the proposed introduction of AASB 1033 has been found to have a moderating effect on the relationship between voluntary disclosure and negative media attention. When the anticipation of mandatory disclosure items is at an earlier stage, the impact of MEDIA on voluntary disclosure items is high. As the anticipation of mandatory disclosure progressively grows (i.e., MDISC becomes stronger during the pre-regulation period), then the relative impact of MEDIA on voluntary disclosure becomes less. This moderating effect is reflected in the regression analysis by interacting the variable MEDIA with MDISC (MEDIA X MDISC). The moderating effect is significant. As the effect of MDISC increases from 1995 to 1997 the effect of MEDIA on VDISC decreases during this period. Thus, H9b is fully accepted.

In this study, the effects of time lag relating to financial instruments disclosure in annual reports following the high adverse media attention relating to the collapse of Barings Bank in 1995 and 1996 is not investigated, as the analysis is performed for the full pre-regulation period rather than on a yearly basis. The findings indicate that there is a media agenda-setting influence that is sustained throughout the three-year pre-regulation period. The heightened media attention relating to the collapse of Barings Bank drove political sensitivity over the pre-regulation period, resulting in an increase in voluntary disclosure during this period. The influence of the media however declined with the impending introduction of the mandatory disclosure requirements. Furthermore, even though the Barings Bank collapse case is associated with the *Banking and Finance* industry, this study finds that the effects of the negative media attention triggered voluntary disclosures in companies from various industries.

5.5.2.7 The Combined Results

The theories invoked in this study have centred on the trade-off between proprietary and political costs in management's decision to voluntarily disclose information related to financial instruments. To minimize the proprietary costs, minimal disclosure of proprietary information is needed, but to minimize political costs, maximum disclosure of information is needed. In addition, a change in the mandatory disclosure requirements influences management's voluntary disclosure decisions.

In order to test for the relative influences of mandatory disclosure requirements, the impact of proprietary costs, and the impact of political costs on management's voluntary corporate disclosure relating to financial instruments in a regulated and unregulated environment, a multiple regression analysis combining the three perspectives is undertaken. Table 43 presents the results of the combined model. The dependent variable in this regression analysis is VDISC, thus the regression analysis is measuring the effect on the voluntary disclosure of information relating to financial instruments. VDISC is used rather than VDISCPROP because VDISC is entirely relevant to a test of political cost and mandatory disclosure relationships, respectively, even though it has less relevance to the test of proprietary cost relationships.

Results of the combined model in Table 43 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.

As in the previous analysis, determination of whether the coefficients generated from the regression analysis are significant for the post-period is undertaken with the third Wald coefficient restrictions test performed on the independent variables SIZE and OWNER with their interactions for y19982000. 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. As for OWNER, only the change is significant. For MDISC, the coefficients for the pre-regulation period and the change are already significant; therefore, together they must be significant for the post-regulation period. The Wald test is not performed for the GROWTH and DISTRESS variables because GROWTHy19982000 is not in the predicted direction and therefore not significant; likewise, DISTRESS is not significant in the base period and the change is not in the predicted direction and therefore not significant. Table 44 presents the results of the third Wald coefficient restrictions tests carried out. Results 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 43

Fixed Effects Model: Combined Results

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 44

Results of Wald Coefficient Restrictions Test (3)

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.

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.

The combined results are consistent with the results of the separate regression analyses. 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.

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 combined 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.

Overall, the general picture that emerges from the comprehensive regression model in Table 43 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.

5.6 Preliminary Comparative Analysis with Malaysian Companies' Disclosures

This section presents and discusses the results of a supplementary investigation on the disclosure of financial instruments in Malaysia. The purpose is to gain an insight into the generalisability of the effects of different regulatory settings on the relationship between voluntary and mandatory disclosure. As this is a preliminary investigation, only descriptive statistics and univariate tests on the relationship between mandatory and voluntary disclosures relating to financial instruments amongst Malaysian companies is investigated. The impact of proprietary and political costs on voluntary disclosure decisions and the subsequent testing of the hypotheses using multiple regression analysis are not undertaken for the Malaysian investigation. Descriptive statistics and univariate tests relating to the effects of mandatory disclosure on the voluntary disclosure of financial instruments-related information are presented in this section (tests of H1, H2 and H3). The results of the descriptive analysis and the univariate tests are then compared with the Australian results presented earlier in this chapter. As indicated in Chapter 1, the study is not a comparative study between Australia and Malaysia as the investigation involves different time periods. The comparisons made between the results is to provide some initial insights to the influence of the introduction of an accounting standard on financial instruments disclosure on voluntary disclosure decisions across a developed capital market such as Australia and an emerging capital market such as Malaysia. The results of the preliminary investigations from Malaysia will form the basis for further studies to be conducted in the future.

For the Malaysian investigation, information contained in the Statement of Corporate Governance and Statement of Internal Control relating to the voluntary disclosure categories were not treated as voluntary items from 2001 onwards as these statements

became mandatory in Malaysia in 2001 with the change in the Malaysian Stock Exchange listing requirements.

Descriptive statistics relating to the mandatory and voluntary disclosure of financial instruments-related information are first presented. The section then proceeds with the testing of the three hypotheses relating to the effects of mandatory disclosure using univariate tests.

5.6.1 Descriptive Statistics on Mandatory and Voluntary Disclosure Items

Descriptive statistics relating to the mandatory and voluntary disclosure of financial instruments-related information for Malaysian companies are presented in Table 45 and Table 46. Only the mandatory and voluntary disclosure index (including the voluntary disclosure index for the various categories of voluntary disclosure) are presented for the Malaysian data. Table 45 presents the description of the aggregate disclosure of mandatory and voluntary items relating to financial instruments for 2000–2003. The Malaysian data is extracted for 21 companies across four years, resulting in a total of 84 firm year observations.

Table 45

Description of Aggregate Disclosure of Mandatory and Voluntary Items Relating to Financial Instruments for 2000 – 2003 (Malaysian Sample)

Disclosure Totals	Frequencies Distribution (Number of lines disclosed)		
	N	Overall Mean	Std. Deviation
MDISC	84	63.65	71.44
VDISC	84	37.81	24.89
Voluntary Disclosure Index for Risk Management	84	15.58	18.34
Voluntary Disclosure Index for Historical Information	84	3.90	5.68
Voluntary Disclosure Index for Key Information	84	9.86	10.82
Voluntary Disclosure Index for Projected Information	84	7.96	7.44
Voluntary Disclosure Index for Management Discussion and Analysis	84	0.50	1.26

Results from Table 45 indicate that the overall mean disclosure for MDISC for the four years is 63.65 lines of disclosure with a standard deviation of 71.44. For VDISC the overall mean disclosure for the four years is 37.81 lines of disclosure with a standard

deviation of 24.89. Comparing these results with the Australian data (Table 8), Australia has a higher overall mean for MDISC of 87.54 lines but a slightly lower VDISC (35.78 lines). Of the five voluntary disclosure categories investigated, the overall mean for the Voluntary Disclosure Index for Risk Management (15.58 lines for Malaysia; 12.64 lines for Australia) and the Voluntary Disclosure Index for Key Information (9.86 lines for Malaysia; 7.59 for Australia) is higher for Malaysian companies. For the Voluntary Disclosure Index for Projected Information, Australia has a higher overall mean compared to Malaysia (11.10 Australia; 7.96 Malaysia). For the other two categories of voluntary disclosure, Voluntary Disclosure for Historical Information and Voluntary Disclosure for Management Discussion and Analysis, the results between the two countries are almost the same (3.90 Malaysia; 3.90 Australia for the Voluntary Disclosure Index for Historical Information; 0.50 Malaysia; 0.56 Australia for the Voluntary Disclosure Index for Management Discussion and Analysis).

Table 46

Disclosure Index: Comparison of Means by Industry (Malaysian Sample)

Disclosure Index	Industrial Products	Plantation	Consumer Products	F-value	Sig
	Number of lines of disclosure				
MDISC	59.95	55.07	75.93	0.648	0.526
Voluntary Disclosure Index for Risk Management	8.07	17.11	21.57	4.246	0.018*
Voluntary Disclosure Index for Historical Information	1.73	8.86	1.12	25.633	0.000**
Voluntary Disclosure Index for Key Information	11.84	8.61	9.14	0.711	0.494
Voluntary Disclosure Index for Projected Information	4.25	12.89	6.75	12.887	0.000**
Voluntary Disclosure Index for Management Discussion &Analysis	0.39	0.57	0.54	0.155	0.857
VDISC	26.28	48.04	39.12	6.073	0.003**

** Significant at the 0.01 level
* Significant at the 0.05 level

Table 46 presents the results of the mean of the mandatory and voluntary index by industry. A one-way ANOVA is performed to analyse the variance in the mean disclosure between industries, and an F-ratio calculated. There is no significant difference in the amount of MDISC between the three industries. However, *Consumer Products* has the highest overall mean amongst the three industries with 75.93 lines of disclosure. There is however, a significant difference in VDISC amongst the three industries with *Plantation* having the highest overall mean of 48.04 lines of disclosure. The significant difference in VDISC between the industries is due to the significant difference in the voluntary disclosure index for the risk management, historical information and projected information categories. For Australian companies, the difference in MDISC for the four Australian industries is, however, significant (Table 10). The VDISC for the Australian industries is also significant with all categories of voluntary disclosures being significant except for the category relating to historical information. This evidence in Table 46 confirms the existence of industry effects on voluntary disclosure in both a developed economy (Australian sample) and a developing economy (Malaysian sample). However, the existence of an industry effect on the comprehensiveness of mandatory disclosure is found to apply in only one country.

Generally, it is concluded that disclosure patterns differ most between Malaysia and Australia in terms of items of mandatory disclosure. For mandatory disclosure items, the practice in Malaysia is to provide minimal compliance and this is evident across all industries. In contrast, there is a greater comprehensiveness of disclosure relating to mandatory items in Australia, although the extent of this comprehensiveness is influenced by the common mandatory disclosure practices of each industry group.

5.6.2 Univariate Tests on the Effects of Mandatory Disclosure – Tests of H1, H2 and H3

Tables 47 to 49 present the results of the univariate tests for H1, H2 and H3. Table 47 presents the results for H1, which predicts that an increase in mandatory disclosure of non-proprietary information relevant to financial instruments increases the voluntary disclosure of related proprietary information. An independent sample t-test is used to compare the mean score for the two groups of years.

Table 47

Mandatory Disclosures and Weighted Voluntary Disclosures: Comparison of Means between Pre-Regulation and Post-Regulation Years (Malaysian Sample)

Disclosure Index	Number of lines of disclosure		t	Sig (2-tailed)
	Pre years mean	Post years mean		
MDISC	11.50	140.34	-15.714	0.000**
VDISCPROP	29.21	48.99	-3.945	0.000**
Weighted Voluntary Disclosure Index for Risk Management	7.45	26.87	-5.340	0.000**
Weighted Voluntary Disclosure Index for Historical Information	2.97	2.94	0.028	0.978
Weighted Voluntary Disclosure Index for Key Information	6.96	9.07	-1.087	0.280
Weighted Voluntary Disclosure Index for Projected Information	11.54	9.26	1.034	0.304
Weighted Voluntary Disclosure Index for Management Discussion and Analysis	0.30	0.85	-1.855	0.068

**Significant at the 0.01 level

As indicated in Table 47 there is a significant increase in MDISC from the pre to post-regulation period, and the increase is also followed by a significant increase in the VDISCPROP. Thus, H1 is fully accepted. However, the increase in VDISCPROP is due only to a significant increase in disclosure for the Risk Management category. Other categories of voluntary disclosures show no significant increase in disclosure from the pre- to the post-regulation period. Similar results were obtained for Australian companies except that in Australia all categories of voluntary disclosures show a significant increase from the pre- to the post-regulation period, except for the category relating to Management Discussion and Analysis (Table 15 and Table 16).

Overall, the evidence from both countries is that voluntary disclosure increases when mandatory disclosure increases. However, the nature of the increase in voluntary disclosure is quite different. Soft information on discussion of risk management policies and processes is emphasised in Malaysia, whereas a broad range of soft and hard

information is emphasised in Australia. The inference is that the proprietariness of the increased voluntary disclosures will be lower in Malaysia.

Table 48

Weighted Voluntary Disclosures: Comparison of Means for Pre-Regulation Years (Malaysian Sample)

Disclosure Index	Number of lines of disclosure			F-value	Sig
	2000	2001	2002 (pre)		
Weighted Voluntary Disclosure Index for Risk Management	4.67	9.63	9.03	0.793	0.459
Weighted Voluntary Disclosure Index for Historical Information	3.03	2.98	2.76	0.011	0.989
Weighted Voluntary Disclosure Index for Key Information	5.85	7.49	8.46	0.408	0.667
Weighted Voluntary Disclosure Index for Projected Information	10.74	10.45	16.47	0.900	0.413
Weighted Voluntary Disclosure Index for Management Discussion & Analysis	0.00	0.61	0.28	1.375	0.263
VDISCPROP	24.29	31.16	37.00	1.060	0.355

Table 48 gives the test for H2, which predicts that 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.

As MASB 24 became effective in Malaysia for financial statements covering periods beginning on or after 1 January 2002, Malaysian companies with financial year ending 31 December are required to comply with the provisions of MASB 24 as from 1 January 2002. For these companies 2002 is already a post-regulation year. However, for companies whose financial year end is other than 31 December, these companies are not required to comply with the requirements of MASB 24 until 2003. For these companies, 2002 is still a pre-regulation year. To incorporate this into the analysis, the year 2002 is divided into pre- and post-regulation year. For companies whose financial year end is 31 December 2002, their data for 2002 is included under 2002 post-regulation, while for companies whose financial year end is other than 31 December 2002, their data for 2002 is included under 2002 pre-regulation.

Results from Table 48 indicate that there is no significant increase in VDISCPROP in the pre-regulation years leading up to the introduction of MASB 24. No categories of voluntary disclosure show significant increase in disclosure during the pre-regulation years. Thus, H2 is rejected.

For Australian companies, even though there is no significant increase in VDISCPROP in the univariate analysis, the Weighted Voluntary Disclosure Index for Risk Management shows a significant increase in disclosure during the pre-regulation years leading up to the introduction of AASB 1033 (Table 17).

Figure 9

Graph of the Relationship between VDISCPROP and MDISC from 2000 to 2001 (Malaysian Sample)

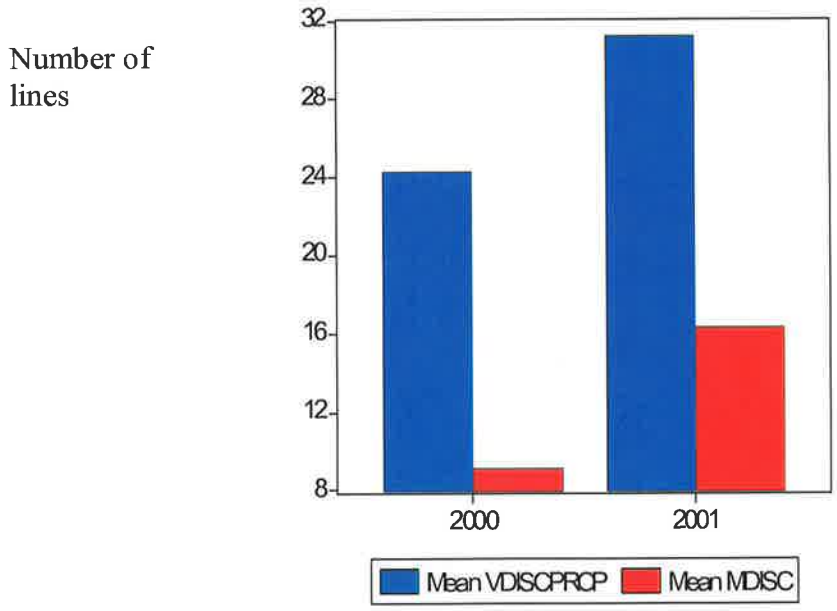


Figure 9 presents a bar chart to show the mean of VDISCPROP and MDISC from 2000 to 2001 for Malaysian companies. Unlike Australian companies (Figure 6), Malaysian companies make more voluntary disclosure of proprietary information relating to non-mandatory disclosure items in the unregulated period than disclosure relating to the proposed mandatory disclosure items. This provides the explanation for the higher VDISC for Malaysian companies as compared to Australian companies (Table 45 and Table 8).

Table 49

Mandatory Disclosure Items: Comparison of Means for Pre- and Post-Regulation Years (Malaysian Sample)

Disclosure Index	Number of lines of disclosure			F-value	Sig	Number of lines of disclosure		F-value	Sig
	Pre-regulation years					Post-regulation years			
	2000	2001	2002(pre)			2002(post)	2003		
MDISC	9.10	16.29	5.21	1.007	0.373	136.34	142.82	0.167	0.686

Table 49 gives the test for H3 that predicts that an increase in both the likelihood of, and actual introduction of, a standard on disclosure of financial instruments will increase the voluntary disclosure of additional information directly associated with mandatory disclosure items contained in the standard (i.e., the comprehensiveness of mandatory disclosure). Results from Table 49 indicate that there is no significant difference in the extent of disclosure for mandatory items both in the anticipated regulation period and in the regulated period. Even though there is significant increase in the comprehensiveness of disclosure of the mandatory items from the pre- to the post-regulation period (Table 47), the anticipation of the introduction of MASB 24 did not result in an increase in this comprehensiveness in the unregulated period. Similarly, once the standard is introduced, there is no significant increase in the comprehensiveness of disclosure of the mandatory items in the subsequent period. Thus, H3 is rejected. For Australian companies the anticipated introduction of AASB 1033 results in a significant increase in the comprehensiveness of disclosure of information associated with the mandatory disclosure items in the unregulated period (Table 18). Similar results as in Malaysia were obtained for the regulated period (Table 19).

In summary, the relationship between the extent of disclosure of non-mandatory and mandatory items of information has been compared in pre- and post-regulation periods across two countries. In terms of total disclosure, Australian companies disclose more comprehensive information relating to the mandatory disclosure items, while Malaysian companies voluntarily disclose more information relating to non-mandatory disclosure items. In particular, Malaysian companies voluntarily disclose more proprietary

information relating to non-mandatory items in the unregulated period than disclosure relating to the proposed mandatory disclosure items.

In Malaysia the increase in the voluntary disclosure of proprietary information is mainly due to the 'soft' information item relating to risk management strategies and policies on financial instruments. In Australia the increase in voluntary disclosure of proprietary information involves all categories except for the category on management discussion and analysis. Analysis of the pre-regulation years also indicates that in Malaysia, the increase in the voluntary disclosure of information relating to risk management strategies and policies occurs from the year 2001. This is probably due to the change in the Malaysian Stock Exchange listing requirements, which in 2001 required all listed companies to include in their annual reports a Statement of Corporate Governance and a Statement of Internal Control. Thus, when the Statement of Corporate Governance and the Statement of Internal Control became mandatory in 2001, and with the impending introduction of MASB 24 in 2002, Malaysian companies were voluntarily making more disclosures in their annual reports relating to their risk management strategies and policies, knowing that this information had to be made public through other reporting channels.

For the anticipated and actual mandatory disclosure items relating to MASB 24, companies in Malaysia did not show an increase in the amount of disclosure relating to the mandatory disclosure items with the impending introduction of MASB 24. As in Australia, once the mandatory disclosure requirements were introduced, there is no significant increase in the comprehensiveness of the mandatory disclosure items for companies in Malaysia in the subsequent period.

5.7 Summary

This chapter presents the results of the data analysis for this study. The disclosure content of corporate annual reports, together with published corporate data, are used to measure the variables whose relationships are analysed. Ratings by a panel of experts are used to weight the proprietariness of the voluntary disclosure variable.

For the Australian data, descriptive statistics, univariate tests and multivariate tests are performed to analyse the impact of proprietary and political costs on the voluntary

corporate disclosure of information relating to financial instruments in both a regulated and unregulated environment. In order to control for biases due to omitted variables, the fixed effects regression model for panel data analysis is used in the multiple regression analysis. Preliminary analysis using univariate tests provides some initial insights into the relationship between the dependent and independent variables. Results of the univariate tests are generally consistent with the results of the multiple regression analysis. The proposed mandatory requirements relating to financial instruments and the actual introduction of AASB 1033 result in an increase in the voluntary disclosure of information relating to financial instruments. The introduction of the mandatory disclosure requirements has a positive impact on the voluntary disclosure of proprietary information. Firms with high investment growth opportunities disclose less proprietary information in the pre-regulation years. The size of the growth firms is also significant in influencing voluntary disclosure decisions. However, firms' hedging strategies have no influence on management's voluntary disclosure of proprietary information relating to financial instruments. For the impact of political costs on the voluntary disclosure of information relating to financial instruments, company size has a positive effect in influencing voluntary disclosures. In fact, the influence of company size on voluntary disclosure is seen to be unaffected by regulation. However, the financial conditions of firms as measured by the probability of firms facing financial distress have no influence on voluntary disclosure. The high negative media attention in 1995 and 1996 due to the collapse of Barings Bank in 1995 has an influence on management's decision to voluntarily disclose more information relating to financial instruments during the same period. However, this influence is moderated by the effect of the impending introduction of AASB 1033.

The results of the combined model 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.

Findings from the study also indicate that in Australia there is a significant increase in the comprehensiveness of disclosure of the proposed mandatory disclosure items during the pre-regulation period leading up to the introduction of AASB 1033 in 1998. However, with regulation there is no significant increase in the total comprehensiveness of disclosure for the mandatory disclosure items except for items relating to discussion of firms' exposure to interest rate risk.

This chapter also presents the results of a preliminary investigation on Malaysian companies' disclosures. A preliminary comparative analysis is made between the Malaysian and Australian results. It indicates that Australian companies have higher mandatory disclosures relating to financial instruments than Malaysian companies. However, Malaysian companies have slightly higher voluntary disclosures of related information. Comparable to Australia, the extent of voluntary disclosure in Malaysia is found to be greater for 'soft' information about strategies and policies relating to risk management and lesser for specific information about quantifiable measures and trends. Similarly, information relating to management discussion and analysis of prospective market changes and their specific financial impacts relating to financial instruments receives a lower degree of disclosure in Malaysia. The higher voluntary disclosure in Malaysia relating to risk management strategies and policies is likely to be due to the change in the Malaysian Stock Exchange listing requirements requiring listed companies in Malaysia to disclose in their annual reports from 2001 onwards the Statement of Internal Control and the Statement of Corporate Governance.

Comparable to Australian companies, an increase in the mandatory disclosure of non-proprietary information relevant to financial instruments resulted in an increase in the voluntary disclosure of related proprietary information for Malaysian companies. However, the likelihood of MASB 24 becoming mandatory did not result in a significant increase in the voluntary disclosure of related proprietary information in the period leading up to the introduction of MASB 24. For the anticipated and actual mandatory disclosure items relating to MASB 24, Malaysian companies did not show an increase in the comprehensiveness of disclosure relating to the proposed mandatory

disclosure items in the anticipated disclosure period. As in Australia, once the standard on financial instruments disclosure is introduced, there is no significant increase in the comprehensiveness of mandatory disclosures in the subsequent period.

The practical implications of these findings and the limitations of the study are discussed in the Conclusions chapter.

Chapter 6

Conclusions, Limitations and Further Research

6.1 Introduction

This chapter presents an overview of the study by providing summaries and conclusions on the conceptual model and the empirical findings. The chapter then considers the implications for theory and practice of such findings for corporate financial disclosure strategies and for regulatory authorities in the evaluation of mandatory disclosure requirements. Finally, the chapter discusses the limitations and directions for future research for voluntary corporate disclosures.

As stated in Chapter 1, there are three broad or general aims of this study. The first aim is to increase the understanding on voluntary corporate disclosure practices by investigating why firms may provide more information than is mandated with particular reference to financial instruments disclosure. The second aim is to provide new empirical evidence on the relationship between mandatory and voluntary disclosure, which can assist standard-setting boards in their formulation of accounting policies, and the subsequent refinement of accounting standards, particularly in relation to the standard on presentation and disclosure of financial instruments. The final aim is to test the robustness of particular theories that have been applied to voluntary corporate disclosure, specifically the disclosure principle of information economics, signalling theory, media agenda-setting theory and legitimacy theory. To achieve these broad aims there are three specific objectives of this study:

(1) To describe the extent to which voluntary disclosure of information relevant to financial instruments changes due to imposed mandatory disclosure requirements

(2) To identify factors which generate greater or lesser proprietary and political costs for given corporate disclosures

(3) To explain the effects of proprietary and political costs on managers' voluntary disclosure decisions for the period before and after the introduction of mandatory disclosure requirements.

To achieve these specific objectives the study has invoked a set of behavioural theories to underpin arguments of management's incentives for making voluntary corporate disclosures. The disclosure content of corporate annual reports, together with published corporate data, are used to measure the variables in order to analyse their relationships. In addition, primary data collected through survey instruments are used to provide ratings to weight the proprietariness of the voluntary disclosure variable. This study is set principally amongst Australian listed companies. However, a preliminary investigation of the relationship between mandatory and voluntary disclosure, to consider the cross-country generalisability of this hypothesis in a different regulatory setting, is also undertaken for Malaysian listed companies.

As with any empirical research using content analysis of companies' annual reports, survey data collection method and multiple regression statistical techniques, this study is subject to a number of limitations. Even though these limitations may restrain the conclusions that may be drawn from this study, such limitations also provide a foundation from which further research may be generated.

6.2 Summary and Conclusions Regarding the Conceptual Model in this Study

This study examines voluntary corporate disclosure relating to financial instruments in the periods before and after the introduction of the accounting standard on presentation and disclosure of financial instruments. The study investigates whether a change in the regulatory disclosure environment relating to financial instruments affects management's voluntary disclosure decisions, and the impact of proprietary and political costs on such disclosure decisions. Theoretical models of voluntary disclosure suggest that proprietary and political costs have offsetting effects on management's decision to externally disclose corporate information. The central research question addressed in this study is: What impact do proprietary and political costs have on management's incentives to voluntarily disclose information relating to corporations' financial instruments in a regulated and unregulated environment?

This study focuses on voluntary corporate disclosure relating to financial instruments because of the off-balance sheet aspects of assets and liabilities relating to financial instruments disclosure, especially derivative instruments, which may expose companies to various forms of financial risks. The introduction of the accounting standard on presentation and disclosure of financial instruments is expected to increase the entity's perceived proprietary information costs on financial instruments disclosures, as users of financial statements are provided with off-balance-sheet information to enhance their understanding. The standard leaves the determination of the level of detail to be disclosed about particular financial instruments to the judgment of each particular entity, taking into account the relative significance of each instrument. This gives management the discretion of deciding on the extent of disclosure to be made and provides an opportunity for a study on voluntary disclosure relating to financial instruments in a regulated and unregulated disclosure environment.

Studies on voluntary financial disclosures have previously tended to focus on the relationships between the extent or quality of voluntary disclosure in corporate annual reports, and several firm characteristics. Although there are studies that have analysed the extent of voluntary disclosure for derivative instruments, there is a paucity of empirical evidence regarding the comparative impact of proprietary and political costs on voluntary corporate disclosures, including financial instruments-related disclosures.

Following a review of the accounting research literature, three branches of theoretical argument on voluntary disclosure decisions are identified as having an influence on management's decision to voluntarily disclose information in their external financial reports. These theoretical lines of argument are that a change in the regulatory environment affects voluntary disclosure, that the extent of proprietariness of information will restrict voluntary disclosure, and that the political cost of non-disclosure will increase voluntary disclosure. In this study, these branches of argument are integrated to form a conceptual framework for testing their combined effects on the extent of voluntary disclosure of information relating to financial instruments. These arguments are drawn from broader underlying theories of the disclosure principle, signalling theory, proprietary cost principle, legitimacy theory, the media agenda-setting theory and the political cost hypothesis. The various factors arising from the theories

contained in the conceptual model are then operationalised for the purpose of developing and empirically testing hypotheses.

There are basically three main groups of hypotheses tested: hypotheses for testing the relationship between mandatory and voluntary disclosure, hypotheses for testing the impact of proprietary costs, and hypotheses for testing the impact of political costs. In total there are ten hypotheses tested. Seven independent variables and two control variables were identified as having an influence on the dependent variable. The anticipation of a proposed standard on financial instruments disclosure and the existence of a standard on financial instruments disclosure were used to measure the effects of the change in the regulatory environment on voluntary disclosure of financial instruments-related information. The variables, investment growth opportunities and corporate hedging strategies, were used as proxies to measure the impact of proprietary costs, while size of company, probability of financial distress, and negative media attention were used as proxies to measure the impact of political costs. Industry of the company and the dispersion of ownership structure were included as control variables in the study.

The dependent variable for this study, the voluntary disclosure of information relating to financial instruments, was measured in two ways to take into consideration the effects of the proprietary and the political costs on the voluntary disclosure of financial instruments-related information. A weighted voluntary disclosure index with ratings on the proprietariness of the voluntary disclosure items was used to measure the voluntary disclosure of proprietary information, while an unweighted voluntary disclosure index was used to measure the effects of political costs on the voluntary disclosure of information relating to financial instruments. In addition, the effects on the proposed mandatory disclosure items and the comprehensiveness of the mandatory disclosure items were measured using a mandatory disclosure index.

Basically the study uses secondary data extracted from companies' annual reports and corporate databases to capture the amount of mandatory and voluntary disclosure of information relating to financial instruments and to capture the data for the independent variables. The study also collects primary data through a survey questionnaire of securities analysts who act as a panel of experts to rate the perceived inherent level of

proprietariness embodied in the different voluntary disclosure items relating to financial instruments. A stratified sampling method was used in which a balance of companies was randomly chosen across selected industries in Australia and Malaysia. A six-year period of study was chosen for Australia, spanning from 1 January 1995 to 31 December 2000. The six-year period enables an examination of the trends in the disclosure practices on financial instruments of public listed companies in Australia from an unregulated environment to a regulated environment. A final sample of 70 listed companies from four industries over a six-year period resulting in 420 firm-year observations forms the sample for the Australian study. For the preliminary investigation on Malaysian listed companies, a four-year study period from 1 January 2000 to 31 December 2003 was chosen. A sample of 21 companies from three chosen sectors resulting in 84 firm-year observations was extracted for the study in Malaysia.

6.3 Summary and Conclusions Regarding the Empirical Findings in this Study

To analyse the Australian data, descriptive statistics, univariate tests and multivariate tests were performed. Since the data set contains both cross-sectional and a time series dimension, the data set is a panel data set. To control for biases due to omitted variables, the fixed effects regression model for panel data analysis was used for the multiple regression analysis. The Hausman (1978) test confirmed the choice of the fixed effects regression model. For the Malaysian data, only descriptive statistics and univariate tests were performed to investigate the relationship between mandatory and voluntary disclosure.

This study documents that both in Australia and Malaysia an increase in the mandatory disclosure of non-proprietary information has resulted in an increase in the voluntary disclosure of related proprietary information. Thus, H1 is accepted. The introduction of the mandatory disclosure requirements has a positive impact on the voluntary disclosure of proprietary information. Thus, mandating the disclosure requirements relating to financial instruments proved to be beneficial to society. However, there were mixed findings between Australia and Malaysia relating to the disclosure of voluntary information in the anticipated regulation period. Findings from the Australian sample indicate that the likelihood of a proposed standard relating to financial instruments becoming mandatory resulted in an increase in the voluntary disclosure of information related to non-mandatory disclosure items, especially relating to information involving

risk management strategies and policies, which is perceived by management to be directly related to the disclosure of financial instruments. Thus, H2 is accepted. However, for the Malaysian sample the likelihood of MASB 24 becoming mandatory did not result in a significant increase in the voluntary disclosure of information related to non-mandatory disclosure items, resulting in a rejection of H2. Even though information related to the risk management strategies and policies increased during the period, the increase is not significant.

For the Australian sample there is also a significant increase in the voluntary disclosure of the proposed mandatory disclosure items during the pre-regulation period leading up to the introduction of AASB 1033 in 1998. However, with regulation there is no significant increase in the total comprehensiveness of disclosure for the mandatory disclosure items except for items relating to discussion of firms' exposure to interest rate risk. Thus, H3 is partially accepted. For the anticipated and actual mandatory disclosure items relating to MASB 24, Malaysian companies did not show an increase in the amount of disclosure relating to the proposed mandatory disclosure items in the anticipated disclosure period. As in Australia, once the standard on financial instrument disclosure is introduced, there is no significant increase in the comprehensiveness of mandatory disclosures in the subsequent period. Thus, H3 is rejected for the Malaysian investigation. An analysis by industry suggests the existence of industry effects on voluntary disclosure in both a developed economy (Australian sample) and a developing economy (Malaysian sample). However, the existence of an industry effect on the comprehensiveness of mandatory disclosure is found to apply only in Australia.

In terms of the specific items of voluntary disclosure, 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 were 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. Thus, general information receives higher voluntary disclosure than specific information. Furthermore, it was found that there is no significant decrease in any items of voluntary disclosure over the period of study despite the fact that mandatory items of disclosure

came into force during this period. The introduction of an accounting standard on financial instruments disclosure has not diminished the extent of voluntary disclosure of related information. In addition, the mean mandatory disclosure index for Australian companies seems to be higher than for Malaysian companies. However, Malaysian companies have a slightly higher mean for the voluntary disclosure index. These findings confirm the application of signalling theory in the area of corporate disclosure as suggested by Watts & Zimmerman (1986). Even though in the pre-regulation period management is not required to disclose information relating to the use of financial instruments, managers of certain types of firms are willing to voluntarily disclose this information to signal the quality of their firm. As suggested by Hughes (1986), by making additional direct voluntary disclosure in their financial statements, managers are effectively communicating inside information to investors, thus enabling investors to infer the value of their firms.

The disclosure patterns differ most between Malaysia and Australia in terms of items of mandatory disclosure. For mandatory disclosure items, the practice in Malaysia is to provide minimal compliance and this is evident across all industries. In contrast, there is a greater comprehensiveness of disclosure relating to mandatory items in Australia, although the extent of this comprehensiveness is influenced by the common mandatory disclosure practices of each industry group. It should be pointed out that the higher voluntary disclosure in Malaysia is mainly due to the disclosure of 'soft' information relating to risk management strategies and policies. This higher disclosure of risk management strategies and policies in Malaysia is likely to be due to the change in the Malaysian Stock Exchange listing requirements requiring listed companies in Malaysia to disclose in their annual reports the Statement of Internal Control and the Statement of Corporate Governance from 2001 onwards. Malaysian companies were voluntarily making more disclosures in their annual reports relating to their risk management strategies and policies, knowing that this information had to be made public through other reporting channels. Thus, in addition to the anticipation of the introduction of MASB 24, the mandatory requirements relating to the Statement of Internal Control and the Statement of Corporate Governance by the Malaysian Stock Exchange triggered the voluntary disclosure of information relating to risk management strategies.

Turning to the effects of proprietary costs, findings from the study suggest that firms' growth opportunities have some influence in limiting the voluntary disclosure of proprietary information in the unregulated period. Firms with high investment growth opportunities disclose less proprietary information in the pre-regulation years. H4 is accepted for the pre-regulation period. This confirms the fact that firms with higher investment growth opportunities will have more to lose to competitors if they disclose more information relating to their financial instruments in the pre-regulation period. This result provides a contribution to the 'disclosure principle' theory (Grosman, 1981; Milgrom, 1981) which states that a seller will transmit all information, both good and bad, when it is costless, as buyers would put the worst interpretation on non-disclosure. However, this disclosure principle has been disputed in the literature. Wagenhofer (1990) argues that the existence of proprietary costs does not necessarily imply non-disclosure. This depends on the conditions of the seller and the information market. In this study, it is found that the presence of proprietary costs will tend to cause non-disclosure by the holder of proprietary information (i.e. the disclosure principle is upheld) in an unregulated information market. However, in a regulated market (i.e., post-AASB 1033), it is found that the presence of proprietary costs is not sufficient to cause non-disclosure. Perhaps the reason is that corporate management revises their belief about investors and analysts who would now have heightened concern about non-disclosure and place an even worse interpretation on non-disclosure in an environment of greater mandatory disclosure. The size of the growth firms is also significant in influencing voluntary disclosure decisions. Thus, H5 is accepted. Smaller growth companies are more reluctant to voluntarily disclose proprietary information for fear that the disclosure of such information will reduce the value of their investment growth opportunities since they will have less capacity than large companies to protect their markets from other entrants. This finding supports the argument by Verrecchia (1983), that there is a threshold to voluntary disclosure of proprietary information, depending on the expected size of proprietary costs. In this finding the threshold is higher for smaller firms because they more readily incur proprietary costs than larger firms.

However, firms' hedging strategies seem to have no influence on management's voluntary disclosure of proprietary information relating to financial instruments. H6 is therefore rejected. However, analysis by industry group indicates that there is a significant difference in the means for three of the four industry groups investigated.

For *Materials, Energy and Consumer Staples*, corporate hedging has a significant influence on management's disclosure decisions. While *Industrials* reveals no relationship between the level of voluntary disclosure of proprietary information for firms that do and do not hedge, an explanation could be that for this industry those firms that do hedge have not considered this practice to be a sufficient component of their risk management to affect their voluntary disclosure decisions.

For the impact of political costs on the voluntary disclosure of information relating to financial instruments, company size has a positive effect in influencing voluntary disclosures. In fact, the influence of company size on voluntary disclosure is seen to be unaffected by regulation. This result further confirms prior empirical evidence that a positive association exists between size and political costs. The political cost hypothesis is a strong explanation in this study of the effects of public exposure by firms on voluntary disclosure of financial instruments-related information.

The second factor associated with political costs is the financial condition of firms as measured by the probability of firms facing financial distress. Financial distress was revealed as having no influence on voluntary disclosure. Prior research has produced mixed results about the influence of leverage and financial distress on voluntary disclosure. For example, Chalmers & Godfrey (2004) find no significant relationship between leverage and voluntary disclosure of derivative financial instruments. This study also finds no relationship. The high negative media attention in 1995 and 1996 due to the collapse of Barings Bank in 1995 has an influence on management's decision to voluntarily disclose more information relating to financial instruments during the same period. However, this influence was moderated by the effect of the impending introduction of AASB 1033. The evidence in this study, after allowing for the moderating effect of anticipated regulation, is that firms have taken action in the form of greater voluntary disclosure of financial instruments information in response to the threat to their legitimacy of the Barings Bank publicity, and to avoid incurring political costs.

Finally, results of the combined model indicate that investment growth opportunities, (for the effect of proprietary costs) in the unregulated period, and company size (for the effect of political costs) dominate the regression. This evidence suggests that

management of companies that have sufficient size to be concerned with public scrutiny and sufficient growth opportunities to be concerned with actions of competitors, will make a trade-off decision between greater or lesser voluntary disclosure of financial instruments-related information. 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.

6.4 Implications for Theory and Practice

As previously explained, hypotheses in this study have been generated from broader underpinning theories, including the disclosure principle, signalling theory, proprietary cost principle, legitimacy theory, the media agenda-setting theory and the political cost hypothesis. Testing for the robustness of these hypotheses from this range of theoretical perspectives has not been previously undertaken in a single corporate disclosure study. Therefore, this study provides a step forward by combining theoretical models of voluntary disclosure in a single study on voluntary corporate disclosure. In particular, the study addresses the comparative trade-off between holding back proprietary information (as rationalized by signalling theory and the proprietary cost principle) and providing all types of information (as rationalized by legitimacy theory and the political cost hypothesis). The body of empirical disclosure studies that have adopted a legitimacy theory and political cost perspective have predominantly ignored the signalling theory and proprietary cost perspective, and vice versa. This study contributes evidence from these dual perspectives.

This study uncovers important information concerning voluntary corporate disclosure relating to financial instruments, especially disclosure relating to derivative usage, which has practical implications. The practical implications arising from the findings of this study are significant. For instance, even though there were some disclosures made by companies with regard to their use of financial instruments in the unregulated disclosure period to signal their quality, findings from this study indicate that the decision to introduce an accounting standard on financial instruments disclosure has resulted in companies increasing their voluntary disclosure of related information and information relating to the proposed mandatory disclosure items. Thus, the mandatory disclosure requirements relating to financial instruments have precipitated an

improvement in the amount of voluntary disclosure and comprehensiveness of mandatory items of disclosure. Even though the introduction of an accounting standard on presentation and disclosure of financial instruments proved to be challenging to standard setters who faced fierce criticisms and resistance, findings from this study suggest that it is beneficial to have an accounting standard on financial instruments disclosure, as it not only results in disclosure relating to the mandatory disclosure items but triggers the voluntary disclosure of related proprietary information.

This study also finds that proprietary costs have a limiting effect on voluntary disclosure, particularly in the unregulated disclosure environment. Consistent with prior studies, this study provides support for the political costs hypothesis, legitimacy theory and the media agenda-setting theory in promoting voluntary corporate disclosure. The results of the hypotheses tests have provided an increased understanding of the factors that influence corporate financial disclosure strategies with reference to disclosure relating to financial instruments. These results should be of much interest to corporate management, regulators, investors, and others interested in factors influencing financial instruments disclosure. This greater understanding can translate into improved decision making for these three main financial statement user groups:

(1) Corporate management: Internal management will better understand the current factors driving voluntary disclosure of financial instruments information amongst competitor companies in their industry. This should strengthen their ability to model the complex and subjective elements of proprietary and political costs when reaching strategic decisions on disclosures in this area.

(2) Regulators: The findings should be of interest to accounting standard setters. The findings can provide a timely check on the implemented AASB 1033 and MASB 24. In particular, the findings from this study can assist these standard setting boards in determining the effectiveness of the mandatory disclosure requirements and the effects of mandatory disclosure requirements on voluntary disclosure. This is a crucial issue because accounting standards boards need to know the extent to which they may be mandating disclosures which reporting entities would normally adopt voluntarily due to rational market and societal forces. At the least, the findings will provide the AASB and MASB with enhanced understanding that

Australian and Malaysian reporting entities disclosure of financial instruments information is regulatory driven, and that the introduction of the mandatory disclosure requirements is warranted.

(3) Investors: Sophisticated investors will be aware that firms may use annual reports as a means of influencing society's perception of their operation, and as a means of legitimising their ongoing existence. The findings in this study can contribute to investors' understanding of what motivates managers to make voluntary disclosures. The findings will also give an insight to the sensitivity of firms to the active monitoring by their investors, as proxied by their media visibility, when determining their voluntary disclosure reporting strategy.

6.5 Limitations of the Study

The findings and conclusions from this study need to be read with caution because of the following limitations:

6.5.1 Limitations Embodied in the Selected Theories

There are limitations surrounding the nature and scope of the theories selected in this study. Aspects of disclosure principle, signalling theory, proprietary cost perspective, legitimacy theory, media agenda-setting theory and political cost hypothesis, which are relied upon in this study, are not devoid of criticisms or conflicting arguments. For example, the disclosure principle suggests that managers of firms will release all information they possess regardless of whether the information is good or bad, as the disclosure principle assumes that disclosure is costless. This assumption is not strictly applicable in practice, as there will normally be costs that will be incurred by companies as a result of disclosure, or as a result of non-disclosure.

For signalling theory, Newman & Sansing (1993) caution about the validity of signals provided by firms to disclose their type, as they may not be fully truthful. Thus, even though signalling theory posits that firms will voluntarily disclose additional information to signal their quality type, such additional information provided by managers may not be truthful information. Furthermore, prior researchers such as Leland & Pyle (1977) dismissed the use of direct disclosure by companies as credible signals because of the moral hazard problem attributed to such disclosure.

In terms of proprietary costs, the models developed by Grossman (1981), Milgrom (1981), Dye (1986) and Verrecchia (1983) consider proprietary costs as being exogenous disclosure costs that arise when a firm discloses proprietary information. However, Wagenhofer (1990) argues that a firm will still incur proprietary costs if it does not disclose information as competitors might take an adverse action because of the non-disclosure. He argues that by disclosing a firm can avoid incurring proprietary costs if the information disclosed deters the competitors from taking adverse action. Thus, there are conflicting arguments in the proprietary costs perspectives as to when firms will incur proprietary costs. This may affect management's decisions to voluntarily disclose proprietary information.

In terms of legitimacy theory, Shocker & Sethi (1974) posit that legitimacy theory assumes that there is a social contract either expressed or implied between organizations and society. Therefore, in order to remain legitimate, companies need to fulfil these social contracts. However, as suggested by Deegan (2001) legitimacy theory does not take into consideration the economics-based assumption that companies' actions may be driven by their self-interest in order to maximise their wealth. Thus, companies may voluntarily disclose information not to fulfil their social contract and remain legitimate, but to maximise their wealth.

The media agenda setting theory takes the perspective that widespread media coverage about an incident has the ability to influence or shape society perceptions about a particular issue. This is because the constant emphasising of the issue by the media makes the issue more important to the public. However, there may be situations where the reaction by the public towards an issue is more related to their direct experience of the issue than to exposure to the issue by the news media (Gross & Aday, 2003). Thus, companies may make additional voluntary disclosure because of their direct experience of the issue rather than because of negative media coverage.

Political cost hypothesis generally takes the view that firms which are politically visible are more likely to increase their disclosure in order to avoid incurring political costs. However, Aggarwal & Simkins (2004) argue that firms that are large and politically sensitive will voluntarily disclose less information about their hedging strategies in order to reduce the impact of political costs. They provide evidence that large firms, and

firms that are leaders in their industry, voluntarily disclose less information relating to currency derivatives. Thus, in terms of voluntary corporate disclosure there seem to be some conflicting arguments concerning whether firms would voluntarily disclose more or less information in order to avoid incurring political costs.

6.5.2 Limitations of Data Collection

The extraction of data relating to the voluntary corporate disclosure of financial instruments-related information in this study is 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. There is support for the method of capturing data only from a corporate annual report (Botosan, 1997; Gray et al., 1995; Guthrie et al., 2004; Guthrie & Petty, 2000; Lang & Lundholm, 1993; Wilmshurst & Frost, 2000). Prior studies on disclosure relating to financial instruments have also focused their investigations on the content analysis of annual reports. Thus, in the area of voluntary corporate reporting relating to the disclosure of financial instruments, the use of content analysis of companies' annual reports to measure the extent of mandatory and voluntary disclosure is justified and empirically valid. In addition, the disclosure of information relating to the use of financial instruments is normally made by companies through their annual reports. However, if there are voluntary disclosures made by companies relating to financial instruments in other forms, such disclosures are not included in this study.

In the data collection phase, in extracting the mandatory and voluntary disclosure items from companies' annual reports, the requirements of AASB 1033 and MASB 24 are used to identify the mandatory disclosure items. However, due to the provisions of the standards that encourage further elaborations on financial instruments disclosure especially regarding the use of derivative financial instruments, certain disclosures that are voluntary in nature may be included and elaborated under the headings of the mandatory disclosure items, making the segregation between mandatory and voluntary items difficult. Thus, the segregation of these items into mandatory and voluntary involves an element of subjectivity. As suggested by Zeghal & Ahmed (1990) one of the major limitations of content analysis is that there is an element of subjectivity involved in determining what constitutes a particular type of disclosure. However, the categorization of the disclosure items in this study into 7 mandatory items and 33

voluntary items substantially reduces the element of subjectivity involved in the categorization process. Furthermore, the use of a second reviewer to review a sample of the data to assess their reliability and accuracy further reduces any inconsistencies that may arise due to subjective interpretation.

In searching for voluntary disclosure items relating to financial instruments, 33 items were identified under 5 categories. The 33 items identified under the 5 categories may not be exhaustive. Thus, there may be other voluntary disclosures relating to financial instruments made by companies that are not included in the analysis, as they do not fit into any of the categories and items identified in this study.

In weighting the voluntary disclosure items based on the proprietariness of the items disclosed, a survey involving a panel of experts was used. Thus, there are limitations in the study due to the design and administration of the survey. The reliability of data collected from field surveys depends largely on the design and administration of the questionnaire. It is important that questionnaires are comprehensible to ensure internal validity. In ensuring proper design of the questionnaire, the items contained in the questionnaire were mostly drawn from the accounting standard on financial instruments disclosure, and from previous studies by Taylor & Redpath (2000). To ensure comprehensibility of the questionnaire, the questionnaires were initially distributed to securities analysts who were interviewed to ensure that all items were relevant and comprehensible to the respondents. Furthermore, the fact that the survey targeted 'experts' reduces the problem of incomprehensibility of the items contained in the questionnaire. However, there is the problem of perceptual difference between people and groups, which is a major limitation of surveys. According to Lau & Shani (1988) no one perceives with complete objectivity. Rather, the determinants of perception are in operation all the time. In addition, the use of expert opinion in itself has limitations. As suggested by Evans & Crawford (2000) there is the problem of accuracy and generalisability of estimates from using expert opinion. There may also be limitations due to respondent biases.

6.5.3 Limitations of Data Analysis

The use in this study of the fixed effects model for panel data analysis precludes the analysis of time-invariant variables as the fixed effects regression model removes all

time-invariant variables from the regression analysis. The only way to estimate the coefficients for these time-invariant variables is by interacting these variables with a time dummy variable. In this study, the effect of industry can only be investigated by interacting the variable with a time dummy variable y19982000. Otherwise, the coefficients of this time-invariant variable cannot be estimated during the regression analysis.

In Table 39 and Table 41 the Durbin-Watson statistics for the two-regression analyses are slightly below 1.5, suggesting the presence of a mild first-order serial correlation. However, the presence of a mild first-order serial correlation will not cause bias or inconsistencies in the fixed effects estimator.

6.5.4 Limitations of Scope in Interpreting the Results

The results in this study must be interpreted based on investigation of voluntary corporate disclosure relating to financial instruments made through companies' annual reports, and within the confines of the hypotheses that have been generated. Possibilities exist for alternative investigation of other reporting mediums, or for having alternative specifications of hypotheses or alternative choice of surrogate variables. For example, in this study, proprietary costs cannot be measured directly, therefore proxies were used to measure proprietary costs. The interpretation of the results is subject to the assumption that the proxy variables used are reliable indicators of proprietary costs.

In addition, the conclusions drawn from this study are based on the disclosure standard relating to financial instruments, where for this particular standard the determination of the level of detail to be disclosed about particular financial instruments is left to the judgment of each particular entity, taking into account the relative significance of each instrument. This standard gives management the discretion of deciding on the extent of disclosure to be made, in addition to disclosing the required minimum level of disclosure.

For the variable corporate hedging strategies, even though results of this study indicate that it is not significant in influencing voluntary disclosure of proprietary information, the data for this variable in the unregulated period were mostly not available. Because of lack of data and inconsistencies in the way companies provide the data, the

conclusions drawn for this variable, especially in the unregulated disclosure environment, need to be interpreted with caution.

The interpretations and conclusions drawn from the Malaysian data are based solely on descriptive statistics and univariate tests, as the purpose of the preliminary investigation is only to obtain an initial insight on the relationship between mandatory and voluntary disclosure of financial instruments-related information in an emerging capital market. Thus, the conclusions drawn from the Malaysian study must be interpreted with caution.

Finally, as with any empirical studies, the results can be generalised only to the population from which the sample is drawn. For the Australian data, since the sample was taken from the top 500 companies, it is biased towards larger companies in Australia.

6.6 Directions for Future Research

This study generates many possibilities for further research. These possibilities include further empirical research by replicating the conceptual model in other research settings, extending the research methodology by using triangulation method, analysing the data at a micro-level, comparing the findings from this study with other disclosure standards that are more restrictive, or further investigating the offsetting effects of proprietary and political costs on voluntary corporate disclosure.

The conceptual framework modelled in this study can be applied to investigate voluntary corporate disclosure relating to financial instruments in other countries, or it can be applied to investigate other disclosure standards. The accounting standard on financial instruments disclosure in other countries and other accounting standards on disclosure such as AASB 114 on Segment Reporting can be investigated by replicating the conceptual model in this study. The international convergence of accounting standards, which involves an outright adoption of all International Standards, starting in 2005 in Australia, Malaysia and EU countries (except in the EU for consolidated annual accounts which start from 2007), will enable the application of the conceptual model across countries as the standards are now similar. Thus, theories underlying voluntary corporate disclosure practices used in this study can be investigated in different settings to provide evidence of the robustness of the theories. Furthermore, with the

international convergence, new accounting standards on disclosure will be introduced, such as the recent introduction of IFRS 1 on Presentation of Financial Statements, creating a pre- and post regulation period, which can be investigated using the conceptual framework modelled in this study. More evidence is needed based on other disclosure standards in other countries or based on financial instruments disclosure standards in other countries before any generalisation of the findings from this study can be made.

In addition to applying the conceptual framework to studies on voluntary corporate disclosure, the conceptual framework in this study can also be applied to studies on corporate governance. For example, in recent years stock exchanges in most countries have revamped their stock exchange listing requirements, requiring listed companies to expressly describe the extent of compliance or provide alternative measures in areas where there is non-compliance of the Code of Corporate Governance. The theories and conceptual model in this study can be extended to investigate the effect of these listing requirements on the voluntary corporate disclosure of related information.

The preliminary investigation of Malaysian companies' disclosures undertaken in this study can be further expanded by increasing the period of study, the sample size, and incorporating the effects of proprietary and political costs on voluntary corporate disclosure decisions. Results of the investigation will provide further clarity regarding voluntary corporate disclosure practices of companies in an emerging capital market.

In terms of research methodology, further research can use triangulation method to collect data in order to assess arguments for management's incentives to voluntarily disclose corporate information. In addition to extracting voluntary disclosures from annual reports, other source documents can be examined or interviews can be conducted with managers who are responsible for making disclosure decisions in order to gain some insights on their views and incentives for making voluntary corporate disclosures.

A micro-level analysis of existing data collected for this study could be further undertaken. This could take the form of identification of 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. It would also be useful for future

research to focus on understanding 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.

Finally, further studies need to be carried out to obtain empirical evidence about the offsetting effects of proprietary costs and political costs on management's incentives to voluntarily disclose corporate information. There is a paucity of empirical evidence, especially on the impact of proprietary costs on voluntary corporate disclosure decisions, as prior literature is mostly theoretical in nature. The robustness of these theoretical models needs to be empirically investigated.

Appendix 1

List of Sample Companies for the Australian Study by GICS Industry Classification

Appendix 1

List of Sample Companies for the Australian Study by GICS Industry Classification

Industry Classification	Name of Companies
(1) ***Energy***	(1) Australian Oil & Gas Corporation Ltd (AOG)
	(2) Bligh Oil & Minerals NL (BLO)
	(3) Central Pacific Mineral NL (CPM)
	(4) Caltex Australia Ltd (CTX)
	(5) Magellan Petroleum Australia Ltd (MAG)
	(6) Novus Petroleum Ltd (NVS)
	(7) Oil Company of Australia Ltd (OCA)
	(8) Oil Search Ltd (OSH)
	(9) Petroz NL (PTZ)
	(10) Southern Pacific Petroleum NL (SPP)
	(11) Santos Ltd (STO)
	(12) Woodside Petroleum Ltd (WPL)
(2) Materials *Chemicals*	
	(1) Asia Pacific Specialty Chemicals Ltd (APY)
	(2) Incitec Ltd (ICT)
	(3) Wattyl Ltd (WYL)
	(4) Arthur Yates & Co Ltd (YTS)
Construction Materials	
	(5) Adelaide Brighton Ltd (ABC)
	(6) Brickworks Ltd (BKW)
	(7) CSR Ltd (CSR)
Containers and Packaging	
	(8) Amcor Ltd (AMC)
	(9) National Can Industries Ltd (NCI)
Metals and Mining	
	(10) Anaconda Nickel Ltd (ANL)
	(11) Aurora Gold Ltd (AUG)
	(12) BHP Ltd (BHP)
	(13) Capral Aluminium Ltd (CAA)
	(14) CIM Resources Ltd (CIM)
	(15) Cumnock Coal Ltd (CMK)
	(16) Coal & Allied Industries Ltd (CNA)
	(17) Central Norseman Gold Corporation Ltd (CNG)
	(18) Consolidated Rutile Ltd (CRT)
	(19) Centaur And Exploration Ltd (CTR)
	(20) Delta Gold Ltd (DGD)
	(21) Emperor Mines Ltd (EMP)
	(22) Equatorial Mining NL (EQM)
	(23) Energy Resources of Australia Ltd (ERA)
	(24) Haoma Mining NL (HAO)
	(25) Johnson's Well Mining NL (JWM)
	(26) Kidston Gold Mines Ltd (KGM)

Appendix 1 (continued)

Industry Classification	**Name of Companies**
Metals and Mining	(27) MIM Holdings Ltd (MIM)
	(28) Newcrest Mining Ltd (NCM)
	(29) Normandy NFM Ltd (NFM)
	(30) Pasminco Ltd (PAS)
Paper and Forest Products	
	(31) Auspine Ltd (ANE)
	(32) Carter Holt Harvey Ltd (CHY)
	(33) CPI Group Ltd (CPI)
	(34) Gunns Ltd (GNS)
(3) Industrials *Capital Goods*	
	(1) Austrim Nylex Ltd (ARL)
	(2) Crane Group Ltd (CRG)
	(3) GWA International Ltd (GWT)
	(4) Leighton Holdings Ltd (LEI)
	(5) Macmahon Holdings Ltd (MAH)
	(6) Reece Australia Ltd (REH)
	(7) Wesfarmers Ltd (WES)
Commercial Services and Supplies	
	(8) Ausdoc Group Ltd (AUD)
	(9) Brambles Industries Ltd (BIL)
	(10) Skilled Engineering Ltd (SKE)
Transportation	
	(11) Finemore Holdings Ltd (FMH)
	(12) Qantas Airways Ltd (QAN)
(4) Consumer Staples *Food and Staples Retailing*	
	(1) Coles Myers Ltd (CML)
	(2) Foodland Associated Ltd (FOA)
	(3) Woolworths Ltd (WOW)
Food Beverage and Tobacco	
	(4) Burns, Philp & Company Ltd (BPC)
	(5) Coca-cola Amatil Ltd (CCL)
	(6) Futuris Corporation Ltd (FCL)
	(7) Green's Food Ltd (GFD)
	(8) Lion Nathan Ltd (LNN)
	(9) Petaluma Ltd (PLM)
	(10) Queensland Cotton Hldgs Ltd (QCH)
	(11) Southcorp Ltd (SRP)
	(12) Joe White Maltings Ltd (WJM)

Total Number of Sample Companies by GICS industry classification

(1) Energy	12
(2) Materials	34
(3) Industrials	12
(4) Consumer Staples	12
Total	70

Appendix 2

List of Sample Companies for the Malaysian Study by Sectors

Appendix 2

List of Sample Companies for the Malaysian Study by Sectors

(Companies Listed on the Main Board of the Malaysian Stock Exchange)

Sector	Name of Companies
(1) Industrial Products	
	(1) Aluminium Company Malaysia Bhd (Alcom)
	(2) Cement Industries of Malaysia Bhd (CIMA)
	(3) Chemical Company of Malaysia Bhd (CCM)
	(4) Malayan Cement Bhd
	(5) Petronas Gas Bhd
	(6) Shell Refining Company (Federation of Malaya) Bhd
	(7) Tractors Malaysia Holdings Bhd
(2) Plantation	
	(1) Batu Kawan Bhd
	(2) Golden Hope Plantations Bhd
	(3) IOI Corporation Bhd
	(4) Kulim (Malaysia) Bhd
	(5) Kumpulan Guthrie Bhd
	(6) TH Group Bhd
	(7) United Plantations Bhd
(3) Consumer Products	
	(1) British American Tobacco (Malaysia) Bhd
	(2) FFM Bhd
	(3) Hong Leong Industries Bhd
	(4) Nestle (Malaysia) Bhd
	(5) Matshushita Electric Company (Malaysia) Bhd
	(6) Perusahaan Otomobil Nasional Bhd (PROTON)
	(7) UMW Holdings Bhd

Total Number of Sample Companies by Sectors

(1) Industrial Products	7
(2) Plantation	7
(3) Consumer Products	7
Total	21

Appendix 3

Components of Mandatory Disclosure as Required by AASB 1033

Appendix 3

Components of Mandatory Disclosure as Required by AASB 1033

Disclosure Items (Groups)

Information	AASB 1033 (para)
(1) Disclosure of Terms, Conditions and Accounting Policies	
• Accounting policies, methods adopted, criteria for recognition, basis of measurement applied for each class of its recognised financial assets, financial liability and equity instrument	5.2 (a)
• Accounting policies, methods adopted, criteria for recognition, basis of measurement applied for financial instruments acquired as hedges of risk exposure	5.2 (a)
• Basis on which revenues and expenses arising from financial assets, financial liabilities and equity instruments are recognised and measured	5.2 (a)
• Accounting policies on transfers of financial assets when there is a continuing interest in, or involvement with, the assets by the transferor	5.2.8
• Accounting policies on acquisition or issuance of separate financial instruments as part of a series of transactions designed to synthesise the effect of acquiring or issuing a single instrument	5.2.8
• Accounting policies on acquisition or issuance of financial instruments as hedges of risk exposure and	5.2.8
• Accounting policies on acquisition or issuance of monetary financial instruments bearing a stated interest rate that differs from the prevailing market rate at the date of issue	5.2.8
• Principal, stated, face, notional amount on which future payments are based	5.2.2
• Stated rate or amount of interest, dividend or other periodic return on principal and the timing of payments	
• The date of maturity, expiry or execution	
• Collateral held (financial asset) or pledged (financial liability)	
• For instrument that provide for an exchange the terms and conditions for instrument to be acquired in the exchange	
• Reconciliation of the presentation of a financial instrument in the statement of financial position to their legal form if they differ	5.2.5
(2) Disclosure of Objectives of Derivative Financial Instruments	
• Information on objectives for holding or issuing derivative financial instruments	5.3
• Information on strategies for achieving the objectives of holding or issuing derivative financial instruments	5.3

Appendix 3 (continued)

Components of Mandatory Disclosure as Required by AASB 1033

Disclosure Items (Groups)

Information	AASB 1033 (para)
• Information on the financial risks faced by the entity of holding or issuing derivative financial instruments	5.3
(3) Interest Rate Risk Disclosures	
• Information about the entity's exposure to interest rate risk for each class of its financial asset and financial liability, both recognised and unrecognised	5.4
• Information on contractual repricing or maturity dates, whichever dates are earlier	5.4 (a)
• Information on effective interest rates or the weighted average effective interest rate	5.4 (b)
(4) Credit Risk Disclosures	
• Information about exposure to credit risk for each class of its financial asset (recognised and unrecognised)	5.5
• Information on the amount that best represents its maximum credit risk exposure at the reporting date (without collateral/security)	5.5(a)
• Information in respect of concentrations of credit risk that arise from exposure to a single debtor or to a group of debtors having similar characteristics	5.5(b)
(5) Net Fair Value Disclosures	
• Information about the aggregate net fair value at reporting date for each class of its financial asset and financial liability (recognised and unrecognised)	5.6 (a)
• Information on the method/methods adopted in determining net fair value	5.6 (b), (c)
• Information on any significant assumptions made in determining net fair value	5.6 (c)
(6) Disclosure of Financial Assets Carried at an Amount in Excess of Net Fair Value	
• Information on the carrying amount and the net fair value either individually or by appropriate groupings when one or more financial assets are recognised at an amount in excess of their net fair value	5.7 (a)
• Reasons for not reducing the carrying amount including the evidence that provides the basis for management's belief that the carrying value will be recovered	5.7 (b)

Appendix 3 (continued)

Components of Mandatory Disclosure as Required by AASB 1033

Disclosure Items (Groups)

Information	AASB 1033 (para)
(7) Disclosure of Hedges of Anticipated Future Transactions	
• Description of the anticipated transactions, including the period of time until they are expected to occur	5.8 (a)
• Description of the hedging instruments	5.8 (b)
• The amount of any deferred or unrecognised gain/loss and the expected timing of recognition as revenue or expense for its hedge instruments	5.8 (c)
(8) Disclosure of Commodity Contracts Regarded as Financial Instruments	
• Information on contracts for delivery of gold	5.9 (a), (b)
• Information on other contracts normally settled other than by physical delivery in accordance with general market practice, despite the contract terms requiring physical delivery	

Appendix 4

Components of Mandatory Disclosure as Required by MASB 24

Appendix 4

Components of Mandatory Disclosure as Required by MASB 24

Disclosure Items (Groups) Information	MASB 24 (para)
(1) Disclosure of Risk Management Policies	
• Information on its financial risk management objectives and policies	49
• Information on company's policy for hedging each major type of forecasted transaction for which hedge accounting is used	49
(2) Terms, Conditions and Accounting Policies	
• Information about the extent and nature of the financial instruments	55(a)
• Information on significant terms and conditions that may affect the amount, timing and certainty of future cash flows	55(a)
• Accounting policies, methods adopted, criteria for recognition, basis of measurement applied for financial instruments acquired as hedges of risk exposure	55(b)
• Principal, stated, face, notional amount on which future payments are based	57(a)
• Date of maturity, expiry or execution	57(b)
• Early settlement options	57(c)
• Options held	57(d)
• Amount and timing of scheduled future cash receipts or payments of the principal amount of the instrument, including instalment repayments and any sinking fund or similar requirements	57(e)
• Stated rate or amount of interest, dividend or other periodic return on principal and timing of payments	57(f)
• Collateral held (financial asset) or pledged (financial liability)	57(g)
• For instruments that are denominated in foreign currency, the currency in which receipts or payments are required	57(h)
• For instrument that provide for an exchange the terms and conditions for instrument to be acquired in the exchange	57(i)
• Any condition of the instrument or an associated covenant that, if contravened would significantly alter any of the other items	57(j)
• Reconciliation of the presentation of a financial instrument in the statement of financial position to their legal form if they differ	58
(3) Interest Rate Risk	
• Information about the entity's exposure to interest rate risk for each class of its financial asset and financial liability, both recognised and unrecognised	64
• Information on contractual repricing or maturity dates, whichever dates are earlier	64(a)
• Information on effective interest rates when applicable	64(b)

Appendix 4 (continued)

Components of Mandatory Disclosure as Required by MASB 24

Disclosure Items (Groups) Information	**MASB 24**
(4) Credit Risk	
• Information about exposure to credit risk for each class of its financial asset (recognised and unrecognised)	74
• Information on the amount that best represents its maximum credit risk exposure at the balance sheet date (without collateral)	74(a)
• Information on significant concentrations of credit risk	74(b)
(5) Fair Value	
• Information about the fair value for each class of its financial asset and financial liability (recognised and unrecognised)	86
• Information that it is not practicable to determine fair value of financial asset or financial liability when fair value cannot be determined with sufficient reliability	86
• Information about the principal characteristics of the underlying financial instrument that are pertinent to its fair value	86
(6) Financial Assets Carried at an Amount in Excess of Fair Value	
• Information on the carrying amount and the fair value either individually or by appropriate groupings when one or more financial assets are carried at an amount in excess of their fair value	97(a)
• Reasons for not reducing the carrying amount including the evidence that provides the basis for management's belief that the carrying value will be recovered	97(b)
(7) Hedges of Anticipated Future Transactions	
• Description of the anticipated transactions, including the period of time until they are expected to occur	100(a)
• Description of the hedging instruments	100(b)
• The amount of any deferred or unrecognised gain/loss and the expected timing of recognition as income or expense	100(c)

Appendix 5

Categories and Items of Mandatory and Voluntary Disclosures

Appendix 5

Categories and Items of Mandatory and Voluntary Disclosures

Name of Company: _____ **GICS Industry Classification:** _____

Mandatory Disclosure Items

Year		1995	1996	1997	1998	1999	2000
Disclosure and Discussion of the Extent and Nature of Financial Derivatives Used (including the principal, stated, face, notional amounts, stated rate or amount of interest, dividend or other periodic return on principal and timing of payments, date of maturity, collateral held for financial assets or pledges for financial liabilities) including hedges of anticipated future transactions	**M1**						
Accounting Policies Disclosure of the accounting policies and methods adopted for financial derivatives	**M2**						
Disclosure and Discussion of the associated risks and the business purposes served by using hedging instruments Discussion of firm's exposure to interest rate risk (including contractual repricing or maturity dates and effective interest rate or weighted average effective interest rate) and the hedging instruments used to mitigate the risk	**M3.1**						
Discussion of firm's exposure to credit risk (including the maximum exposure and concentration of credit risk)	**M3.2**						
Discussion of firm's exposure to commodity price risk and the hedging instruments used to mitigate this risk	**M3.3**						
Disclosure of the Net Fair Value of Financial Instruments Used Disclosure of the aggregate net fair value of financial assets and financial liabilities and the methods adopted in determining net fair value	**M4.0**						
Objectives for holding or issuing derivatives (context needed to understand objectives, strategies for achieving objectives, including financial risks faced by entity)	**M5.0**						

Voluntary Disclosure Items

Year		1995	1996	1997	1998	1999	2000
Discussion of Risk Management Strategies and Policies Relating to Financial Instruments							
Discussion of the firm's risk management and treasury policies	**V1.1**						
Discussion of management's specific financial control policies to monitor the risks associated with financial instruments	**V1.2**						
Discussion of liquidity management and how the firm monitors and controls the associated risks	**V1.3**						
Discussion of the firm's policy in monitoring and controlling price, market, business, cash flow risks	**V1.4**						
Discussion of firm's foreign exchange risk management and the hedging instruments used to mitigate this risk	**V1.5**						
Summary of Historical Information Relevant to Financial Instrument							
Summary of past exchange rates	**V2.1**						
Summary of past commodities sales	**V2.2**						
Summary of past market prices of tradable commodities	**V2.3**						
Summary of past realized prices on settlement of contracts	**V2.4**						
Summary of past hedging gains and losses	**V2.5**						
Summary of past market interest rates	**V2.6**						

Appendix 5 (continued)

Categories and Items of Mandatory and Voluntary Disclosures

Year		1995	1996	1997	1998	1999	2000
Summary of past contractual prices	V2.7						
Key Information Relevant to Financial Instrument Average aggregate principal/stated/ notional amount for unrecognised financial derivatives	V3.1						
Information on the maturity profile of the carrying amount of financial liabilities	V3.2						
Information on any material undrawn committed borrowing facilities	V3.3						
The aggregate change in net fair value recognised as a revenue or an expense for financial assets and financial liabilities	V3.4						
The aggregate positive fair value and, separately, the aggregate negative fair value for financial assets and financial liabilities disclosed at fair value	V3.5						
The total average net fair value for financial assets, financial liabilities and unrecognised financial items, respectively	V3.6						
The average aggregate carrying amount of recognised financial assets and financial liabilities	V3.7						
Total amount of deferred or unrecognised gains or losses on hedging (other than for hedges of anticipated future transactions)	V3.8						
Projected Information							
Cash flow forecast	V4.1						
Profit forecast	V4.2						
Sales forecast	V4.3						
Forecast of future levels of production	V4.4						
Forecast of future market share	V4.5						
Forecast sales at current balance sheet date on contracts held but to be settled in the future	V4.6						
Management discussion and Analysis							
Effect of a hypothetical change in the prevailing level of market interest rates on the net fair value of financial instruments	V5.1						
Effect of a hypothetical change in the prevailing level of market interest rates on future financial performance of the firm	V5.2						
Effect of a hypothetical change in the prevailing level of market interest rates on the cash flow of the firm	V5.3						
The probability of losses arising from credit risk in the future	V5.4						
The sensitivity of equity or revenues and expenses to several possible changes in market prices	V5.5						
The entity's value at risk or aggregate value at risk from derivative financial instruments	V5.6						
The adequacy of collateral or other security held assuming a default had occurred, including its net fair value	V5.7						

Appendix 6

Keywords Used to Search for Items of Disclosure

Appendix 6

Keywords Used to Search for Items of Disclosure

1. Derivative	34. Revenue
2. Financial instrument	35. Earning
3. Risk	36. Realised price
4. Risk management	37. Hedging gain
5. Net fair value	38. Hedging loss
6. Objective	39. Interest rate
7. Treasury	40.Cash flow
8. Average aggregate	41. Profit
9. Maturity	42. Margin
10. Undrawn	43. Forecast
11.Unused	44. Production
12. Unutilised	45. Market share
13. Credit facilities	46. Contract
14. Financing facilities	47. Expected
15. Financing arrangements	48. Production growth
16. Risk assessment	49. Historical summary
17. Hedge	50. Historical information
18. Hedging	51. Statistical summary
19. Mature	52. Outlook
20. Maturing	53. Future
21. Maturity profile	54. Way ahead
22. Aggregate	55. Looking ahead
23. Total average	56. Profitability
24. Deferred	57. Equity
25. Unrecognised	58. Expenses
26. Change in interest rate	
27. Hypothetical	
28. Probability of loss	
29. Market price	
30. Collateral	
31. Default	
32. Exchange rate	
33. Sales	

Appendix 7

Sample Covering Letters Accompanying the Questionnaires

Appendix 7

Sample Covering Letters Accompanying the Questionnaire

THE UNIVERSITY OF ADELAIDE
AUSTRALIA

Professor Dennis W Taylor
Chair of Accounting
School of Commerce
Faculty of the Professions
THE UNIVERSITY OF ADELAIDE
SA 5005, AUSTRALIA
TELEPHONE +61 8 8303 5527
FACSIMILE +61 8 8303 4368
dennis.w.taylor@adelaide.edu.au
CRICOS Provider Number 00123M

Dear

I'm seeking your assistance in a research study on corporate disclosure relating to financial instruments before and after the introduction of the accounting standard "Presentation and Disclosure of Financial Instruments" (AASB 1033).

An integral aspect of this study is the obtaining of ratings by securities analysts of their perception of the extent to which various items of voluntary disclosure relating to financial instruments embody proprietary costs to the disclosing entity.

I would therefore be most grateful if a securities analyst from your company could complete the attached questionnaire. It should take no more than 20 minutes to complete. Kindly return the completed questionnaire in the reply envelope supplied. All information provided by your company will be treated in the strictest confidence. Your co-operation is greatly appreciated. A summary copy of the findings will be sent to the respondents in due course. Please endeavour to respond before 30 April 2004.

Thank you.

Yours sincerely

DENNIS TAYLOR
Professor of Accounting

Appendix 8

QUESTIONNAIRES TO SECURITIES ANALYSTS

Appendix 8
QUESTIONNAIRES TO SECURITIES ANALYSTS

Your co-operation in completing this questionnaire is greatly appreciated. The aim of this survey is to determine the perceived proprietary costs embodied in each voluntary disclosure item relating to financial instruments. There is no right or wrong answer but your careful consideration of each response, based on your own experiences is sought. All information will be treated in strict confidence, and only statistical aggregation will be reported.

Definitions

(1) Financial instruments as referred to by AASB 1033, would include primary financial instruments (such as cash, receivables, payables, bonds, shares) and derivatives (such as futures, forwards, options).

(2) Disclosure items: items of voluntary information in corporate annual reports that would be useful to users for decision making purposes beyond the minimum required by AASB 1033.

(3) Proprietary costs: These costs arise from voluntary disclosures of information by firms that are expected to reveal proprietary information that is not otherwise publicly available. The disclosing firm could face a competitive disadvantage caused by the reactions of competitors, suppliers, creditors etc as a result of the disclosure.

(4) Categories of information revealed by disclosure items:

- the entity's future cash flows
- the entity's strategic plans
- the risk exposure facing the business
- the entity's major contracts
- the entity's market outlook
- the entity's future liabilities
- the entity's asset values

(5) Scale of overall extent of usefulness to competitors (i.e. extent of proprietary cots such as potential loss of market share, loss of strategic effectiveness, exposed as a takeover target, competitive loss of future contracts)

Negligible costs	Some costs	Moderate costs	Considerable costs	High costs
1	2	3	4	5

Section I: Ratings of Proprietary Costs

Disclosure Items

Instructions:

For each row, tick one or more boxes AND circle a number	**Categories of information revealed (tick one or more boxes)**							**Overall extent of usefulness to competitors (proprietary costs) (circle a number)**
	Cash Flow	**Strat. Plan**	**Risk Expos**	**Cont-. racts**	**Mkt Outlook**	**Fin Liab.**	**Asset Values**	
1. Discussion to Elaborate the Basic Facts Concerning the Policy of Using Financial Instruments								**Negligible** 1 2 3 4 5 **High**
1.1 Discussion of the extent to which various types of financial instruments are used	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
1.2 Discussion of the associated risks and the business purposes served by using hedging instruments	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
1.3 Discussion of the firm's financial risk management and treasury policies as agreed by its directors	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
1.4 Discussion of management's policies on hedging of risk	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
1.5 Discussion of management's specific financial control policies to monitor the risks associated with financial instruments	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
1.6 Discussion of liquidity management and how the firm monitors and controls the associated risks	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
1.7 Discussion of the firm's policy in monitoring each type of risk (price, currency, interest rate, credit, liquidity, cash flow risk)	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5

Disclosure Items	Categories of information revealed (tick one or more boxes)							Overall extent of usefulness to competitors (proprietary costs) (circle a number)
	Cash Flow	Strat. Plan	Risk Expos	Cont-. racts	Mkt Outlook	Fin Liab.	Asset Values	Negligible 1 2 3 4 5 High
2. Summary of Historical Information Relevant to Financial Instrument								
2.1 Summary of past exchange rates	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
2.2 Summary of past commodities sales	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
2.3 Summary of past market prices of tradable commodities	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
2.4 Summary of past realized prices on settlement of contracts	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
2.5 Summary of past hedging gains and losses	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
2.6 Summary of past market interest rates	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
2.7 Summary of past contractual prices	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
3. Key Information Relevant to Financial Instrument in Addition to Mandated Key Information								
3.1 Average aggregate principal/stated/ notional amount for unrecognised financial assets and financial liabilities	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
3.2 Information on the maturity profile of the carrying amount of financial liabilities	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
3.3 Information on any material undrawn committed borrowing facilities	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5

Disclosure Items	Categories of information revealed (tick one or more boxes)							Overall extent of usefulness to competitors (proprietary costs) (circle a number)
	Cash Flow	Strat. Plan	Risk Expos	Cont-. racts	Mkt Outlook	Fin Liab.	Asset Values	Negligible 1 2 3 4 5 High
3.4 The aggregate change in net fair value recognised as a revenue or an expense for financial assets and financial liabilities	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
3.5 The aggregate positive fair value and, separately, the aggregate negative fair value for financial assets and financial liabilities disclosed at fair value	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
3.6 The total average net fair value for financial assets, financial liabilities and unrecognised financial items, respectively	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
3.7 The duration of the financial instruments	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
3.8 The average aggregate carrying amount of recognised financial assets and financial liabilities	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
3.9 Total amount of deferred or unrecognised gains or losses on hedging instruments (other than for hedges of anticipated future transactions)	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
4 Projected Information								
4.1 Cash flow forecast	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
4.2 Profit forecast	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
4.3 Sales forecast	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5

Disclosure Items	Categories of information revealed (tick one or more boxes)							Overall extent of usefulness to competitors (proprietary costs) (circle a number)
	Cash Flow	Strat. Plan	Risk Expos	Cont-. racts	Mkt Outlook	Fin Liab.	Asset Values	Negligible 1 2 3 4 5 High
4.4 Forecast of future levels of production	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
4.5 Forecast of future market share	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
4.6 Forecast sales at current balance sheet date on contracts held but to be settled in the future	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
5 Management discussion and Analysis								
5.1 Effect of a hypothetical change in the prevailing level of market interest rates on the net fair value of financial instruments	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
5.2 Effect of a hypothetical change in the prevailing level of market interest rates on future financial performance of the firm	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
5.3 Effect of a hypothetical change in the prevailing level of market Interest rates on the cash flow of the firm	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
5.4 The probability of losses arising from credit risk in the future	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
5.5 The sensitivity of equity or revenues and expenses to several possible changes in market prices	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
5.6 The entity's value at risk or aggregate value at risk from derivative financial instruments	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5
5.7 The adequacy of collateral or other security held assuming a default had occurred, including its net fair value	☐	☐	☐	☐	☐	☐	☐	1 2 3 4 5

Section II: Background Information

1. Respondent's Information

1.1 Name:

1.2 Contact details (email, telephone number, mailing address, web-site details):

1.3 Name of the company:

1.4 Exact job title of interviewee including department and location:

1.5 Length of service:

1.6 Main purpose for analysing companies' annual reports:

2. About the Research

2.1 Title of Research:
Voluntary Corporate Disclosure Relating to Financial Instruments Before and After Mandatory Requirements: The Impact of Proprietary and Political Costs

2.2 As a user of financial information, what other items of information relating to financial instruments would you like companies to disclose in addition to what is required by AASB 1033?

3. Wrap Up

3.1 Debriefing question

What line of reasoning did you use in rating the proprietary costs embodied in each disclosure item?

3.2 Any further comments, inputs, references:

THANK YOU FOR YOUR CO-OPERATION

Please place this completed questionnaire in the self-addressed envelope and return it to:

Professor Dennis Taylor
Chair of Accounting

Room 210, Security House
233 North Terrace
THE UNIVERSITY OF ADELAIDE
SA 5005
AUSTRALIA

Appendix 9

Sample of Letters Requesting for an Interview with Securities Analysts

Appendix 9

Sample of Letters Requesting for an Interview with Securities Analysts

THE UNIVERSITY OF ADELAIDE
AUSTRALIA

Professor Dennis W Taylor
Chair of Accounting
School of Commerce
Faculty of the Professions
THE UNIVERSITY OF ADELAIDE
SA 5005, AUSTRALIA
TELEPHONE +61 8 8303 5527
FACSIMILE +61 8 8303 4368
dennis.w.taylor@adelaide.edu.au
CRICOS Provider Number 00123M

Dear

I'm seeking your assistance in a research study on corporate disclosure relating to financial instruments before and after the introduction of the accounting standard "Presentation and Disclosure of Financial Instruments" (AASB 1033).

Specifically, this study will determine the effect of the introduction of the mandatory disclosure requirements and the impact of proprietary costs on management's voluntary disclosure decisions relating to financial instruments. An integral aspect of the study is the obtaining of ratings by experts such as yourself, on the extent of proprietary costs in each disclosure item.

I would therefore be most grateful to be granted an appointment to interview you relating to corporate disclosures and related proprietary costs at a convenient time. I would appreciate it if the interview could take place before the week ending 27 March 2004. The approximate time required for the interview will be no more than one hour and my PhD student; Faizah Darus and I will conduct the interview.

All information provided by you during the interview will be treated in the strictest confidence. I would like to phone you within a few days to seek a suitable appointment time. Your co-operation will be greatly appreciated.

Thank you.

Yours sincerely

DENNIS TAYLOR
Professor of Accounting

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