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Social disclosure by Australian listed mineral mining companies: A stakeholder approach

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SOCIAL DISCLOSURE BY AUSTRALIAN LISTED MINERAL MINING COMPANIES: A STAKEHOLDER APPROACH

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ABSTRACT

This study examines the incentives of Australian listed mineral mining companies within the stakeholder theoretical framework to disclose socially responsible information in their corporate annual report. The three dimensions of the stakeholder theory were empirically tested to explain the association of a social disclosure model comprising categories of social disclosure for environment, energy, product and services, human resources and community involvement, with nine firm-specific characteristics. The sample of 179 Australian listed mineral mining companies for the financial year ending 1994 was obtained by personal contact. The extent of social disclosure was measured by a dichotomous index against the social disclosure model. Results of multivariate tests provide evidence that Membership of the Australian Mining Industry Council (Stakeholder Power dimension), and company size (a Control Variable) which was jointly represented by three surrogates (total assets, total sales, and market capitalisation), to be the most significant variables associated with the social disclosure model. The presence of a social responsibility group (Strategic Posture dimension) was also significantly related to the extent of total disclosure and four categories of social disclosure (environment, product and services, human resources, and community involvement). Company age (a Control Variable) was significantly associated with energy related disclosure. Commercial production (a Control Variable) was significant to the total disclosure and two categories of social disclosure (environment, and human resources). Return on equity, and systematic risk (Economic Performance dimension) did not explain social disclosure. The research findings imply that economic performance measures derived from the financial statements of corporate annual reports do not seem to be reliable surrogates for evaluating voluntary social disclosure. To improve the extent of disclosure of socially responsible information, accounting regulators may need to consider issuing an accounting standard on corporate social responsibility disclosure.

DECLARATION

"I hereby certify that this thesis does not incorporate, without acknowledgment, any material previously submitted for a degree or diploma in any institution of higher education and that, to the best of my knowledge and belief, it does not contain any material previously published or written by another person except where due reference is made in the text."

Gary Siu-Chung Kong

Date: 16 July 1996

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CHAPTER 1

INTRODUCTION

Statement of problem

Organisations are accountable to society for their actions, and the organisational disclosure response to the accountability demands of society is through the mechanisms of internal and external reporting (Gray et al., 1995a; Lewis et al., 1995; Gibson & Guthrie, 1995). Public awareness of the role of corporations in society has been growing over the last 30 years; and many companies which have been credited with contributing to economic and technological progress in the community have been condemned for causing social[1] problems (Hackston & Milne, 1996).

Corporate social disclosure[2] assists society to evaluate how well an organisation is performing with respect to that organisation's economic and social responsibilities (Lewis et al., 1995). In Australia, there are limited legislative requirements and no accounting standard for disclosing socially responsible information.[3] In the absence of mandatory social reporting requirements, social disclosure is entirely voluntary[4] and companies have absolute discretion on what they disclose in the annual reports (Pang, 1982).

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[1] Social refers to living in organised groups or communities, and deals with the living conditions, health or other aspects of the lives of human beings.

[2] Corporate social disclosure is not a universally defined term. Parker (1986) identified seven terms employed in the area: social responsibility accounting, social accounting , social audit, societal accounting, socio-economic accounting, social reporting, and social responsibility disclosure. "The four major characteristics commonly cited in social responsibility reporting definitions are: assessing social impact of corporate activities, measuring effectiveness of corporate social programs, reporting upon corporations' discharge of their social responsibilities, external and internal information systems allowing comprehensive assessment of all corporate resources and impacts" (Parker, 1986 p. 72).

[3] Socially responsible information was categorised by Trotman and Bradley (1981) into environment, energy, products, human resources and community involvement. Information was classified into financial, non-financial, qualitative, and quantitative.

[4] Voluntary refers to doing things willingly, without being compelled or controlled. In Australia, social disclosure in annual reports is not mandated by legislation, and all the classified social disclosures are dependent on concepts of corporate morality and are therefore treated as voluntary.

There is a trend emerging in countries around the world as to the voluntary corporate disclosure of social information (Cowen, et al., 1987; C. B. Roberts, 1991; Lewis et al., 1995), and the pattern of development has been the inclusion of such information as part of the published annual reports to shareholders (Mathews & Perera, 1993). Over an extended period of time, not only has social disclosure generated considerable discussion in the business community, the growth in awareness of social disclosure has also advocated accounting researchers to examine the disclosure of social information and its determinants (for example, Trotman & Bradley, 1981; Cowen, et al., 1987; Belkaoui & Karpik, 1989; Cooke, 1989; Guthrie & Parker, 1990; C. B. Roberts, 1991; Ness & Mirza, 1991; Roberts, 1992; Maheshwari, 1992; United Nations, 1992; Deegan & Gordon, 1994; Lewis & Mangos, 1995).

Objective of the research

The objective of this study is to examine the incentives of Australian listed mineral mining[5] companies within the stakeholder theoretical framework to disclose socially responsible information in their corporate annual report. In a model of social disclosure (as presented in Appendix A), the extent of voluntary social responsibility disclosure is tested with regard to nine firm-specific characteristics: company size (total assets, total sales, market capitalisation), ownership diffusion, membership of Australian Mining Industry Council, financial leverage, presence of a social responsibility group, return on equity, systematic risk, age, and commercial production.

Significance and contribution of the research

According to Mathews and Perera (1993), social accounting is an area which is yet undeveloped but which can provide regulators, accountants, and investors with a source of influence in the future. The mining industry has been widely recognised as being among those causing the greatest environmental damage, and has been the target of numerous environmental regulations in the past (Wiseman, 1982; Rockness, 1985). Due to the large

[5] Mineral mining is defined by the Australian Mining Industry Council as exploration for, and extraction and primary processing of minerals from the deposits. Oil and gas industry is separately classified from mineral mining industry due to their unique business nature and technology employed in the exploration and extractive activities.

number of mining companies in Australia and the sensitive nature of the industry, information on the social reporting practices of companies within this industry has greater relevance to society and greater potential decision usefulness to investors, and other corporate stakeholders than information for firms in non-environmentally sensitive industries.

This study extends prior research in social accounting, and its contribution is five-fold: first, this study develops a comprehensive social disclosure model comprising categories of social disclosure for environment, energy, product and services, community involvement, and human resources. In the social disclosure model constructed, the extent of social disclosure is examined with regard to firm-specific characteristics.

Second, with reference to social disclosure in the 1994 annual reports of listed mineral mining companies in Australia, an up-to-date analysis of Australian companies' social disclosure practices is facilitated in light of documented social reporting practices in Australia and overseas. Incentives for corporate management to make such voluntary reporting are analysed. Fuller and more up-to-date knowledge concerning these incentives will assist policy makers in assessing the impact of a possible standard and anticipating reactions to alternative policy resolutions. In essence, this study provides evidence for accounting regulators, policy makers, investors, and other regulatory agencies with regard to social reporting practices.

Third, to overcome the shortcomings identified in previous studies, the current study provides a benchmark of Australian social disclosure practices by selecting a random sample from the population frame, and the companies sampled account for 50% of the total number of listed mineral mining companies in Australia. The sample size employed will, in turn, enhance the generalisibilty of the research findings to mineral mining companies.

Fourth, other than total social disclosure, empirical studies to date in Australia have not yet examined the relationship between categories of social disclosure and firm-specific characteristics. Based on the presence and absence of social disclosure items within five categories of the social disclosure model, the extent of total disclosure and categories of disclosure is measured by a dichotomous[6] index. In essence, the content of social disclosure is measured on a systematic numerical basis, and the association of the extent of disclosure as to total social disclosure and categories of disclosure with firm-specific characteristics is assessed to provide more extensive research evidence.

Fifth, this study improves the external validity of earlier research by investigating voluntary social responsibility disclosures in a different institutional domain. This study focuses upon the Australian institutional setting, a setting in which there has been limited research relating a firm's accounting disclosures to its social profile (Deegan & Hallam, 1991). By considering the Australian institutional setting, it is possible to assess the validity of arguments developed in other institutional settings. The increased number of hypothesised variables aids understanding the potential determinants of the contemporary social disclosure practices within the stakeholder theoretical framework from which future research can advance.

Organisation of the research

The organisation for the subsequent chapters of this thesis is presented as follows: Chapter 2 reviews related empirical studies on social responsibility disclosures, and the findings of these studies are presented. Chapter 3 details the theoretical framework employed and outlines the hypotheses developed for the research. Each of the hypotheses with respect to the rationale and relevant theory is reviewed and discussed. The development of the social disclosure model is also detailed. Chapter 4 describes the research methodology employed in conducting the study, and the data sources used. Relevant independent variables are evaluated and presented. Chapter 5 reports the results of this study. Outcomes are analysed with respect to the theoretical framework employed. Chapter 6 summarises the findings and presents limitations of the study. Directions for future research are also suggested.

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[6] Dichotomous index refers to the unweighted rating assigned to information items based on the presence or absence of the items.

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

In this chapter, major Australian and overseas studies of social disclosure and determinants of social disclosure are reviewed. In turn, the review facilitates the application of a theoretical framework and the identification of relevant variables for explaining voluntary disclosure choices. Further, this review seeks to provide insight into areas to identify limitations of the related research on corporate social disclosure practices, and attempts to provide a basis to overcome the shortcomings in this study.

Australian studies on social disclosure

This section provides an overview of major prior research which has focused on the examination of a firm's social disclosure practices in Australia. The past literature adopts a variety of theoretical frameworks, research methodologies, and themes to analyse the voluntary reporting practices of corporate social responsibility information. Table 1 presents the Australian studies.

Trotman (1979) analysed the social responsibility disclosure practices of the 100 largest listed Australian companies, according to their market capitalisation. The survey compared disclosure in 1977 annual reports with disclosure in 1972 and 1967. The number of pages was used as a measure of the amount of disclosure made by companies. Social disclosures were considered under six categories: environment, energy, human resources, products, community, and other. The types of disclosure were classified as monetary and non-monetary quantification, monetary quantification, non-monetary quantification, and no quantification.

Results of the survey stated that there was a substantial increase in the extent of social responsibility disclosures made by companies during the periods studied. Human resources was the most popular disclosure area, and the other two popular areas were environment, and other. A number of reasons were suggested by Trotman (1979) for the increase in disclosure:

Table 1
Australian Studies on Social Disclosure

Researcher(s)	Information Type	Research Method	Principal Findings
Trotman (1979)	Social Responsibility Disclosure	Data source: 1967, 1972 & 1977 annual reports. Sample: 100 largest public companies. Disclosure areas: environment, energy, human resources, products, community involvement, & other. Disclosure classifications: monetary & non-monetary quantification, monetary quantification, non-monetary quantification, and no quantification. Unit of analysis: number of pages.	Australian companies were disclosing more social responsibility information during the years of study. The increase in the extent of disclosure from 1967 to 1977 was substantial. There was also an increase in the number of companies providing quantified social responsibility information. Human resources was the most popular disclosure area, and the other two popular areas were environment, and other.
Pang (1982)	Social Responsibility Disclosure	Data source: 1980 annual reports. Sample: 100 public companies (70 largest companies, remaining 30 selected at random). Disclosure areas: community involvement, energy, environment, human resources, and product improvement. Disclosure classifications: monetary & non-monetary quantification, monetary quantification, non-monetary. quantification, and no quantification.	There had been an increase in the incidence of social reporting. The number of companies disclosing quantified information had increased steadily since 1967. The largest proportion of companies using both monetary and non-monetary methods of disclosure were the largest companies. Larger companies appeared to provide more quantified information than the smaller companies. Disclosure regarding human resources was the most prevalent among all industrial groups. The other two areas more often reported upon were community involvement and the environment.

Table 1 (Continued)

Australian Studies on Social Disclosure

Researcher(s)	Information Type	Research Method	Principal Findings
Guthrie and Parker (1989)	Corporate Social Reporting	Data source: 177 annual and half-yearly reports (1885-1985). Sample: a company engaged in steel industry - Broken Hill Proprietary Company Ltd (BHP). Disclosure areas: environment, energy, human resources, products, community involvement, and others. Unit of analysis: number of pages. Statistics: scatter plots.	Total disclosure over the period studied varied considerably. Subjects of disclosures were concentrated on the areas of human resources and community involvement. Corporate reports were found to exhibit a variable pattern of total social disclosure levels over their history.
Tilt (1994)	Influence of external pressure groups on social responsibility disclosure	Data source: annual reports, supplements to annual reports, booklets or leaflets, advertisements or articles detailing companies' activities, labelling of products. Sample: 59 out of 146 Australian organisations. A pilot study was conducted. Statistical tests: Man Whitney U test, Fisher's Exact Probability test, Cochran's Q test, Chi-square, Kendall's Tau test, and Kruskal Wallis H test.	Pressure groups were one of the key user groups of corporate social disclosure. Pressure groups desired standards or legislation to be introduced to ensure the adherence of companies to social responsibilities. Annual reports were considered as the preferred place for disclosure. Both narrative or descriptive and quantified terms were suggested to be included. Legislation and standards were required to ensure the disclosure of socially responsible information.

Table 1 (Continued)

Australian Studies on Social Disclosure

Researcher(s)	Information Type	Research Method	Principal Findings
Gibson and O'Donovan (1994)	Environmental disclosure and regulations development	Data source: annual reports (1983-1992). Sample: 41 listed companies for 8 industry groups: chemicals, oil and gas, paper & packaging, engineering, transport, mining, solid fuels and miscellaneous. Disclosure classification: financial, non-financial, descriptive, and total environmental information. Unit of analysis: number of pages.	Number of companies disclosing environmental information in annual reports and the number of companies reporting financial, non-financial, and descriptive information had increased. Each industry group displayed a marked average percentage increase in the amount of total environmental disclosure. Chemical, engineering, solid fuels, paper and packaging, oil and gas, and mining industries recorded the largest increase in environmental disclosure. Disclosures for the mining industry were almost exclusively descriptive.
Gibson and Guthrie (1995)	Environmental Disclosure of Australian Public and Private Sector Organisations, and Comparison with Overseas Surveys	Data source: annual reports for 1994. Sample: 20 Australian public sector organisations in NSW and 40 publicly listed companies in the private sector. Method: Survey & Content Analysis Disclosure classification: qualitative, financial, and non-financial & quantitative. Unit of analysis: number of pages.	All of the total sample of those organisations disclosing environmental information had a qualitative form of disclosure. The organisation's environmental policy and/or a description of an environmental project or program are the most disclosed information. Quantified information was more popular in private sector. US companies had more financial disclosure and quantitative data. Australian organisations appeared to be on par with the results reported in the international surveys, in terms of amount and type of environmental disclosure.

social responsibility reporting enhanced public image and avoided confrontations; it represented a sign of good management; it reduced the pressure for legislation to control the reporting of corporate actions on society; and the possible influence of awards for the best annual reports.

Pang (1982) updated Trotman's results and analysed the corporate social responsibility disclosures made in terms of industry classification, methods of disclosures, form of presentation, and areas of social responsibility disclosed. The sample selected for the survey consisted of 100 public companies listed on the Sydney Stock Exchange in 1980. Disclosure of social responsibility for the purpose of the study was restricted to the annual reports. Social performance was considered under five major categories: community involvement; environment; energy; human resources; and products improvement. It was found that the most popular area of disclosure by Australian companies was in relation to human resources. In terms of both actual numbers and percentages, the proportion of companies disclosing social information increased over the years. Companies disclosing quantified information had increased steadily since 1967. The largest proportion of companies using both monetary and non-monetary methods of disclosure represented the largest companies, representing 35% of all companies using this means of disclosure in 1980. Larger companies provided more quantified information than the smaller companies. The other two areas more often reported upon were the areas of community involvement and environment. Whereas product improvement had been a relatively neglected area, interest in such disclosures had increased in 1980. The trend towards greater disclosure in all areas of social responsibility was identified. While companies in the services industry had a relatively lower percentage of disclosure than other industrial groups; oil and mining, manufacturing, building and engineering companies provided the greatest amount of disclosure in the area of energy and environment.

Guthrie and Parker (1989) conducted a historical analysis of social disclosures in 100 years of annual reporting by a leading Australian company engaged in the steel industry - Broken Hill Proprietary Company Ltd (BHP). Content analysis[7] was employed to record social

[7] Content analysis is a research technique for making replicable and valid inferences from data according to their context. Depending on selected criteria, it codifies the text (or content) of a piece of writing into various groups (or categories), and quantitative scales are derived to permit further analysis (Weber, 1988).

responsibility disclosures across six areas: environment, energy, human resources, products, community involvement, and others. The approach of page measurement was adopted to measure the extent of social disclosures. Guthrie and Parker (1989) contended that the disclosure of corporate social actions and performance was a reaction to the environment where it was used to legitimise corporate actions. Findings of the study indicated that total social disclosures over the period studied varied considerably. Subjects of disclosures were concentrated on the areas of human resources and community involvement. Corporate reports were found to exhibit a variable pattern of total social disclosure levels over their history. In the context of social disclosures, a more rigid theory would be required to explain the historical pattern as the analysis failed to confirm legitimacy theory as the primary explanation for corporate social disclosures.

Tilt (1994) examined the influence of external pressure groups on social responsibility disclosures. Annual reports, supplements to annual reports, booklets or leaflets, advertisements or articles detailing corporate activities, labelling of products, of 59 Australian organisations were evaluated. Results of the study indicated that pressure groups were one of the key user groups of corporate social disclosure and had definite viewpoints about the disclosure. Pressure groups desired standards or legislation to ensure corporate adherence to social responsibilities. Annual reports were regarded as the preferred place for disclosure. Supplements to annual reports for social disclosure received the second highest score for understanding and the second highest score for credibility. Both narrative or descriptive and quantified terms were suggested to be included. The responses to the sufficiency of corporate social disclosure available was consistent, and it was concluded that legislation and standards were required to warrant the disclosure of socially responsible information.

Gibson and O'Donovan (1994) constructed a ten-year longitudinal study examining environmental disclosure in the corporate annual reports of 41 listed Australian companies from eight different industry groups: chemicals, oil and gas, paper and packaging, engineering, transport, mining, solid fuels, and miscellaneous. The number of pages was used as a measure of the amount of disclosure made by companies. The types of disclosure were classified into four categories: financial, non-financial, descriptive, and total environmental disclosure.

It was found that the number of companies disclosing environmental information in annual reports increased from 46% in 1983 to over 67% in 1992, and the number of companies reporting financial, non-financial, and descriptive information had also increased. Each industry group displayed a marked average percentage increase in the amount of total environmental disclosure. Disclosures for the mining industry were almost exclusively descriptive. Due to the non-existence of uniform environmental regulation applicable to listed companies throughout Australia, the researchers concluded that it was difficult to link between the increased environmental content in annual reports and increased environmental legislation.

Gibson and Guthrie (1995) offered evidence of environmental disclosures in annual reports for 1994 from a survey of a selection of 20 Australian public sector organisations in New South Wales and 40 publicly listed organisations in the private sector. Reporting trends of environmental matters in annual reports were observed to vary between the two sectors studied. Although annual reports prepared by government agencies included a significantly wider range of performance information than private sector organisations, there has been no legislative requirement to report on environmental matters in Australia.

The annual report of each organisation selected was examined using content analysis, and the data collected included quantity, location and style of any environmental disclosure practices identified. The style of disclosure was classified into three categories: (1) qualitative; (2) financial; and (3) non-financial, quantitative. The number of pages was used as a measure of the amount of disclosure made by the surveyed organisations. Environmental disclosure was recorded across nine different items: environmental policy, environmental project or program, environmental targets, environmental performance against targets, environmental audit (internal), environmental audit (external), environmental protection statement, interaction with Environmental Protection Authority or other environmental organisation, and environmental committee. The location of disclosure was classified into seven categories: mission statement or key objectives, organisational highlights, project or program highlights or operational review, directors' report, managers' report, separate section on environment, and financial statements.

Findings of the survey indicated that 53% of the organisations surveyed disclosed environmental information within their annual reports. Almost 59% of disclosing organisations supplied more than one page of environmental information, and the total sample of those organisations disclosing environmental information had a qualitative form of disclosure while quantified disclosures and financial disclosures were not as common. Data on the location of the environmental disclosures indicated that environmental information was mainly found in the project / program review or operational review section of the annual report for 78% of disclosing organisations. The organisation's environmental policy and / or a description of an environmental project or program are the most disclosed information. In terms of the frequency of disclosure, both public and private sectors were similar. All disclosing organisations in both the public and private sectors included qualitative information. However, quantified information was far more popular in the private sector. The operational review section was the most popular location of environmental disclosure in both the public and private sectors.

In order to investigate how the environmental disclosure practices of Australian organisations compared with international practices, the findings of the survey were then used to make a comparison with four overseas surveys on voluntary environmental disclosure practices: a study by the United Nations (1992); the KPMG Peat Marwick (1992) survey of top 100 companies in the USA, UK, and Canada; Kirkham and Hope's (1992) survey of 237 UK companies; and Gray et al.'s (1995a) study of UK companies. It was noted that Australian organisations had more disclosure than the selected international surveys. US companies had more financial disclosure and quantitative data; and disclosure was usually in the form of details of their environmental costs and expenditures. Most organisations reported some form of environmental policy statement. It was then concluded by the researchers that the Australian organisations included in the survey were on par with the results reported in the international surveys, in terms of amount and type of environmental disclosure.

Summary

In summary, researchers have found that there has been an increase in the number of companies providing social responsibility information; and the dominant themes consistently used in corporate social disclosures have been identified. While qualitative and non-monetary disclosures have been dominant, the number of companies reporting non-financial, and descriptive information has also increased. However, without offering a theoretical foundation, these descriptive studies have tended to illustrate the existence of an observed social reporting behaviour, and have failed to offer suggestions as to what actually motivates corporate management to make such voluntary reporting. Another limitation of these studies lies in the area of external validity arising from the small sample size and the inadequate sampling techniques employed. In particular, the association of the extent of social disclosure with firm-specific characteristics has not been investigated in these studies; and the research findings, therefore, have limited potential decision usefulness to policy makers, regulators, and investors.

Overseas studies on social disclosure

There has been a trend emerging in voluntary corporate disclosure practices in countries around the world as to their social responsibility and disclosures. Researchers have examined the voluntary disclosures of corporate social information in overseas countries, and their studies as well as findings are reviewed in this section. Tables 2 displays a summary of overseas studies on voluntary social disclosures.

Wiseman (1982) evaluated the quality and accuracy of environmental disclosures made in corporate annual reports. "The annual report was selected as the source for corporate environmental disclosures as it is recognised as the principal means for corporate communication of activities" (Wiseman, 1982 p. 55). Annual reports disclosures made by US firms in environmentally sensitive industries were examined, and a sample of 26 of the largest companies in the steel, oil, and pulp and paper industries were selected for the study. These industries were widely recognised as being among those with environmental problems and having high expenditures on pollution control. Companies in the sample were chosen from each of these industries based on the availability of external environmental performance measures compiled by the Council on Economic Priorities[8] (CEP). Based on the presence and

[8] Council on Economic Priorities (CEP) is a non-profit organisation dedicated to evaluating corporate social performance in US, and it is a credible source for objective environment performance measures of individual companies. It also provides comparative environmental performance rankings for companies.

Table 2

Overseas Studies on Social Disclosure

Researcher(s)	Information Type	Research Method	Principal Findings
Wiseman (1982)	Environmental disclosures	Data source: reports of the Council on Economic Priorities: 1972-1976 Sample: 26 US firms from 4 industries: steel, oil, electric utilities, and pulp and paper. Unit of analysis: dichotomous index Disclosure classification: monetary, non-monetary quantitative, & qualitative information. Statistics: Spearman's rank order correlation.	Corporate environmental disclosures were incomplete and inconsistent across firms and were not related to the firms' actual environmental performance. No relationship was found between disclosure length and environmental performance. The existence of industry-wide disclosure patterns for environmental reporting was also indicated.
Rockness (1985)	Environmental disclosures	Data source: annual reports for 1972, 1974, and 1976; and reports of CEP. Sample: 26 US firms from 3 industries: steel, oil, and pulp and paper. Unit of analysis: Q-sort ranking Statistics: Kendall's Coefficient of Concordance, Kendall's W, Spearman's Rho, Spearman's Rank Order Correlation.	No association was found between the contents of annual report environmental disclosures and actual environmental performance. Information in the annual report disclosures formed an incomplete report of actual environmental performance.

Table 2 (Continued)

Overseas Studies on Social Disclosure

Researcher(s)	Information Type	Research Method	Principal Findings
Zeghal & Ahmed (1990)	Social Responsibility Disclosure	Data source: annual reports, brochures, advertisement (1981 & 1982). Sample: 6 largest banks and 9 largest petroleum companies. Method: content analysis. Unit of analysis: dichotomous index, number of words. Disclosure areas: environment, energy, business practices, human resources, community involvement, products, other disclosures. Statistics: Cross classification, descriptive statistics.	The information content and the form of social information disclosure was related to a company's operations. The description provided by the annual reports of social information disclosure might not be complete. Canadian banks and petroleum companies placed the highest importance on the human resources disclosure. Importance placed on the other categories showed both inter-industry and intra-industry variation. Advertisements and brochures were not a major means of disclosing social information for Canadian banks and petroleum companies.
Freedman & Wasley (1990)	Social disclosures and social performance	Data source: annual reports for 1972-1976. Sample: 50 US firms from 4 industries. Unit of analysis: dichotomous index. Disclosure area: environment. Statistics: Spearman's Rank Order Correlation.	No association was found between the contents of annual report voluntary or mandatory environmental disclosures and actual environmental performance. Firms in the oil industry with better environmental performance described their past and future expenditures for pollution abatement more extensively.

Table 2 (Continued)

Overseas Studies on Social Disclosure

Researcher(s)	Information Type	Research Method	Principal Findings
Kirkham and Hope (1992)	Environmental disclosures	Data source: annual reports for 1992 Sample: 237 UK firms. Method: Survey. Disclosure area: environment.	A high proportion of large companies provided environmental information compared to medium and unlisted companies. Large companies disclosed information in significantly more subject areas than medium and unlisted companies. There was no significant differences in disclosures from environmental sensitive areas when compared with other industries.
Gray et al. (1995a)	Social responsibility disclosures	Data source: annual reports (1979-1991). Sample: 100 largest UK listed companies. Unit of analysis: number of pages. Disclosure areas: environment, energy, community, health and safety, employee, and general other. Statistics: Descriptive statistics.	A steady growth in the volume of total corporate social disclosure was noted throughout the period of study, and there had been a fourfold increase in voluntary disclosure over the period. Employee-related disclosure was the most popular subject and environmental disclosure was the second most significant in terms of volume. The size of companies appeared to be an important factor for most areas of voluntary social disclosures.

absence and the degree of specificity of information items, as well as the number of lines, an indexing procedure was used in the study to measure the contents of the environmental disclosures in detail, and the relationship between the disclosure contents and the firm's environmental performance was tested. Disclosures were mainly classified into three categories: monetary, non-monetary quantitative, and qualitative information.

Wiseman (1982) found that corporate environmental disclosures were incomplete and inconsistent across firms and were not related to the firm's actual environmental performance. The lack of significant association between the line count ranking and the CEP ranking showed that environmental disclosures did not represent better environmental performance. A distinct lack of specificity was found in disclosed information, and no relationship was identified between disclosure length and environmental performance. Also, the existence of industry-wide disclosure patterns for environmental reporting was indicated.

Rockness (1985) conducted a field experiment in which subjects evaluated firms' environmental performance based on actual annual report disclosures. Participants in the experiment included financial analysts, members of environmental protection organisations, environmental regulators, and MBA students. Twenty six of the largest US companies in the steel, oil, and pulp and paper industries were selected for the study. The specific evaluations utilised in the study were developed by the Council on Economic Priorities (CEP) based on in-depth research studies of firms' environmental performance. Annual reports were obtained for each of the companies for the years corresponding to the CEP's evaluations of environmental performance: 1972 and 1976 for the steel industry; 1974 for the oil industry, and 1972 for the pulp and paper industry. Findings of the empirical study supported the conclusions of Wiseman (1982), which found no association between the contents of annual report environmental disclosures and actual environmental performance. Subjects with widely diverse backgrounds and attitudes toward environmental performance interpreted corporate environmental performance in the same manner from annual report disclosures. Information in the annual report disclosures formed an incomplete report of actual environmental performance. Hence, subjects were unable to accurately make comparative judgements about a firm's environmental performance from the annual report disclosures. Although the limitations of sample size and the focus on only environmental performance must be taken into consideration, the findings of the study indicated that caution should be exercised in interpreting previous research utilising social disclosures as surrogates of actual social performance.

Zeghal and Ahmed (1990) reported the results of their study based on content analysis of social responsibility disclosures by the six largest Canadian Banks and the nine largest Canadian petroleum companies in 1981 and 1982, analysing the amount and the focus of reporting in the corporate annual report, company brochures and mass media advertisement. The rating of disclosure in the study was based on the presence or absence of, and the degree of specificity of, various information items. Unlike Wiseman (1982), the study did not attempt to weight monetary and non-monetary quantitative and qualitative information or to prepare various indexes of information disclosure. However, narrative, quantitative and monetary information was presented separately in order to assess the social disclosure policies of the sample firms. Disclosures were considered under seven categories: environment, energy, business practices, human resources, community involvement, products, and other disclosures.

The results of the study indicated that the information content and the form of social information disclosure was related to a company's operations and that the content was likely to be distributed by means of a medium of communication, the information format of which was geared to the target audience. It was found that the description provided by the annual reports of social information disclosure might not be complete. There was some homogeneity among the banks in terms of the emphasis placed on the social responsibility information categories. Human resources was found to be the most important disclosure category for banks, followed by product and business practices. Paralleling the outcomes for banks, human resources was also the most important disclosure category for the petroleum industry. Unlike the banking industry, this was followed by community involvement and environment. Hence, both banks and petroleum companies placed the highest emphasis on the human resources disclosure category. Importance placed on the other categories showed both inter-industry and intra-industry variations.

Freedman and Wasley (1990) extended the studies of Wiseman (1982) and Rockness (1985) by examining the correlation between environmental performance and environmental disclosure in annual reports. They analysed the annual reports of 50 US companies from four industry groups, and found no association between the voluntary or mandatory disclosures in the annual reports and the actual environmental performance. Due to the poor information content of the environmental disclosure, it was suggested by the researchers that social disclosures in annual reports demanded regulation.

A survey of 237 UK corporate annual reports for 1991 was undertaken by Kirkham and Hope (1992), and three major findings were identified. The first being that a high proportion of large companies provided environmental information compared to medium and unlisted companies. Large companies disclosed information in significantly more subject areas than medium and unlisted companies. There were no significant differences in disclosures from environmental sensitive areas when compared with other industries. The researchers contended that influences such as industry classification and profitability should be examined to investigate the impact on the level of environmental reporting in annual reports. Also, little was known about the motives of and influences on companies that were willing to report environmental information; and the types of environmental information different stakeholders would prefer to have in the corporate annual reports.

Gray et al. (1995) conducted an extensive study of the corporate social responsibility disclosure practices of the 100 largest UK companies over a 13 year period, beginning in 1979. Both mandatory and voluntary social disclosures in corporate annual reports by companies were examined and analysed. Voluntary social disclosures were considered under six major categories: environment, energy, community, health and safety, employee, and general other. The number of pages was used as a measure of the amount of disclosure made by companies.

It was noted that a steady growth in the volume of total corporate social disclosure was reflected throughout the period of study, and there had been a four-fold increase in voluntary disclosure over the period but some of this is probably due to the size effect in the sample. The dominance of, and the increase in employee-related disclosure was notable. Community and environmental disclosure were significant, while customer related disclosure remained at a very low level. Employee related disclosure was the most popular subject on which to report and disclosure relating to the community was also widely practised. Environmental disclosure rose significantly throughout the period of study, and it was also the second most significant voluntary social disclosure in terms of volume. It was concluded that corporate social disclosures changed over time and the size of companies was an important factor for most areas of voluntary social disclosure. On an empirical level, the significant change in social disclosure behaviour was clearly demonstrated throughout the period, and it was concluded that both stakeholder theory and legitimacy theory offered better explanation and understandings of corporate social disclosure practices. The evidence presented by the study confirmed a substantial growth in social disclosure during a period in which social issues emerged as a dominant public concern.

Summary

In summary, voluntary reporting practices of social information have been studied overseas, and it has been found that such disclosures have been incomplete and inconsistent across firms; and they are not related to the firm's actual social performance. A steady growth in the volume of corporate social disclosure has been noted and human resources has been the most popular disclosure theme. Nevertheless, the limitations of sample size and sampling techniques, and the lack of theoretical framework or propositions must be considered when viewing these studies. Although these studies have supported the need for social reporting, they tend to focus on one particular type of social information - environmental disclosure. In particular, the motives of firms to disclosure socially responsible information have not been examined. Hence, the major shortcomings of these studies appear to be attributable to the lack of theoretical framework and the lack of focus on the extent of the association of social disclosure with firm-specific characteristics.

Australian studies on determinants of social disclosure

Research studies have examined the corporate characteristics or economic incentives of Australian corporate disclosure practices in the context of socially responsible information, and these studies are discussed in this section. Table 3 provides a summary of prior studies in this area.

Trotman & Bradley (1981) studied the association between social responsibility disclosures and various company characteristics. The sample used in the study consisted of 207 companies listed on the Australian Associated Stock Exchange. The annual reports of each of the companies were read to ascertain the disclosure of corporate social responsibility information. The effects of four variables (size, systematic risk, social constraints, and management decision horizon) were examined, and the extent of disclosures was measured by the number of lines. It was demonstrated in the study that companies which provided social responsibility information were on average, larger in size, had higher systematic risk and placed stronger emphasis on the long term than companies that did not disclose this information. For those companies which disclosed social responsibility information, a positive association was found between the amount of the social responsibility disclosure and the size of the company, the degree of social constraints faced by the company and the emphasis the company placed on the long term in making decisions.

Kelly (1981) analysed selected social responsibility disclosure items contained in the annual reports of 50 Australian companies over the period 1969 to 1978, and divided the Australian Associated Stock Exchange classifications into primary, secondary and tertiary industries. Report recipients and time horizon were also included as the independent variables to measure against six selected social responsibility disclosure items: environment, human resources, energy, products, community involvement, and other. A dichotomous index was used to gauge the level of social disclosures for the presence of the particular disclosure items.

The research findings indicated that disclosure of social responsibility information had increased over the period studied. Large corporations tended to disclose more information on environment, energy, and products than smaller companies. Companies in the primary and secondary industries tended to disclose more environmental and energy information than corporations engaged in tertiary industries, while the latter were found to disclose more information on community involvement than the former. It was demonstrated that the disclosure of corporate social responsibility information was of growing importance in the information content of annual reports, thus the development of better measurement techniques would be necessary.

Table 3

Australian Studies on Determinants of Social Disclosure

Researcher(s)	Variables	Research Method	Principal Findings
Trotman and Bradley (1981)	Company size, systematic risk, social pressure, management's decision horizon.	Data source: annual reports of 1979 Sample: 207 large Australian listed companies. Unit of analysis: number of lines. Disclosure areas: environment, energy, human resources, products, community involvement, and other. Statistics: Mann-Whitney U test, Spearman Rank Correlations, Chi-Square.	Companies which provided social responsibility information were on average, larger in size, had a higher systematic risk and placed stronger emphasis on the long term than companies which did not disclose this information. A positive association was found between the amount of the social responsibility disclosure and the company size, the degree of social constraints faced by the company and the emphasis the company placed on the long term in making decisions.
Kelly (1981)	Time horizon, report recipients, and industry classification.	Data source: annual reports (1969-1978). Sample: 50 Australian listed firms Disclosure areas: environment, human resources, energy, products, community involvement, and other. Unit of analysis: Dichotomy. Statistics: Spearman Rank Order Correlation, Chi-Square.	Large corporations tended to disclose more environmental, energy, and products information than small companies. Companies in the primary and secondary industries tended to disclose more environmental and energy information than corporations engaged in tertiary industries, while the latter were found to disclose more information on community involvement than the former.

Table 3 (Continued)

Australian Studies on Determinants of Social Disclosure

Researcher(s)	Variables	Research Method	Principal Findings
Deegan and Gordon (1994)	Environmental sensitivity, positive environmental disclosures, negative environmental disclosures.	Data source: annual reports of 1991 Sample: 197 companies. Unit of analysis: average number of words. Method: environmental sensitivity of an industry was rated by environmental groups. Statistics: Pearson product moment correlation, Spearman Rank Correlations, t-test, Wilcoxon matched Pairs test.	Magnitude of environmental sensitivity of the firms within which they operated was significantly and positively associated with the amount of positive environmental disclosure. The extent of positive environmental information disclosed was considerably greater than that of negative environmental information. Management behaved opportunistically in its disclosure of environmental information.
Lewis & Mangos (1995)	Environmental stakeholder power, strategy, net profit, size (net tangible assets), risk, and environmental disclosures.	Data source: annual reports of 1986 and 1987. Sample: 1000 largest Australian companies. Method: content analysis. Unit of analysis: percentage of the total textual discussion by page format. Theory: Stakeholder theory. Statistics: Non-parametric Kendall's tau correlation coefficient.	Stakeholder theory and strategy were found to be the appropriate foundations for empirical analyses of corporate social disclosure. Results weakly supported that social responsibility disclosure related to measures of strategy and economic stakeholder power as well as corporate size. Weak positive association was found between the absolute financial effect of discretionary accounting policy choice, as a proxy for strategy, and social responsibility disclosure.

Table 3 (Continued)

Australian Studies on Determinants of Social Disclosure

Researcher(s)	Variables	Research Method	Principal Findings
Christopher et al. (1996)	Ownership diffusion, operating leverage, political pressure, presence of an environmental responsibility committee, return on assets, return on equity, OLS systematic risk, company size (total assets, total sales, and market capitalisation), commercial production, and the extent of total and categories of environmental disclosure.	Data source: annual reports of 1993. Sample: 104 Australian listed mineral mining companies. Theory: Stakeholder theory. Unit of analysis: words, weighted index, and unweighted index. Statistics: Principal Components Analysis, OLS regression.	The single Factor Score of the three indexes was a suitable surrogate for the dependent variable for environmental disclosure. Membership of the Australian Mining Industry Council and company size were found to be significant. Financial variables were not surrogates for voluntary environmental disclosure.

Deegan and Gordon (1994) examined the propensity of companies to voluntarily disclose environmental information within the annual reports of 197 Australian companies in 1991, and classified the disclosures into two categories; positive (favourable to the environment) and negative (unfavourable to the environment). Rather than using firm size as the proxy, the researchers employed a political cost framework, and related the decision to make environmental disclosure to a related corporate attribute, namely the magnitude of the environmental sensitivity of the company. The amount of social disclosure revealed in the annual reports was measured in terms of average number of words. Development of the research hypotheses was based upon the proxy, environmental sensitivity, and the types of environmental information disclosed. The results indicated that magnitude of environmental sensitivity of the firms within which they operated was positively associated with the amount of positive environmental disclosure. The extent of positive environmental information disclosed was considerably greater than that of negative environmental information. It was suggested that management behaved opportunistically in its disclosure of environmental information.

Lewis and Mangos (1995) examined prior research into the relationship between social disclosure and reported economic performance and empirically tested for correlation between social responsibility disclosure in annual report and economic performance. A sample of 1,000 Australian companies, made up of the top 500 in 1986 and the top 500 in 1987 was used. The contingency framework proposed by Ullmann (1985), which was developed to predict levels of corporate social responsibility activity and disclosure based on stakeholder theory, was adopted and testing for environmental stakeholder power was included in the study.

The results indicated that the significance of the framework provided evidence that environmental stakeholder theory and strategy were appropriate foundations for empirical analyses of corporate social disclosure. Factors other than economic performance and corporate size were important in social responsibility disclosure research. The results did not support that social responsibility disclosure related to measures of strategy and economic stakeholder power as well as corporate size. The tests of Ullmann's contingency framework (1985) for environmental stakeholder power supported prior research which identified weak positive association between firm size and corporate social disclosure. The inclusion of the absolute financial effect of discretionary accounting policy choice as a proxy for strategy was found to be weakly positively associated and significant. Measures of market risk as represented by Beta were not significant. With the inclusion of proxy measures for high and low environmental stakeholder power, weak positive association between firm size and corporate social disclosure was significant when stakeholder power was low. As a proxy for size, only "net tangible assets" was significant when stakeholder power was high. There was also weak positive association between the absolute financial effect of discretionary accounting policy choice, as a proxy for strategy, and social responsibility disclosure. This association was stronger when environmental stakeholder power was high. A weak positive association was found in the proxy variables for strategy, environmental stakeholder power and firm size.

Within the three dimensions of the stakeholder theoretical framework, Christopher et al. (1996) investigated the extent of voluntary environmental disclosure by 104 Australian listed mineral mining companies listed on the Australian Stock Exchange in 1993. Principal Component Analysis was used to combine a single index in place of words, unweighted and weighted index to measure the relationship of environmental disclosure and categories of environmental disclosure with firm-specific characteristics: ownership diffusion, operating leverage, political pressure, presence of an environmental responsibility committee, return on equity, OLS systematic risk, company size - total assets, total sales, and market capitalisation, and commercial production. Membership of the Australian Mining Industry Council and company size were found to be significant. It was concluded that voluntary environmental disclosure was related to Stakeholder Power, and financial variables were not surrogates for voluntary environmental disclosure. The explanatory variables used as surrogates in the Strategic Posture dimension and in the Economic Performance dimension of the Stakeholder Theory were not significant.

Summary

In summary, the relationship between the amount of corporate social disclosure and corporate characteristics has been noted. However, conflicting results have been found in the Australian studies as to the nature and degree of the effect of economic determinants on the extent of corporate disclosure. Depending on the type of conceptualisation and operationalisation of key variables, the research results range from strong correlation to no significant correlation.

The findings of the Australian studies on determinants of social disclosure were subject to limitations. Apart from the small sample size, they were performed only on large companies ranked by market capitalisation, and therefore the results might not be generalisable for smaller companies. For most of the studies discussed, due to the inadequate propositions and the lack of theoretical framework and, it would not be feasible to capture all the dimensions that influence the reporting of social information; and the proxies selected might not reflect the complex nature of business environment that companies operated within.

Overseas studies on determinants of social disclosure

Studies have been conducted in overseas countries to investigate empirically the various firm motives to voluntarily disclose social information, and these studies are outlined in this section. Table 4 provides a summary of prior overseas studies on corporate social disclosure.

Cowen et al (1987) extended the scope of prior empirical studies which investigated the nature and frequency of corporate social responsibility disclosure, their patterns and trends, and their relationships to corporate size and profitability; and sought to move beyond the investigation of overall corporate disclosure, and general aggregate relationships between disclosure and independent corporate related variables. The study investigated the relationship between a number of corporate characteristics and specific types of social responsibility disclosure, based on a comprehensive sample of 134 US companies from 10 different industries. Accordingly, the characteristics of corporate size, profitability (return on equity), industry type and presence of a social responsibility committee were examined in relation to corporate disclosure about environment, energy, fair business practice, human resources, community involvement and

Table 4

Overseas Studies on Determinants of Social Disclosure

Researcher(s)	Variables	Research Method	Principal Findings
Cowen et al. (1987)	Company size, industry, profitability (Return on Equity), presence of social responsibility committee.	Data source: Ernst & Whinney 1978 survey. Sample: 134 US companies from 10 industries. Unit of analysis: number of pages. Disclosure areas: environment, energy, fair business practices, human resources, community involvement, products, and other disclosures. Statistics: multiple regression, descriptive statistics.	Company size had a significant impact upon whether environmental, energy, fair business practice, community involvement and other disclosures are made, but no influence over human resource or product disclosures. Most disclosure types were not significantly affected by industry category. Disclosure of human resources information appeared to be related to the presence of a social responsibility committee. Different types of disclosures might receive different treatment from corporations and might constitute a response to different pressures.
Belkaoui & Karpik (1989)	Social performance, leverage, dividends to retained earnings, company size, capital intensity, systematic risk, profitability (Return on Assets), stock price return.	Data source: Ernst & Ernst survey 1973 and Business & Society Review. Sample: 23 US firms. Method: Reputational index. Theory: Agency theory. Statistics: OLS multiple regression, normality, Shapiro-Wilks test, ridge regression, and plots.	There was a significant and positive association between social disclosure and social performance. A significant and positive association was found between political visibility and social disclosure. There was a significant and negative association between financial leverage and social disclosure. An insignificant and negative association was found between economic performance and social disclosure, and it was attributed to the multicollinearity problem encountered in the study.

Table 4 (Continued)

Overseas Studies on Determinants of Social Disclosure

Researcher(s)	Variables	Research Method	Principal Findings
Cooke (1989)	Size, parent company relationship, industry, quotation status, and extent of social responsibility disclosures	Data source: Corporate annual reports of 1985. Sample: 90 Swedish companies (52 listed, 38 unlisted). Method: Content Analysis. Theory: Agency theory. Statistics: OLS multiple regression, Chi-Square, descriptive statistics, Lambda, Cramer's V, contingency coefficient.	Listed companies consistently disclosed more information than unlisted companies. Quotation status was the most important independent variable in explaining the variability in disclosure indexes, and there was a significant association between quotation status and the extent of disclosure in Swedish corporate annual reports. Whilst size was a factor of importance, it did not matter whether the measure was in terms of total assets, annual sales or number of shareholders.
Ness and Mirza (1991)	Industry groups (Oil industry and other industry)	Data source: 1984 annual reports. Sample: Top 131 companies operating in UK from 6 industries. Theory: Agency theory. Unit of analysis: dichotomous index. Disclosure areas: environment, product, employee, and community. Statistics: Pearson's Chi-Square, Yates' Corrected Chi-Square, Cross-Product Ratio (Odds Ratio).	A positive association existed between the environmental disclosure and the oil industry. The environmental disclosure tended to be concerned with favourable social performance rather than with activities detrimental to the environment. The disclosure of social information indicated that management acted to increase their welfare.

Table 4 (Continued)

Overseas Studies on Determinants of Social Disclosure

Researcher(s)	Variables	Research Method	Principal Findings
Roberts (1992)	Stakeholder power (ownership dispersion, corporate political action committee, leverage); Strategic posture (size of corporate affairs staff, sponsorship of a philanthropic foundation by firm); Economic performance (Return on equity, systematic risk); Control variables (Age, industry classification, company size).	Data source: annual reports (1984-1986). Sample: 130 US firms from 7 industries. Theory: stakeholder theory. Unit of analysis: the level and reliability of corporate social responsibility disclosure. Statistics: logistic multiple regression, descriptive statistics, Pearson correlations, bivariate correlations, Chi-Square.	Stakeholder theory was found to be an appropriate foundation for empirical analyses of corporate social disclosure. Current period levels of social responsibility disclosure related to prior period measures of economic performance, stakeholder power, and strategic posture toward social responsibility activities. A significant and negative relationship was found between the level of disclosure and systematic risk. Corporate age and industry classification might act as intervening variables in empirical tests regarding social responsibility activities.
Maheshwari (1992)	Company size, industry, profitability (Return on Assets), and presence of social responsibility committee.	Data source: annual reports, and the Economic Times (of India) annual survey. Sample: 100 Indian firms from 10 industries. Unit of analysis: number of pages. Disclosure areas: environment, energy, fair business practices, human resources, community involvement, product safety, and other disclosures. Statistics: descriptive statistics, OLS multiple regression.	Company size had the most significant variable associated with different types of social responsibility disclosures. The presence of corporate social responsibility committee was significantly associated with human resource disclosures. The industry classification was associated with disclosures relating to energy, environment, and community involvement. Disclosures pertaining to energy matters and community involvement appeared to be affected by both company size and industry classification.

Table 4 (Continued)

Overseas Studies on Determinants of Social Disclosure

Researcher(s)	Variables	Research Method	Principal Findings
Hackston and Milne (1996)	Company size (total sales, total assets, and market capitalisation), profitability (return on assets, and return on equity), industry type, and the extent of social disclosure.	Data source: annual reports (1992). Sample: top 50 New Zealand listed companies. Unit of analysis: measured pages, derived pages, and number of sentences. Disclosure areas: environment, energy, products, human resources, community, and other. Statistics: multiple regression.	Companies made most social disclosure on human resources, with environment and community themes also receiving significant attention. Both size and industry were significantly associated with amount of disclosure.

products, and other disclosures. Hence, the independent variables chosen were related to different types of social responsibility disclosure. Data used in this research was drawn randomly from the Ernst & Whinney 1978 survey of corporate social responsibility disclosure present in the annual reports of Fortune 500 companies.

It was found that corporate size tended to have a significant impact upon whether environmental, energy, fair business practice, community involvement and other disclosures were made, but no influence over human resource or product disclosures. Industry category also appeared to have influenced some types of social responsibility disclosure (namely energy and community involvement). However, most disclosure types (fair business practices, human resources, products, and other disclosures) did not appear to be significantly affected by industry category. It therefore appeared that these disclosure types were not a function of whether an industry was consumer oriented or was a high profile environmental impact industry. It was also noted that the disclosure of human resources information seemed to be related to the presence of a corporate social responsibility committee. It must also be recognised that all conclusions drawn about corporate social responsibility in the study related to the number of disclosures, not necessarily to the level of corporate activity.

Belkaoui & Karpik (1989) examined the determinants influencing the corporate decision to disclose social information, and proposed a positive model of the decision to disclose social information in terms of explanatory variables measuring social performance, monitoring and contracting costs (measured as leverage, dividends to unrestricted earnings), political visibility (measured as size, capital intensive ratio, systematic risk), and economic performance (measured as return on assets, stock price return). The positive model developed tested the empirical relationship of social disclosure with both social and economic performance. Social performance was measured by reputational indices based on a survey conducted by Business and Society Review among business people, in which leading corporations were rated in terms of social performance. The decision to disclose and/or the extent of disclosure of social information was measured based on a social disclosure scale of 0 to 13 derived from the Ernst and Ernst (1973) survey of social responsibility disclosure by US companies. Findings of the study raised fundamental issues and concerns for social responsibility disclosure. The association of social disclosure with social performance and political visibility was found to be significant and positive. It was indicated that the significant association of social disclosure with financial performance was negative, and there was an insignificant and negative association between social disclosure and economic performance.

Cooke (1989) investigated the extent of corporate social disclosure by unlisted and listed companies, and assessed whether a number of independent variables (quotation status, size, parent company relationship, industry) were associated with levels of social disclosure. A survey of annual reports was undertaken which consisted of an analysis of 90 Swedish corporate reports of 1985 (38 unlisted companies and 52 listed companies) - 224 variables were included in a scoring sheet which was completed for each company. A content analysis found that firms were consistent in their disclosure in virtually all aspects: listed companies consistently disclosed more social information than unlisted companies. Within the listed company category, it was found that companies with multiple quotations disclosed significantly more social information than those listed solely on the Stockholm Stock Exchange. There was a significant association between quotation status and the extent of disclosure in Swedish corporate annual reports, and a significant association between a number of corporate characteristics and the extent of disclosure in the annual reports. Quotation status was the most important independent variable in explaining the variability in disclosure indexes. Whilst size was a factor of importance, it did not matter whether it was measured as total assets, annual sales or number of shareholders. The independent variables that were important in explaining the variability in the aggregate disclosure indexes were also important in explaining the variability in the social responsibility indexes. Cooke (1989) stated that the choice of variables was rather subjective in the study, and there is a need to develop a framework for the selection of independent variables and the extension of independent variables in future research.

Ness and Mirza (1991) used positive accounting theory in the form of agency theory to determine if a relationship existed between environment-related disclosure and the oil industry. Social disclosure in 1984 annual reports of 131 leading listed UK companies was analysed. The companies under study were divided into six industry groups: capital goods, consumer goods - durable, consumer goods - non-durable, commodity group, oil, and miscellaneous; and four areas of social disclosure were identified as product-related, employee-related, environment-related, and community related. The frequencies of social disclosure in the annual reports of 131 companies were recorded, but not the proportion of space allocated to social disclosure. Based on the presence and absence of information items, each item for every area of corporate social disclosure was measured by a dichotomous index. The research findings indicated that there was a positive association between environment related disclosure and the oil industry. In the oil industry, the odds of a social disclosure being an environment related disclosure, were almost four times greater than such odds for the other industries. Besides, the environmental disclosure tended to be concerned with favourable social performance rather than with activities detrimental to the environment. Almost 91% of the environmental information disclosed was descriptive and 9% was non-financially quantified. No disclosure was financially quantified, indicating that managers had considerable choices as to the social information they wished to disclose. It was suggested that management placed a heavy emphasis on environment related disclosure in annual reports of oil companies, as the oil industry was perceived to be prone to damaging the environment. According to agency theory, such actions of management demonstrated that socially responsible information was disclosed to enhance the welfare of management.

Roberts (1992) operationalised the stakeholder framework presented by Ullmann (1985) and tested the effect of overall firm strategy on social responsibility disclosure. The determinants of the disclosure were examined to test stakeholder influences as determinants of the level of corporate social responsibility activity. The study improved on prior research by predicting the level of corporate social disclosure within a comprehensive theoretical framework and by adopting independent evaluations as measures of the level of corporate social disclosure. The variables used represented the level of stakeholder power, the strategic posture toward social responsibility activities, and the economic performance of a corporation. The stakeholder power variables included stockholder power, governmental and regulatory influences, and creditor influences. The strategic posture variables included public affairs staff, and philanthropic foundation. The economic performance variables included return on equity, and systematic risk. The control variables included age of the corporation, industry classification, and company size.

The sample consisted of 130 major corporations which were investigated in 1984, 1985 and 1986 by the Council on Economic Priorities because these companies were influential in establishing corporate trends in the social responsibility area. "The results of the empirical test supported the argument that current period levels of social responsibility disclosure related to prior period measures of economic performance, stakeholder power, and strategic posture toward social responsibility activities" (Roberts, 1992 p. 609). It was suggested that corporations confronted with a high level of political exposure were more likely to disclose social responsibility activities. Social responsibility disclosure and political action committee contributions might be aspects of an overall corporate strategy for managing government stakeholders. Corporations exhibiting strong economic performance in prior periods were more likely to have high current levels of social disclosure. The significant, negative relationship found between the level of disclosure and systematic risk provided evidence that companies with less stable patterns of stock market returns were relatively less likely to commit resources to social activities.

The results of the study also supported the suggestions that company size, corporate age and industry classification might act as intervening variables in empirical tests regarding social responsibility activities. These findings might be explained in part by the arguments that age and industry status were macro-level proxies for aspects of stakeholder power, strategic posture, or economic performance.

In order to extend the understanding of specific relationships between individual corporate characteristics and the types of social responsibility disclosure that public sector companies in India made, Maheshwari (1992) examined 100 corporate annual reports from 10 industries: food, textiles, paper and paper products, chemicals and fertilisers, petroleum, steel, mining, electronics, electricals, and scientific and photographic equipment to analyse the impact of four corporate characteristics on seven categories of social disclosure. Corporate characteristics included company size, industry, profitability, and presence of social responsibility committee while the categories of disclosure included environment, energy, fair business practices, human resources, community involvement, product safety and other disclosures. The study was initiated to investigate the relationships between corporate characteristics and various types of disclosures, and did not limit to the total social responsibility disclosure. The empirical findings revealed that company size was the most significant variable associated with environmental, energy, and community involvement disclosures. The presence of a corporate social responsibility committee was significantly associated with human resource disclosures. Industry categories also appeared to have impact on disclosures in connection with energy, and community involvement but no influence on other categories.

Hackston and Milne (1996) examined the annual reports of the top 50 companies (by market capitalisation) listed on the New Zealand Stock Exchange in 1992 to identify the determinants of social disclosure. Firm-specific characteristics of company size (total sales, total assets, and market capitalisation), profitability (return on assets, and return on equity), and industry type were examined in relation to six themes of corporate social disclosure: environment, energy, products, human resources, community, and general / other. The types of disclosures were classified into three categories: monetary, non-monetary, and declarative; and the nature of disclosure was disaggregated by good news, bad news, and neutral. The amount of social disclosure was studied by using measured pages, derived pages, and number of sentences.

Consistent with companies from the US, UK, and Australia, research findings indicated that New Zealand companies made more social disclosure on human resources, with environment and community themes also receiving significant attention. The majority of disclosures made tended to be declarative and good news. The amount of disclosure averaged about three quarters of an annual report page. Both size and industry were significantly associated with amount of disclosure, while profitability was not. By using sampling and measurement techniques more consistent with those employed in other countries, the study facilitated comparisons with research findings from other countries.

Summary

In summary, studies have been undertaken overseas to identify the corporate determinants of social disclosure. The relationship between firm-specific characteristics and the extent of corporate social reporting has been empirically tested and been positively recognised. It is apparent that there is a need for the extension of explanatory variables to further investigate the association between firm-specific characteristics and the extent of disclosure. Not only were the sample sizes small, companies chosen for these studies were mainly larger in size, and there would be a high possibility that these empirical results might suffer from external validity issues.

International comparative studies on social disclosure

This section reviews the international comparative studies on corporate social disclosure practices, and evaluate the diverse reporting practices across different countries. A summary of international comparative studies carried out is listed in Table 5.

In an international comparative analysis, Guthrie and Parker (1990) reviewed 147 corporate annual reports to identify the corporate social responsibility disclosure in the United States, United Kingdom and Australia. Four testable dimensions were established based on theme, evidence, amount, and location of the disclosure in the annual report. Two theoretical frameworks, namely, user utility and political economy theory, were adopted to examine the social responsibility disclosure practices in the three countries.

Findings of the study indicated that a mixture of quantified monetary and non-monetary disclosures was favoured in the United Kingdom, and the United States while non-monetary disclosures predominated in Australia. Based on the user utility framework, which regards the effectiveness of social disclosure to communicate to and with different interest groups, significant differences were identified in the method and location of the disclosure. British reports usually disclosed such information in the directors' report, while American reports often set out a special social responsibility section. For Australian corporate annual reports, disclosures of corporate social responsibility were made in various locations of the annual report. The rate of disclosures was relatively low compared to that of the other two countries, and the information disclosed was mainly human resources related. The amount of space devoted to such disclosures in a report varied in weighted average of 0.7 pages in Australia, to 0.89 pages in the United Kingdom, and 1.26 pages in the United States. The three countries emphasised three types of social information: human resources, community involvement, and environment.

Table 5

International Comparative Studies on Social Disclosure

Researcher(s)	Information Type	Research Method	Principal Findings
Guthrie & Parker (1990)	International comparative studies on social responsibility disclosures	Data source: annual reports for 1983. Variables: theme, amount, evidence, location, and total of disclosures. Sample: 147 largest listed firms from 3 countries (Australia, UK, and US). Theory: user utility and political economy. Disclosure areas: employee, product, community, and environment. Statistics: Chi-Square.	A significant difference was found between countries and their disclosure of social responsibility information. There was a significant difference in the method of social disclosures applied between countries. A significant difference was noted as to the location of social disclosure for the three countries. No significant difference was found regarding the amount of disclosure between the countries studied.
C.B. Roberts (1991)	International comparative studies on social responsibility disclosures	Data source: annual reports for 1988 and 1989. Sample: 110 companies from five countries (Germany, The Netherlands, France, Sweden, and Switzerland). Classification: 54 specific environmental items classified into 9 different types. Disclosure areas: environment, product, and employee. Statistics: ANOVA.	The level of disclosure was generally low. On average, companies clearly disclosed less environmental information than employee-related information. It was found that certain country-specific patterns of disclosure existed. The highest level of disclosure was found in the German reports. Employee related disclosures were often different from environmental disclosures, and the former tended to exhibit clearer country specific patterns. Environmental disclosures did not generally follow country specific patterns.

Table 5 (Continued)

International Comparative Studies on Social Disclosure

Researcher(s)	Information Type	Research Method	Principal Findings
United Nations (1992)	International comparative studies on environmental responsibility disclosures	Data source: annual reports for 1990. Sample: 222 transnational companies from six industries: chemicals, forestry and forestry products, metals, motors, petroleum and petro-chemicals, and pharmaceuticals, soaps and cosmetics. Method: Survey. Disclosure areas: environment.	Almost 86% of the sampled firms made disclosure, and the most frequent disclosures were environmental policy and programs, environmental improvements, and financial matter associated with the environment. Environmental information disclosed was often not quantified. Three quarters of the firms surveyed worldwide had environmental policies. The awareness of environmental issues was high while the level of quantitative and consistent disclosure was relatively low.
KPMG Peat Marwick (1992)	International comparative studies on environmental responsibility disclosures	Data source: annual reports for 1991. Sample: 282 listed companies from the top 100 companies in USA, Canada, and UK. Method: Survey. Disclosure areas: environment.	Amount of environmental information was limited, and there were about four times as much quantitative data on environmental issues and considerably more financial data in US companies as compared to Canadian and UK companies. There was a high level of companies which produced environmental policy statements in all three countries. Environmental reporting was still in its infancy amongst most leading companies in UK, US, and Canada.

Table 5 (Continued)

International Comparative Studies on Social Disclosure

Researcher(s)	Information Type	Research Method	Principal Findings
Adams and Roberts (1995)	International comparative studies on social responsibility disclosures	Data source: annual reports for 1993. Sample: 150 companies from six countries: Germany, The Netherlands, France, Sweden, the UK and Switzerland. Classification: 10 specific social and ethical items classified into 9 different types. Theory: Legitimacy theory & political economy theory. Unit of analysis: quantitative measures (no. of pages); qualitative measures (area of business covered, types of disclosure, time period covered and extent of coverage). Statistics: Descriptive Statistics.	Country specific differences existed in the incidence of corporate social disclosures made. The majority of the samples disclosed customer relations information. All the German and British companies disclosed social information. The majority of companies devoted little space to social disclosures. Quality of most disclosures made was low, and information was very brief and incomplete. Frequency, volume, quality and nature of social disclosures were likely to depend on the political, social, cultural and economic environment in which a company operates.

From the political economy perspective, companies were perceived as disclosing social information voluntarily with a view to sustaining and legitimising current political and economic frameworks in the communities. The two researchers contended that social disclosures were influenced by public social priorities, government pressure, environmental pressure, and corporate image.

C. B. Roberts (1991) examined the corporate environmental disclosures across mainland Europe, with respect both to overall level and type of information disclosed, and to explore the issue of whether or not there were consistent differences in the patterns of disclosures found across the various European countries. A sample of 110 companies from five of the largest mainland European countries were considered in the study, namely Germany, France, Netherlands, Sweden, and Switzerland. Corporate social information disclosed was categorised to nine different groups, and the level of disclosures made was also captured.

Results of the study showed that the incidence of social information disclosure appeared fairly high, and the level varied considerably across the five countries from a high of 80% in Germany and Sweden to a low of 52% for France. Almost 68% of the companies provided at least one item of environmental information in the annual reports. Although the majority of companies providing information was fairly high, the level of disclosure for environmental information was generally low. Companies disclosed less environmental information than employee-related information. There was also evidence that certain country-specific patterns of disclosure existed. There was limited support for the conclusion that country location explained the level of some environmental disclosures. The existing evidence supported the conclusion that employee-related disclosures were often different from environmental disclosures. In particular, the former tended to exhibit clearer country-specific patterns, suggesting that such information might be provided in response to country-specific pressures. On the contrary, environmental disclosures did not appear to follow such country-specific patterns.

A survey by the United Nations (1992) working group of experts on international accounting standards and reporting found that environmental disclosures of transnational companies remained qualitative, descriptive, partial and difficult to compare. Annual reports of 222 transnational corporations for 1990 were chosen from six major global industries: chemicals, forestry and forestry products, metals, motors, petroleum and petro-chemicals, and pharmaceuticals, soaps and cosmetics. Almost 86% of the sampled firms made some kind of disclosure, and the most frequent disclosures were environmental policy and programs, environmental improvements, and financial matter associated with the environment. The environmental information disclosed was often not quantified, and rarely comparable between firms. It was also noted that three quarters of the firms surveyed worldwide had environmental policies. In short, it was found that the awareness of environmental issues was high while the level of quantitative and consistent disclosure was relatively low.

KPMG Peat Marwick (1992) surveyed 282 companies from the top 100 companies in the USA, Canada, and UK in 1991. It was noted that the amount of environmental information provided in the annual reports was limited; and there were about four times as much quantitative data on environmental issues and considerably more financial data in US companies as compared to Canadian and UK companies. Although there was a high percentage of companies which produced environmental policy statements in all three countries, only a quarter of the respondents in each country set future targets for environmental improvement. From the reports provided, there was little evidence in all three countries of any environmental auditing being carried out; and it was concluded that environmental reporting was still in its infancy amongst most leading companies in US, UK, and Canada.

A study was undertaken by Adams and Roberts (1995) to evaluate European corporate disclosures on ethical issues. To assess the extent of corporate social disclosure and whether or not the amounts and types of information disclosed in the annual report varied across countries, the social disclosures of companies in France, Germany, Netherlands, Sweden, Switzerland, and the UK were examined. For each of the six countries, the top 25 companies by turnover were included in the sample. Both the quality and quantity of reporting were captured, and measures used to give an indication of the quality of reporting included, where appropriate, the area of business covered (all of business, specific line of business, geographical areas or domestic operations), types of disclosure (financial, quantitative or descriptive), time period covered and extent of coverage (examples only or full coverage of all relevant items). Disclosures were analysed in ten different categories: customer relations; political donations, activities and statements; equal opportunities; community involvement and public welfare; sponsorship and advertising; charitable donations and activities; product safety and testing; foreign corrupt practices/ethical business practices; legal proceedings, litigation and liabilities; and investment policies.

Research findings indicated that 14% of the sampled companies provided no social information. The only two areas where the majority of the sample disclosed information were customer relations (63%) and political donations, activities or statements (51%). The incidence of reporting in other areas was low. Hence, the researchers contended that there were country specific differences in the incidence of disclosure. All the German and British companies disclosed social information. The majority of the companies devoted little space to social and ethical disclosures. As the findings were affected by the industry compositions of the companies sampled, country-specific patterns for social disclosure were not clearly explained.

The findings showed that the quality of most disclosures made was low. When social information was provided, it was typically very brief and incomplete. The disclosures made were all 'good news' disclosures. Companies neither critically appraised their activities nor discussed any shortcomings or negative aspects of their behaviour. The frequency, volume, quality and nature of social disclosures were found to be dependent on the political, social, cultural and economic environment in which companies operated.

Summary

In summary, there is a trend emerging for companies in other countries to voluntarily disclosure social responsibilities. While there is a lack of standardisation, researchers have examined the international voluntary disclosure practices of corporate social responsibility. It is indicated from the literature that themes on employee, product, community, and environment have been consistently used in corporate social disclosures across countries. Most countries seem to emphasise three types of social information, and these are in descending order of importance, human resources, community involvement, and environment. Evidence regarding the style, theme, amount, and location of disclosure has been gathered. It appears that certain country-specific patterns exist between countries and their disclosure of social responsibility information. Although there is a significant difference in the location and method of social disclosures applied between countries, no significant difference has been found regarding the amount of disclosure between the countries studied.

Conclusion

This chapter has reviewed the studies of corporate social responsibility disclosure and its reporting practices. Corporate social disclosure has been found to be made for a variety of reasons. The preceding discussion on prior studies of social disclosure reveals an association between corporate characteristics and the voluntary disclosure of corporate social information. Various findings were identified in past studies, and it has been noted that firm conclusions cannot be drawn in view of the diverse methodologies and conflicting findings. These resulted from the methodological weaknesses and shortcomings of previous studies. Sample sizes were small, and bias had arisen in constructing the sample of firms as the sample chosen included only large publicly listed companies with rather high political visibility; and the generalizability of the findings was therefore limited as reporting practices were not adequately reflected.

The current study is designed to overcome the methodological weaknesses of prior studies, and to examine the contemporary social disclosure practices by using stakeholder theory. The central focus of this study is social responsibility disclosures within a random sample of 1994 annual reports from the mineral mining industry in Australia. The present study differs from prior studies in that it focuses specifically on various types of social disclosures for one particular industry, and sample companies are randomly selected from the population frame. In particular, the extent of voluntary disclosure is measured against a more comprehensive model of social disclosure which comprises of five categories of voluntary social responsibility disclosure variables: environment, energy, product and services, human resources, and community involvement. In the next chapter, the theoretical framework employed, and the corporate characteristic variables hypothesised to relate to disclosure of socially responsible information will be discussed and presented.

CHAPTER 3

THEORETICAL FRAMEWORK, HYPOTHESES AND MODEL DEVELOPMENT

Introduction

This chapter proceeds with a discussion of the stakeholder concept and the stakeholder theoretical framework underlying this study. Based on this framework and the prior literature reviewed in Chapter 2, the research hypotheses tested in this study are formulated. Each of the hypotheses with respect to the theoretical framework and previous research findings is discussed. Finally, this chapter details the development of the social disclosure model which facilitates the explanation of the observed phenomenon - voluntary social responsibility disclosure.

Stakeholder concept

A stakeholder can be defined as "any group or individual who can affect or is affected by the achievement of an organisational goal" (Freeman, 1984 p. 53). Stakeholders include investors, creditors, employees, analyst advisers, business contacts, customers, suppliers, public interest groups, the government, and the community (Roberts, 1992). Taken from the broader corporate social accounting theory, modern business enterprises have responsibilities which are wider than their legal obligations to shareholders and encompass social obligations to stakeholders (Jones, 1990). Stakeholders are required to have sufficient power in order to influence managers decisions (Gray et al., 1995a). Without power, the stakeholders have no means by which managers' decisions can be influenced (Roberts, 1992).

Social responsibility activity can be considered as the managerial obligation to take action that protects and improves the welfare of society as a whole as well as organisational interest (Mathews et al., 1993; Lewis et al., 1995; Adams & Roberts, 1995). Accordingly, managers must strive to achieve both economic and societal goals. Hence, the underlying assumption in the social accountability models is that organisations are accountable to society for their actions. Through the mechanism of internal and external reporting, organisations respond to the accountability demands of society (Gray et al., 1995a; Lewis et al., 1995; Gibson & Guthrie, 1995). Management strives to meet and balance the conflicting demands of various stakeholders with a view to attaining corporate objectives; and the behaviour of various stakeholder groups is considered a constraint on the strategy that is developed by management to best match corporate resources with its environment (Roberts, 1992; Lewis & Mangos, 1995).

Stakeholder framework

The lack of a comprehensive theory has resulted in conflicting results for prior studies on corporate social responsibility activities. In view of these shortcomings, Ullmann (1985) developed a three-dimensional conceptual framework for explaining and predicting the correlations among corporate social disclosure, social performance, and economic performance activities based on the stakeholder concept of strategic management.

The three dimensions of the theoretical framework comprise stakeholder power, strategic posture, and economic performance. Stakeholder power refers to the stakeholder's ability to influence and control over management decisions and corporate resources. Strategic posture is the mode of response of corporate key decision makers concerning social demands. The third dimension concerns the past and current economic performance of the company, which directly impacts on the financial capacity to institute social responsibility activities. These three dimensions will be detailed in the next section. The effects of nine independent variables on social disclosure practices will be examined, and the formulation of hypotheses will be presented.

Hypothesis development

Nine independent variables are derived from the three dimensions of the stakeholder framework to facilitate the examination and explanation of the observed phenomenon - voluntary social responsibility disclosure. Proxies for stakeholder power are ownership diffusion, financial leverage, and membership of the Australian Mining Industry Council. The variable selected to represent the strategic posture toward social responsibility activities is the presence of a social responsibility group. As proxies of economic performance, return on equity, and systematic risk are selected. Control variables include company size, company age, and commercial production.

Stakeholder power

Stakeholder power is the first dimension of the stakeholder model, indicating that stakeholders have the capability to directly or indirectly control the resources required by a firm and the firm will thus respond to the intensity of stakeholder demands. The more critical stakeholder demands are to the continued viability and success of the corporation, the greater the expectation that stakeholder demands will be addressed and satisfied (Roberts, 1992). Modern business enterprises have responsibilities which are wider than their legal obligations and encompass social obligations to stakeholders. In the context of corporate social disclosure, "a responsible corporate citizen embodies social goals in its strategic plan and undertakes social responsibility activities; and it also makes public disclosure to its stakeholders about its social progress in meeting the demands of stakeholders and fulfilling these goals" (Lynn, 1992 p. 105).

Based on prior studies, an entity's reputation as being socially responsible has to be developed by performing and disclosing social responsibilities activities in order to manage and warrant a sound stakeholder relationship (Roberts, 1992; Gibson and O'Donovan, 1994; Fiedler and Lehman, 1995; Lewis & Mangos, 1995; Adams & Roberts, 1995). The more critical stakeholder's control over resources is to the continued viability and success of the organisation, the greater the willingness of the entity to satisfy the stakeholder's demands (Roberts, 1992). Without sufficient power, a stakeholder will have no means by which manager's decisions can be influenced. While one of the major objectives of an entity is to attain the ability to balance the conflicting demands of various stakeholders (Freeman, 1983), and social responsibility disclosure is regarded as an effective management strategy for dealing with stakeholders' demands (Lewis & Mangos, 1995); therefore it is predicted that the stakeholder power variables and social responsibility disclosure are correlated.

In the present study, the proxies selected for stakeholder power dimension are ownership diffusion, membership of the Australian Mining Industry Council, and financial leverage. These proxies represent the influences on corporate social disclosure, and they will be further discussed in the following sections.

Ownership diffusion

In this study, ownership diffusion is defined as the percentage of outstanding ordinary shares owned by the top twenty shareholders. According to Henderson and Peirson (1994), a company that is involved in socially desirable activities may publicly provide information on its socially responsible activities in recognition of its accountability to shareholders and to groups other than shareholders. Based on the findings of prior studies, shareholders are interested in having their companies report on social activities and they represent a source of demand for corporate social information (Guthrie & Parker, 1990; Fray et al., 1991; Henderson & Peirson, 1994; Epstein & Freedman, 1994).

Shareholders are one of the major 'power' groups in the context of the stakeholder relationship. According to Roberts (1992), the demands placed by shareholders on a company becomes broader when the distribution of ownership of the company becomes less concentrated. Diffused corporate ownership[9], especially where investors are concerned with corporate social activities, intensifies the pressure for a company to disclose social responsibility activities (Ullmann, 1985). From the stakeholder approach, it was suggested by Lewis & Mangos (1995) that stakeholders are required to have sufficient power to evaluate or influence the corporate strategic decisions. In essence, the greater the number of shareholders, the higher the stakeholder group's power to collectively influence manager's decisions. Therefore, it is predicted that firms widely held by shareholders are more likely to disclose socially responsible information to meet the demands of their stakeholders.

Roberts (1992) hypothesised that the wider the diffusion of corporate ownership, the higher the demands placed on the company by owners to make social responsibility disclosures.

[9]As per Australian Corporations Law, it is a mandatory requirement for listed companies to disclose the percentage of ordinary shares owned by the top twenty shareholders.

Findings of his research did not support the proposition that widespread share ownership increased corporate incentives to disclose social information. The insignificant relation between the diffusion of ownership and level of social disclosure might be explained by the limitations of the measure, that is, percentage of corporation owned by management and by individual shareholders owning more than 5% of outstanding shares. It was suggested that other measures of ownership diffusion might produce a different outcome.

Craswell and Taylor (1992) reported that firms with diverse ownership are more likely to voluntarily provide additional information in the annual reports. Subsequently, Christopher et al. (1996) empirically tested the association of the extent of voluntary environmental information in the annual reports of Australian listed mineral mining companies with ownership diffusion; and found that ownership diffusion was not related to the extent of environmental disclosure.

While research findings are conflicting, it is proposed in this study to further test that firms with a lower percentage of share ownership held by the top 20 shareholders are more likely to disclose socially responsible information. Hypothesis H1 is therefore formulated as follows:

H1: The extent of voluntary social responsibility disclosure in the annual reports of Australian listed mineral mining companies is negatively related to ownership diffusion.

Financial leverage

Leverage is defined by Belkaoui and Karpik (1989) as the ratio of total debt to total assets. It is chosen as a measure of creditor stakeholder power as it captures the importance of creditors as stakeholders relative to equity investors. Creditors can have a significant impact on the financial resources that a company may require for its continued operation. Capital structure decisions are part of an overall corporate stakeholder strategy and creditors are the prime stakeholders whose influences should be managed (Roberts, 1992). As leverage increases, lenders may demand more information in order to assess the possibility of a firm meeting its debt obligations, and the debtors will tend to disclose more corporate information through external reporting (Craswell & Taylor, 1992).

In the context of voluntary social disclosure, if a company perceives stakeholders as concerned with social responsibility activities, the company will have greater incentives to disclose its activities (Ullmann, 1985). The stakeholder concept recognises the ability of creditors to have an impact on corporate strategy and performance; and creditors are viewed as a major corporate stakeholder group whose interests must be addressed by management (Roberts, 1992). Since creditors have financial interest in the company and they play a crucial role in controlling the financial resources of a company; social responsibility disclosures may be used by management as a strategy to satisfy creditors' demands (Lewis & Mangos, 1995). Higher level of perceived creditor influences on corporate activities or functions will lead to a greater effort by management to meet expectations of creditors. Roberts (1992) posited that the greater the degree to which a corporation relies on debt financing, the more stakeholder power the creditors will have to influence management on corporate strategies, and the greater the degree to which corporate management would be expected to respond to creditor expectations concerning a corporation's role in social responsibility activities. His research findings supported that the level of corporate social responsibility disclosure is directly related to the degree to which a firm is leveraged.

Although the role of borrowing constraints in determining accounting method choices has been extensively researched, conflicting findings have been identified in prior studies. An inverse relationship between leverage and the disclosure of social information was identified by Belkaoui and Karpik (1989). Bradbury (1991) provided evidence in his study of firm-specific characteristics and voluntary interim earnings disclosures that leverage and the voluntary disclosure of corporate information were positively associated. McKinnon and Dalimunthe (1993) reported that leverage positively influenced the level of voluntary disclosure of segment information. In a corporate environmental responsibility study conducted by Christopher et al. (1996), leverage was used as a surrogate for the stakeholder power dimension. Since McGuire et al. (1988) suggested that time period of financial performance needs to be taken into account in conducting studies in the area of corporate social responsibility disclosure, Christopher et al. (1996) tested prior and current leverage on the extent of environmental disclosure, and an insignificant relationship was found between leverage and environmental disclosure.

While the research findings are conflicting, it is proposed in this study to further test that firms with high financial leverage are more likely to disclose socially responsible information. In order to take into consideration the different time period of financial leverage, hypotheses H2a and H2b are proposed as follows:

H2a: The extent of voluntary social responsibility disclosure in the annual reports of listed Australian mineral mining companies is positively related to financial leverage in the previous year.

H2b: The extent of voluntary social responsibility disclosure in the annual reports of listed Australian mineral mining companies is positively related to financial leverage in the current year.

Membership of Australian Mining Industry Council (AMIC)

The view of regulatory bodies as corporate stakeholders by Freeman (1984), and shared by Roberts (1992) is that government and other regulatory bodies are corporate stakeholders whose interests must be addressed by management. "High levels of governmental or regulatory influence on corporate activity would be expected to lead to a greater effort by management to meet expectations of the regulatory bodies" (Roberts, 1992 p. 602). Hence, management may use social responsibility disclosures as a strategy to meet the demands of regulatory bodies (Lewis & Mangos, 1995). In an analysis of environmental regulations, Hahn (1990) concluded that environmental policy decisions result from a struggle between key interest groups and specified industry influences.

The membership of AMIC is chosen because it is the primary professional organisation within the mining industry, and it employs activities to reduce scrutiny from government agencies and other interest groups. Its strategic importance can exert political influences to its members as to the compliance of policy and guidelines such as environmental standards.

In studying voluntary environmental disclosure, Christopher et al. (1996) selected membership of the AMIC as the proxy of regulatory constraints; and argued that mineral mining companies that were members of the AMIC were more likely to disclose environmental information to reduce regulatory or political constraints than non-AMIC companies. It was found that membership of the AMIC was significantly related to the extent of environmental disclosure.

Hence, due to AMIC's regulatory influence, it is predicted that mining companies that are members of the AMIC are more likely to undertake social activities and provide social information accordingly. Hypothesis 3 is then proposed as follows:

H3: The extent of voluntary social responsibility disclosure in the annual reports of Australian listed mineral mining companies is positively related to firm's membership of the Australian Mining Industry Council.

Strategic posture

Another dimension of Ullmann's (1985) model is strategic posture toward socially responsible activities. Strategic posture is seen as explaining the mode of response of a manager's concern for social demands. Strategic posture can either be active or passive. Managers who try to influence their firm's status with key stakeholders through social responsibility activities reflect an active posture. On the contrary, if a manager is not continuously monitoring its position with stakeholders and has no specific plans to address stakeholder influences, then this is regarded as a passive strategic posture. From a strategic posture perspective, the more active the posture, the greater the expected social disclosure (Ullmann, 1985).

Presence of a social responsibility group

An active strategic posture toward social demands is expected to result in greater social responsibility activities, and level of social disclosure (Roberts, 1992). If a firm has set up a social responsibility group to monitor its position with stakeholders and to develop specific plans and policies to address stakeholder influences, the firm is regarded as active in terms of strategic posture.

In their empirical studies on corporate social disclosure, Cowen et al. (1987) and Maheshwari (1992) concluded that the presence of a social responsibility group could explain the extent ot social disclosure. Christopher et al. (1996) used the presence of an environmental responsibility committee as the proxy for corporate strategic posture, and found no association between the presence of an environmental responsibility committee and corporate environmental disclosure.

While the research findings are conflicting, it is proposed in this study to further test that the presence of a social responsibility group is positively associated with the extent of social disclosure. Hypothesis H4 is formulated as follows:

H4: The extent of voluntary social responsibility disclosure in the annual reports of Australian listed mineral mining companies is positively related to the presence of a social responsibility group.

Economic performance

The third dimension of Ullmann's (1985) model deals with economic performance. Ullmann (1985) argued that economic performance determined the relative weight of social demand and the attention it received from management. Hence, economic demands have priority over social demands in a period of low profitability. In essence, economic performance influences and supports the financial capability of the company to undertake socially demanded programs or activities which are perceived to be costly (Belkaoui and Karpik, 1989; Roberts, 1992; Lewis & Mangos, 1995). Therefore, the more improved economic performance, the greater the social activities and disclosure. In this study, return on equity and systematic risk, have been selected as proxies of economic performance.

Return on equity (ROE)

Return on equity refers to the rate of return earned on assets provided by owners. This variable has generated diverse results in previous research. A positive relationship was identified between return on equity and social responsibility disclosure by Spicer (1978) and Roberts (1992). In contrast, a negative association was identified in prior studies by Bowman and Haire (1975), and Jaggi and Freedman (1992).

Gibson and O'Dononvan (1994) claimed that time period of financial performance influences the tendency of corporate environmental disclosure. Christopher et al. (1996) employed prior and current return on equity as the surrogate to examine the extent of environmental disclosure, and found that return on equity did not explain the extent of environmental disclosure.

While the research findings are diverse, it is proposed in this study to further test the proposition that firms with higher return on equity are more likely to voluntarily disclose socially responsible information. Taking into consideration the different time dimension of return on equity, hypotheses H5a and H5b are proposed as follows:

H5a: The extent of voluntary social responsibility disclosure in the annual reports of Australian listed mineral mining companies is positively related to the company's return on equity in the previous financial year.

H5b: The extent of voluntary social responsibility disclosure in the annual reports of Australian listed mineral mining companies is positively related to the company's return on equity in the current financial year.

Systematic risk (β)

Systematic risk is the contribution of the individual security to portfolio risk. Trotman and Bradley (1981) used systematic risk as the proxy to examine the extent of social disclosure, and found that systematic risk and the extent of social disclosure were positively associated. It was concluded that companies with high systematic risk might perceive social disclosure as a means of reducing this risk. In a study on determinants of corporate social disclosure, Belkaoui and Karpik (1989) also found a significant and positive association between systematic risk and the extent of social disclosure.

However, Roberts (1992) argued that corporations with a low measure of systematic risk were more likely to have higher levels of social disclosure. It was contended that companies exhibiting low systematic risk tended to have a more stable pattern of stock market returns, and stable economic performance would enhance the ability of a company to commit to socially responsible activities and disclosures. Roberts (1992) suggested that stakeholders might view socially responsible companies as better managed, and thus, less risky. In particular, social responsibility disclosures would provide information that the market uses in establishing the value of the company (Roberts, 1992). Hence, companies with low systematic risk tend to disclose their socially responsible activities to their stakeholders. In essence, the more favourable the economic performance of a company, the lower the total risk and systematic risk, and the more likely for the company to afford to engage in social activities and disclosures.

The association of systematic risk with the extent of social disclosure was empirically examined by Roberts (1992). Research findings indicated a significant and negative relationship between the extent of social disclosure and systematic risk, and provided evidence that companies with less stable patterns of stock market returns were relatively less likely to commit resources to social activities. Investigating the determinants of social disclosure, Lewis and Mangos (1995) used beta as the measure of systematic risk and found the association of systematic risk and the extent of social disclosure insignificant. Similarly, Christopher et al. (1996) empirically tested the relationship between systematic risk and the extent of environmental disclosure, and concluded that systematic risk was not associated with the extent of environmental disclosure.

While research findings are conflicting, it is proposed in this study to further test that companies with low systematic risk are more likely to disclose socially responsible information. Hence, hypothesis H6 is proposed as follows:

H6: The extent of voluntary social responsibility disclosure in the annual reports of Australian listed mineral mining companies is negatively related to the company's systematic risk.

Control variables

Company size, company age, and commercial production, represent certain aspect of stakeholder power, strategic posture, and economic performance which demonstrate the dimensions of the stakeholder framework. Hence, these three variables are treated as control variables[10] for this study.

Company size

It has been posited that corporate size is related to social responsibility activities as larger firms tend to be scrutinised by stakeholders including both the general public and socially sensitive special interest groups or pressure groups (Roberts, 1992; Cooke, 1989). It is explained by the stakeholder theory that large firms are more responsive to stakeholder power or the intensity of stakeholder demands (Roberts, 1992). In particular, size is associated with environmentally sensitive industries (Deegan & Gordon, 1994). Since the mining industry is sensitive to the environment, mining companies are more likely to be scrutinised by the public, interest groups and regulatory bodies (Dierkes & Preston, 1977; Deegan & Gordon, 1994). Cowen et al. (1987) stated that larger firms have more shareholders interested in corporate social activity, and are more likely to use formal communication channels to relate results of social endeavors to interested parties. Large companies also tend to have more stable economic performance, and therefore can commit to involvement in social responsibility endeavors (Spicer, 1978). In the context of stakeholder concept, social responsibility disclosure is regarded as an effective management strategy for dealing with stakeholders, and positive relationships are anticipated among social disclosure, social performance, and economic performance (Ullmann, 1985). Hence, company size is a significant variable associated with social responsibility disclosures, as larger firms are susceptible to political pressure and tend to disclose additional information externally as a means of enhancing their corporate image or meeting the demands of their stakeholders.

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[10] Control variables are variables which are likely to intervene other explanatory variables and should be controlled for in empirical studies (Roberts, 1992).

Using total assets and total sales as the proxy variable for company size, Trotman and Bradley (1981) investigated the determinants of social disclosure, and found a significant and positive relationship between company size and the extent of social disclosure. Consistent findings were noted when Cooke (1989) and Maheshwari (1992) examined the association of company size with corporate social disclosure employing total assets as the proxy. Belkaoui and Karpik (1989) and Roberts (1992) achieved the same research results when using total sales as the measure for company size.

Christopher et al. (1996) and Hackston and Milne (1996) studied environmental disclosure and social disclosure respectively, and selected total assets, total sales, and market capitalisation as the measure of company size. It was concluded that company size was significantly and positively associated with the extent of social disclosure.

Larger firms are considered more likely to disclose socially responsible information. This study considers three different measures for company size: total assets; total sales; and market capitalisation. Hypotheses H7a, H7b, and H7c are proposed as follows:

H7a: The extent of voluntary social responsibility disclosure in the annual reports of Australian listed mineral mining companies is positively related to total assets.

H7b: The extent of voluntary social responsibility disclosure in the annual reports of Australian listed mineral mining companies is positively related to total sales.

H7c: The extent of voluntary social responsibility disclosure in the annual reports of Australian listed mineral mining companies is positively related to total market capitalisation.

Company age

Company age refers to the number of years that a company has been listed on the Stock Exchange. "As a company matures, its reputation and history of involvement in social responsibility activities can become entrenched; and stakeholder expectations regarding sponsorship and involvement can make significant and costly changes in the corporate strategy as to social activities" (Roberts, 1992 p. 605). In terms of political influences, stakeholders will become alert when there is a withdrawal of sponsorship for social activities. Hence, when a company matures, relatively large amounts of socially responsible activities and disclosures will result from management perceptions of higher regulatory and political pressure from stakeholders (Roberts, 1992). Social responsibility disclosures which are viewed as an active strategic posture towards social demands will be more likely be of interest to regulatory bodies and political groups (Ullmann, 1985). Roberts (1992) investigated the relationship between company age and the extent of social disclosure. It was found that company age and social disclosure were positively associated.

Therefore, it is predicted that company age is directly related to the extent of corporate social disclosure. Hypothesis H8 is then formulated as follows:

H8: The extent of voluntary social responsibility disclosure in the annual reports of Australian listed mineral mining companies is positively related to the age of a company.

Commercial production

Commercial production of a mining company refers to a mining company's engagement or involvement in the extractive operation of unrefined minerals and/or in the processing of refining those minerals to reach the marketable stage (Christopher et al., 1996). Mining companies that are in commercial production are more likely to impact negatively on the environment, and therefore likely to disclose more environmental information than companies which are not involved in commercial production (Christopher et al., 1996). In their environmental disclosure study, it was hypothesised that commercial operations were associated with voluntary environmental disclosure. However, this variable was removed from subsequent analysis because all the mineral mining companies sampled had a commercial operation.

To further examine this variable in the current study, it is predicted that commercial production is directly associated with the extent of corporate social disclosure. Hypothesis H9 is then stated as follows:

H9: The extent of voluntary social responsibility disclosure in the annual reports of Australian listed mineral mining companies is positively related to commercial production.

Model of voluntary social disclosure

In order to examine the determinants of an observed set of reporting behaviour in the context of voluntary social responsibility disclosure, a social disclosure model is constructed. In developing the social disclosure model, the first step was to identify individual social disclosure items. It is recognised that there is no agreed list of items that should be disclosed for social responsibility reporting (Adams & Roberts, 1995). In an attempt to capture a wide ranging set of socially responsible information, the relevant literature (Trotman, 1979; Trotman & Bradley, 1981; Kelly, 1981; Pang, 1982; Singh & Ahuja, 1983; Teoh et al., 1984; Mathews, 1984; Cowen et al., 1987; Andrew et al., 1989; Belkaoui & Karpik, 1989; Cooke, 1989; Zeghal & Ahmed, 1990; Guthrie & Parker, 1990; Ness & Mirza, 1991; C. B. Roberts, 1991; Maheshwari, 1992; Freedman & Wasley, 1992; Lynn, 1992; Kirkham & Hope, 1992; Roberts, 1992; KPMG Peat Marwick, 1992; United Nations, 1992; Henderson & Peirson, 1994; Tilt, 1994; Gray et al, 1995a; Gibson & Guthrie, 1995; Lewis & Mangos, 1995; Adams & Roberts, 1995; Lewis et al., 1995; Hackston & Milne, 1996; and Christopher et al., 1996) was consulted extensively; and a random sample of 20 annual reports was reviewed. A model of voluntary social disclosure was developed. The model was constructed to measure the quantity of non-mandatory socially responsible information, and was classified into five categories: environment, energy, product and services, community involvement, and human resources.

To avoid duplication and mis-classification of the social disclosure items in the model, a senior academic and two post graduate students were requested to examine them. The analysis also served to warrant that none of the items were of a mandatory nature, or were required under current accounting standards or any other legislative obligations. After discussions for clarifications or amendments, a final model consisting of five categories (environment, energy, product and services, community involvement, and human resources) and 92 social disclosure items was confirmed. The voluntary social disclosure model is presented in Appendix A.

Summary

In the context of corporate social disclosure, three dimensions of the stakeholder theoretical framework have been reviewed and discussed in this chapter. Corporate characteristics which are based on prior studies, theory, and applicability to corporate social responsibility disclosure have been selected to develop a series of testable hypotheses within the stakeholder theoretical framework. To facilitate the examination of voluntary social disclosure, a social disclosure model has been constructed. In the next chapter, the research methodology employed in conducting this study will be detailed.

CHAPTER 4

RESEARCH METHODOLOGY

Introduction

This chapter aims to discuss the research design which constitutes the blueprint for the collection and measurement of data for a social disclosure model developed within the stakeholder theoretical framework. It also expresses both the structure of the research problem; and the plan and procedures to select the sources and types of relevant information so as to obtain answers to the research question - voluntary social disclosure by Australian listed mineral mining companies.

Sample selection

The sample companies were drawn from the Australian mineral mining companies listed on the Australian Stock Exchange (ASX) in 1994. Annual reports for 1994 were used as they were the most recently available annual reports at the time of this study. In order to determine the population frame, Australian mineral mining companies listed in the ASX Journal for the June and December 1994 editions were used as references; and a total of 366 companies was identified as the population frame. A computer was used to randomly select 183 companies as the sample used in this study, which accounted for 50% of the total population.

Within the sample selected, one company converted its liabilities into equity upon its issue of ordinary shares; and it encountered a 98% decrease in liabilities. Also, three companies which had an extraordinary level of liabilities were issued qualified audit opinions as going concerns. These four companies were identified as outliers because they represented inappropriate representations of the population from which the sample was drawn. Hence they were eliminated from the analysis as unrepresentative; and the total number of sample companies considered in this study then became 179. Sample companies were contacted by phone, and annual reports for each of the companies were obtained. A list of companies in the sample is detailed in Appendix B.

Research instrument

The corporate annual report was used as the main research instrument for this study. Annual reports are widely recognised as the principal means for corporate communication of activities and intentions to stakeholders; and are the primary source of social responsibility reporting by corporations, therefore, they are a valuable tool for analysing social disclosure (Wiseman, 1982; C. B. Roberts, 1991; Kirkham & Hope, 1992; Henderson & Peirson, 1994; Owen, 1994; Deegan & Gordon, 1995; Gray et al., 1995a; Adams & Roberts, 1995; Gibson & Guthrie, 1995; and Lewis et al., 1995).

Data collection

The primary source of data was the corporate annual report. Disclosure items relating to social responsibility disclosure were extracted from each of the annual reports chosen and recorded against the model of voluntary social disclosure constructed.

Most of the information regarding the firm-specific characteristics was obtained from the annual report. Data including total assets for 1993 and 1994, total debt for 1993 and 1994, total sales, percentage of ordinary shares held by the top twenty ordinary shareholders, presence of a social responsibility group, total ordinary shares for 1993 and 1994, net income before tax and extraordinary items for 1993 and 1994, net income after tax and extraordinary items for 1993 and 1994, and commercial production, was documented. Financial items in the annual reports of three of the companies chosen were expressed in their home country currencies. In order to convert the foreign currencies to Australian currency, the January 1995 issue of the Reserve Bank of Australia (RBA) Bulletin was used as a guide in determining the relevant end-of-month exchange rates since the RBA plays an important role in releasing exchange rates prevailing throughout Australia.

Apart from the annual report, information on firm-specific characteristics was collected from other sources. Other required information for each company sampled including systematic risk - Beta, and market capitalisation were obtained from the December edition of the 1994 Risk Measurement Service (RMS) published by the Australian Graduate School of Management

(AGSM). The age of the company, which is the number of years that a company has been listed on the Stock Exchange, was collected from Jobson's Mining Year Book 1994/95. To facilitate data collection, a data collection sheet was developed. A sample data collection sheet is contained in Appendix C.

Measurement of dependent variable

The dependent variable in this study is the extent of social responsibility disclosure (SOD) consisting of total and categories of social disclosure by listed Australian mineral mining companies in 1994. In measuring the extent of total and categories of social disclosure, a dichotomous index was adopted. Due to its unweighted and relatively less subjective nature, a dichotomous index was adopted for evaluating the presence and absence of social information in prior studies (for example, Kelly, 1981; Wiseman, 1982; Guthrie & Mathews, 1985; Zeghal & Ahmed, 1990; Ness & Mirza, 1991; Freedman & Wasley, 1992; and Maheshwari, 1992). "The purpose of the dichotomous indexing procedure was first to objectively measure the information contained in the disclosures and second to provide a systematic numerical basis for evaluating the extent of social disclosure" (Wiseman, 1982 p. 55). Since subject items are treated equally, misranking of items can be avoided (Marston & Shrives, 1991). However, treatment of equal importance regardless of quality of the subject item is perceived to be a deficiency of this method (Coy et al., 1991).

Using content analysis,[11] socially responsible information was extracted from each annual report and placed against the disclosure items within the five categories of the voluntary social disclosure model. The index for total and categories of social disclosure was calculated as disclosures being made in the annual report. The presence of a disclosure item was coded one whereas the absence of a disclosure item was assigned a zero. For the five social disclosure categories classified, disclosure items within each category were added to obtain a score for the particular category of social information. The score of each category was aggregated to make up the score for total social disclosure. Therefore, six index scores were computed for

[11] Content analysis has been widely adopted in previous social disclosure studies (for example, Guthrie & Mathews, 1985, Guthrie & Parker, 1990). It is a method of codifying the text or content of a piece of writing into various groups or categories depending on selected criteria (Weber, 1988). Following coding, quantitative scales are derived to permit further analysis.

each company for use in the subsequent statistical analysis. These included an index score for each of the five categories, and a total social disclosure index score.

The first category represented 17 items of environment related disclosure and the maximum score was 17. The second category consisted of 12 items of energy related disclosure and the maximum score was 12. The third category included 12 items of product and services related disclosure and the maximum score was 12. The fourth category represented 28 items of community involvement related disclosure and the maximum score was 28. The fifth category represented 23 items of human resources related disclosure and the maximum score was 23. Hence, the highest possible score for total social disclosure was 92, which was the maximum aggregate score for all categories in the voluntary social disclosure model.

Measurement of independent variables

Nine explanatory variables are tested in this empirical study; and the measurement of each of these variables will be discussed in this section. A summary outlining the measurement of independent variables is shown in Table 6.

(1) Ownership diffusion (OWNER)

Ownership diffusion measures the concentration of corporate ownership. This variable is defined as the percentage of outstanding ordinary shares held by the top twenty shareholders of the company. The measurement is consistent with the approach adopted by McKinnon and Dalimunthe (1993).

(2) Financial leverage (LEVER)

The ratio of total debts to total assets has been chosen as the measure for financial leverage. This measurement is consistent with the approach adopted by Anderson and Zimmer (1988); Belkaoui and Karpik (1989); McKinnon and Dalimunthe (1993); and Christopher et al. (1996). McGuire et al. (1988) contended that prior corporate financial performance has to be considered as an explanatory variable influencing corporate social disclosure. Therefore, the leverage for 1993 and 1994 (i.e., past and current year) are taken into account in this study.

(3) Membership of AMIC (MEMBER)

The corporate membership of AMIC is used as a measure of regulatory influences in the present study. The membership of AMIC was denoted by one; and the absence of membership was denoted by zero. This measurement is consistent with the method employed by Christopher et al. (1996).

(4) Presence of a social responsibility group (COMMIT)

For this study, the disclosure for the presence of a social responsibility group was denoted by one; and the absence of the group was denoted by zero. This approach was previously adopted by Cowen et al. (1987), Maheshwari (1992), and Christopher et al. (1996).

(5) Return on equity (ROE)

Return on equity is measured by net income after tax and extraordinary income to total ordinary shares. This is in line with the approach used by Spicer (1978), Cowen et al. (1987), Roberts (1992), Jaggi and Freedman (1992), Hackston and Milne (1996), and Christopher et al. (1996). The measure of return on equity for 1993 and 1994 (i.e. past and current year) are tested in this study.

(6) Systematic risk (RISK)

Systematic risk is the beta coefficient derived from the market portfolio, and is defined as the contribution of the individual security to portfolio risk. This measure was used by Trotman and Bradley (1981), Belkaoui and Karpik (1989), Roberts (1992), Lewis and Mangos (1995), and Christopher et al. (1996).

(7) Company size (SIZE): total assets (ASSETS); total sales (SALES); market capitalisation (CAP)

So as to provide a detailed review of the impact of company size on social disclosure, three measures have been tested in the present study: total assets (ASSETS); total sales (SALES); and market capitalisation (CAP). This approach is consistent with the measures adopted by Christopher et al. (1996), and Hackston and Milne (1996).

(8) Company age (AGE)

Company age refers to the number of years that a company has been listed on the Stock Exchange. This measurement is consistent with the approach adopted by Roberts (1992).

(9) Commercial production (PRODUCT)

Commercial production of a mining company refers to a mining company's engagement or involvement in the extractive operation of unrefined minerals and/or in the processing of refining those minerals to the marketable stage (Christopher et al., 1996). A dichotomous index is used to measure this variable: company engaged in commercial production was denoted by one; and company did not engage in commercial production was denoted by zero. This method was previously used by Christopher et al. (1996).

Table 6

Variable Definitions

Variables	Expected Sign	Measures
Dependent Variable		
1. SOD		
I) Total disclosure	N/A	Aggregate of dichotomous index scores for 92 disclosure items of the social disclosure model
II) Categories of disclosure	N/A	Aggregates of dichotomous index scores for disclosure items within each of the five categories of the model
		1 = Presence of a disclosure item, and 0 = Otherwise
Independent Variables		
Stakeholder Power		
1. OWNER	(-)	Percentage of Ordinary Shares Held by the Top 20 Ordinary Shareholders
2. LEVER	(+)	Total Debt to Total Assets for 1993 & 1994
3. MEMBER	(+)	Membership of the Australian Mining Industry Council: 1 = Member; and 0 = Otherwise

Table 6 (Continued)

Variable Definitions

Variables	Expected Sign	Measures
Strategic Posture		
1. COMMIT	(+)	Presence of a social responsibility group: 1 = Presence; and 0 = Otherwise
Economic Performance		
1. ROE	(+)	Return On Equity: Net Income after Tax and Extraordinary Items to Total Ordinary Shares for 1993 & 1994
2 RISK	(+)	Systematic Risk: OLS Beta of Corporate Security
Control Variables		
1. SIZE	(+)	Company Size: Total Assets (ASSETS), Total Sales (SALES), and Market Capitalisation (CAP)
2. AGE	(+)	Company Age: Number of years that a company has been listed on the Stock Exchange
3. PRODUCT	(+)	Commercial Production: 1 = Commercial Production, and 0 = Otherwise

Research design

Data analysis for the present study is divided into two stages. Firstly, Principal Components Analysis (PCA) is performed on the independent variables (firm-specific characteristics). PCA addresses the issue of analysing the underlying structure of relationships among a large number of variables by defining a set of common underlying dimensions for the factor matrix and transforming the variables into a new set of linear combinations (Hair et al., 1995). An advantage of using PCA is that the likelihood of harmful multicollinearity may be reduced.[12] The factor matrix is then rotated by VARIMAX rotation[13] to redistribute the variance more evenly and to simplify interpretation of the factor matrix. Alpha Factoring is applied to measure the reliability of the dimensions developed from the PCA. In Alpha Factoring, "the concern is with the reliability of the common dimensions rather than with the reliability of group differences" (Tabachnick & Fidell, 1989 p. 627). Using iterative procedures, communalities are estimated and coefficient alpha[14] for the dimensions are therefore maximised.

Univariate analysis is not performed in this study. Pokorny (1991) stated that an independent variable found to be significant in univariate analysis might become insignificant in multivariate analysis because of the interactions among the variables within the multiple regression model. "Although the hypotheses developed can be tested by univariate analysis, the model will become unrealistic because it simply takes account of one independent variable in the model" (Pokorny, 1991 p. 126). Doran (1989) also claimed that the prediction of the dependent variable can be enhanced by using more than one variable in the analysis. Given that the current study involves a single metric dependent variable (the extent of social responsibility

[12] This is especially relevant to this study which includes the three measures of size, prior and current year data for leverage and return on equity.

[13] VARIMAX rotation is "one of the orthogonal rotation methods which centers on simplifying the columns of the factor matrix to facilitate interpretation" (Hair et al., 1995 p. 383). With the VARIMAX rotation approach, the maximum possible simplification is reached if there are only 1s and 0s in a single column. That is, the VARIMAX method maximises the sum of variances of the required loadings of the factor matrix. "VARIMAX gives a clearer separation of the factors and the factor pattern obtained by VARIMAX rotation tends to be more invariant, and it has been proved to be very successful as an analytic approach to obtaining an orthogonal rotation of factors" (Hair et al., 1995 p. 384).

[14] Coefficient alpha is a measure derived in psychometrics for the reliability or generalizability of a score taken in a variety of situations (Tabachnick & Fidell, 1989).

disclosure) presumed to be related to two or more metric independent variables (firm-specific characteristics), multivariate analysis is the appropriate method of analysis after the data has been transformed and tested for its reliability (Hair et al., 1995).

In view of the arguments, multivariate analysis in the form of multiple regression is undertaken at the second stage of the data analysis. "Multiple regression analysis uses the independent variables whose values are known to predict the single dependent value" (Hair et al., 1995 p. 85). "It is able to analyse and predict the changes in the dependent variable in response to changes in the independent variables, and its objective is most often achieved through the statistical rule of least squares" (Tabachnick & Fidell, 1989 p. 13). In essence, multiple regression analysis fulfills two major objectives:

> "(1) It provides an objective means of assessing the predictive power of a set of independent variables, and maximises the overall predictive power of the independent variables. This linear combination of independent variables is formed to be the optimal predictor of the dependent measure. (2) It compares two or more sets of independent variables to ascertain the predictive power of each variate" (Hair et al., 1995 p. 98).

A multiple regression model is constructed for total social disclosure and for each of the five categories of disclosure against the selected firm-specific characteristics, and takes the following form:

$$\text{SOD (T)} = \beta_0 + \beta_1 \text{ OWNER} + \beta_2 \text{ LEVER}_{(yi)} + \beta_3 \text{ MEMBER} + \beta_4 \text{ COMMIT}$$
$$+ \beta_5 \text{ ROE}_{(yi)} + \beta_6 \text{ RISK} + \beta_7 \text{ SIZE}_{(1\text{-}3)} + \beta_8 \text{ AGE} + \beta_9 \text{ PRODUCT} + e_i$$

where

SOD (T)	is the dependent variable taking total or categories of voluntary social responsibility disclosure items measured by dichotomous index
β_0	is a constant value
β_n	represents the coefficient of predictive variables
$X_{(yi)}$	represents the variable in 1993 and 1994
$X_{(a\text{-}b)}$	represents the alternative continuous variables (total assets, total sales, and market capitalisation)
e_i	denotes the residual value

Multicollinearity can have harmful effects on multiple regression.[15] Measures used in this study to assess the degree and impact of multicollinearity are Tolerance level, Variance Inflation Factor (VIF) values[16], and Condition Indices[17].

Summary

The overall research strategies for the present study in the context of sample selection, research instrument, data collection, definition and measurement of dependent and independent variables, and research design have been reviewed and exhibited in this chapter. The results of the data analysis are detailed in the following chapter.

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[15] "Multicollinearity limits the size of the coefficient of determination and makes it increasingly more difficult to add unique explanatory prediction from additional variables. It also makes determining the contribution of each independent variable difficult because the effects of the independent variables are mixed or confound, owing to collinearity" (Hair et al., 1995 p. 126).

[16] "Tolerance is the amount of variability of the selected independent variable not explained by the other independent variables. Variance Inflation Factor (VIF) is the inverse of the tolerance value. Thus, very small tolerance values (and large VIF values) denote high collinearity. A common cutoff threshold is a tolerance value of 0.1, which corresponds to VIF values above 10" (Hair et al., 1995 p. 127).

[17] "Condition Indices represent the collinearity of combinations of variables in the data set and the threshold value is in a range of 15 to 30, with 30 the most commonly used value" (Hair et al., 1995 p. 153).

CHAPTER 5

ANALYSIS OF RESULTS

Introduction

This chapter presents and discusses the outcomes of the statistical analyses performed to test the research hypotheses formulated in Chapter 3, and the research methodology described in Chapter 4. Based on the results of the data analysis, the association of firm-specific characteristics with the extent of voluntary social disclosure, in terms of the social disclosure model, is interpreted in the light of the stakeholder framework.

Principal Component Analysis (PCA)

The first step of the PCA procedures was to select the number of factors to be retained for further analysis. COMMIT and MEMBER loaded on the SIZE dimension in the initial PCA, but they did not seem to be related and were excluded. AGE also loaded on the initial PCA and was excluded due to low communality[18]. Though these three variables had not been assured to be orthogonal to the factor process, they will be incorporated as separate variables in the OLS multiple regression analyses, which will be discussed in the subsequent sections.

Table 7 outlines the variables orthogonal to the factor process and their relative explanatory power indicated by their eigenvalues. With the application of the latent root criterion, five factors with eigenvalues greater than one were retained. The selected five factors represented 90.4 percent of the variance.

Table 8 presents the factor matrix after a VARIMAX rotation to simplify the structure. Factor 1 measured a Size dimension as it was related to ASSETS, SALES, and MARKET. Factor 2 measured a Leverage dimension as it related to LEVER93 and LEVER94. Factor 3 measured a Return on Equity dimension as it related to ROE93 and ROE94. Factor 4 consisting of OWNER and PRODUCT suggested an Ownership Diffusion dimension.

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[18] Communality refers to the amount of variance an original variable shares with all other variables included in the analysis.

Table 7

List of Variables Orthogonal to Factor Process

Variable	Communality	Factor	Eigenvalue	Pct of Var	Cum Pct
ASSETS	1.00000	1	3.40652	34.1	34.1
SALES	1.00000	2	2.04836	20.5	54.5
MARKET	1.00000	3	1.55962	15.6	70.1
ROE93	1.00000	4	1.02192	10.2	80.4
ROE94	1.00000	5	1.00292	10.0	90.4
LEVER93	1.00000	6	0.55737	5.6	96.0
LEVER94	1.00000	7	0.21699	2.2	98.1
OWNER	1.00000	8	0.15348	1.5	99.7
PRODUCT	1.00000	9	0.03182	0.3	100.0
RISK	1.00000	10	0.00099	0.0	100.0

Table 8

VARIMAX Rotated Component Analysis Factor Matrix

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
MARKET	**.96403**	.08966	.02191	.10568	-.01212
ASSETS	**.94664**	.02697	.02097	.07023	-.00340
SALES	**.88776**	.39202	.00833	.14656	-.01255
LEVER93	.15478	**.98636**	.00350	.02637	-.00605
LEVER94	.15733	**.98609**	-.00512	.02525	-.00453
ROE94	-.00039	.00123	**.93428**	.13332	-.01727
ROE93	.03886	-.00223	**.93301**	.13790	-.01758
OWNER	.04102	-.02075	-.16340	**.84179**	.08598
PRODUCT	.18964	.07540	-.09800	**.80529**	-.11540
RISK	-.01318	-.00666	-.02889	-.01909	**.99368**

Alpha Factoring

Alpha Factoring was used to test the reliability of the dimensions derived from the VARIMAX rotated component analysis factor matrix. In Alpha Factoring, Coefficient Alpha is the measure derived for the reliability of a score taken in a variety of situations (Tabachnick & Fidell, 1989). Using iterative procedures, communalities were estimated in Alpha Factoring; and the maximum coefficient alpha for the factors was obtained.

As presented in Table 9, the Coefficient Alpha for the three variables within the Size dimension was 0.8972, which was close to one, indicating a high degree of reliability after combining the three variables, ASSETS, SALES, and MARKET into one dimension. The Alpha Coefficients for factor 2 and factor 3 were 0.9993 and 0.8209 respectively illustrating that it was reliable to combine the variables LEVER93 and LEVER94, and ROE93 and ROE94, into separate dimensions. For the Ownership Diffusion dimension, the Alpha Coefficient for combining the two variables, OWNER and PRODUCT, into a factor was only 0.0476, suggesting a low level of reliability. Hence these two variables will be separately tested in subsequent OLS multiple regression analyses.

Table 9

Alpha Factoring

Factor	Variables	Coefficient Alpha
Factor 1	ASSETS	.8972
	SALES	
	MARKET	
Factor 2	ROE93	.9993
	ROE94	
Factor 3	LEVER93	.8209
	LEVER94	
Factor 4	OWNER	.0476
	PRODUCT	

Ordinary Least Squares (OLS) Multiple Regression

The preceding analysis of the dependent variable and independent variables facilitated the development of the following model:

SOD = Function (SIZE, LEVER, ROE, OWNER, PRODUCT, RISK, AGE, COMMIT, MEMBER)

Results of multiple regression analyses for the five categories of social disclosure (environment, energy, product and services, human resources, and community involvement) and total social disclosure are presented as follows:

Environment related disclosure

As shown in Table 10, the regression result of the environment related disclosure indicated an adjusted R^2 of 0.58653 which was statistically significant ($F = 29.05608$; $p = 0.00$). Six variables are found to be significant, namely, SIZE ($p = 0.00$), OWNER ($p < 0.005$), PRODUCT ($p < 0.05$), AGE ($p < 0.10$), COMMIT ($p < 0.10$) and MEMBER ($p = 0.00$). Except for OWNER and AGE, these variables are in the expected direction.

The Strategic Posture dimension (H4), and one out of three variables within the Stakeholder Power dimension (H3), significantly explains the extent of environment related disclosure whereas the Economic Performance dimension is not significant. Two control variables, company size (H7) and commercial production (H9) are also significant explanatory variables. Therefore, hypotheses H1 to H2b, H5, H6, and H8 are rejected.

Table 10

Result of Multiple Regression on Environment Related Disclosure

Variable	Beta	Tolerance	VIF	T	Sig T (One-tailed)
SIZE	.320911	.607476	1.646	5.190	.0000
LEVER	.004523	.960061	1.042	0.092	.4634
ROE	-.026994	.969827	1.031	-0.552	.2910
OWNER	.142869	.788191	1.269	2.632	.0047
PRODUCT	.122362	.700347	1.428	2.125	.0176
RISK	-.011371	.988988	1.011	-0.235	.4074
AGE	-.065733	.885700	1.129	-1.284	.1006
COMMIT	.094114	.658781	1.518	1.585	.0574
MEMBER	.430621	.647511	1.544	7.190	.0000

Adjusted $R^2 = 0.58653$; F-ratio = 29.05608 (p = 0.0000)

Energy related disclosure

As shown in Table 11, the regression result of the energy related disclosure indicated an adjusted R^2 of 0.53452 which was statistically significant (F = 23.71103; p = 0.00). Six variables are found to be significant, namely, SIZE (p = 0.00), LEVER ($p < 0.01$), OWNER ($p < 0.10$), AGE ($p < 0.10$), COMMIT ($p < 0.01$), and MEMBER ($p < 0.01$). Except for LEVER, OWNER, and COMMIT, these variables are in the expected direction.

One out of three variables within the Stakeholder Power dimension (H3) significantly explains the extent of energy related disclosure whilst the dimensions for Strategic Posture and Economic Performance are not significant. Two control variables, company size (H7) and company age (H8) are also significant explanatory variables. Therefore, hypotheses H1 to H2b, H4 to H6, and H9 are rejected.

Table 11

Result of Multiple Regression on Energy Related Disclosure

Variable	Beta	Tolerance	VIF	T	Sig T (One-tailed)
SIZE	.706568	.607476	1.646	10.769	.0000
LEVER	-.122723	.960061	1.042	-2.351	.0100
ROE	-.000313	.969827	1.031	-0.006	.4976
OWNER	.085854	.788191	1.269	1.491	.0690
PRODUCT	-.023595	.700347	1.428	-0.386	.3500
RISK	-.007393	.988988	1.011	-0.144	.4429
AGE	.074263	.885700	1.129	1.367	.0868
COMMIT	-.186169	.658781	1.518	-2.955	.0018
MEMBER	.161079	.647511	1.544	2.535	.0061

Adjusted $R^2 = 0.53452$; F-ratio = 23.71103 ($p = 0.0000$)

Product and services related disclosure

As shown in Table 12, the regression result of the product and services related disclosure indicated an adjusted R^2 of 0.22032 which was statistically significant ($F = 6.58888$; $p = 0.00$). Three variables, namely, SIZE ($p < 0.01$), COMMIT ($p < 0.01$), and MEMBER ($p < 0.05$) are significant and in the expected direction.

The Strategic Posture dimension (H4), and one out of three variables within the Stakeholder Power dimension (H3), significantly explain the extent of such disclosure whereas the dimension of Economic Performance is not significant. A control variable, company size (H7) is also a significant explanatory variable. Therefore, hypotheses H1 to H2b, H5, H6, H8, and H9 are rejected.

Table 12

Result of Multiple Regression on Product & Services Related Disclosure

Variable	Beta	Tolerance	VIF	T	Sig T (One-tailed)
SIZE	.221740	.607476	1.646	2.611	.0049
LEVER	-.002459	.960061	1.042	-0.036	.4855
ROE	-.058876	.969827	1.031	-0.876	.1911
OWNER	.038644	.788191	1.269	0.518	.3025
PRODUCT	.034768	.700347	1.428	0.440	.3304
RISK	-.049442	.988988	1.011	-0.743	.2293
AGE	-.074995	.885700	1.129	-1.066	.1439
COMMIT	.227563	.658781	1.518	2.791	.0030
MEMBER	.167489	.647511	1.544	2.036	.0217

Adjusted R^2 = 0.22032; F-ratio = 6.58888 (p = 0.00)

Human resources related disclosure

As shown in Table 13, the regression result of the human resources related disclosure indicated an adjusted R^2 of 0.49278 which was statistically significant (F = 20.21454; p = 0.00). Five variables, namely, SIZE (p = 0.00), OWNER (p = 0.00), PRODUCT ($p < 0.05$), COMMIT ($p < 0.05$) and MEMBER ($p < 0.05$) are significant. Apart from OWNER, the significant variables are in the expected direction.

The Strategic Posture dimension (H4), and one out of three variables within the Stakeholder Power dimension (H3), significantly explain the extent of social disclosure whereas the Economic Performance dimension is not significant. Two control variables, company size (H7) and commercial production (H9) are also significant explanatory variables. Therefore, hypotheses H1 to H2b, H5, H6, and H8 are rejected.

Table 13

Result of Multiple Regression on Human Resources Related Disclosure

Variable	Beta	Tolerance	VIF	T	Sig T (One-tailed)
SIZE	.465495	.607476	1.646	6.797	.0000
LEVER	.049555	.960061	1.042	0.910	.1822
ROE	-.011928	.969827	1.031	-0.220	.4131
OWNER	.255972	.788191	1.269	4.257	.0000
PRODUCT	.103312	.700347	1.428	1.620	.0536
RISK	-.029424	.988988	1.011	-0.548	.2922
AGE	-.037231	.885700	1.129	-0.656	.2563
COMMIT	.119979	.658781	1.518	1.824	.0350
MEMBER	.117136	.647511	1.544	1.766	.0396

Adjusted R^2 = 0.49278; F-ratio = 20.21454 (p = 0.0000)

Community involvement related disclosure

As shown in Table 14, the regression result of the community involvement disclosure indicated an adjusted R^2 of 0.49113 which was statistically significant (F = 20.08809; $p = 0.00$). Five variables, namely, SIZE ($p < 0.01$), OWNER ($p < 0.01$), PRODUCT ($p < 0.10$), COMMIT ($p = 0.00$) and MEMBER ($p = 0.00$) are significant. Except for OWNER, the significant variables are in the expected direction.

The Strategic Posture dimension (H4), and one out of three variables within the Stakeholder Power dimension (H3) significantly explain the extent of energy related disclosure whereas the Economic Performance dimension is not significant. Two control variables, company size (H7) and commercial production (H9) are also significant explanatory variables. Therefore, hypotheses H1 to H2b, H5, H6, and H8 are rejected.

Table 14

Result of Multiple Regression on Community Involvement Related Disclosure

Variable	Beta	Tolerance	VIF	T	Sig T (One-tailed)
SIZE	.184224	.607476	1.646	2.685	.0040
LEVER	.042433	.960061	1.042	0.778	.2190
ROE	-.040642	.969827	1.031	-0.749	.2276
OWNER	.153805	.788191	1.269	2.554	.0058
PRODUCT	.090878	.700347	1.428	1.422	.0784
RISK	-.009806	.988988	1.011	-0.182	.4278
AGE	.027660	.885700	1.129	0.487	.3135
COMMIT	.278363	.658781	1.518	4.226	.0000
MEMBER	.313868	.647511	1.544	4.724	.0000

Adjusted $R^2 = 0.49113$; F-ratio = 20.08809 (p = 0.0000)

Total social disclosure

As shown in Table 15, the regression result of total social disclosure indicated an adjusted R^2 of 0.71097 which was statistically significant (F = 49.64987; p = 0.00). The high adjusted coefficient of determination (adjusted R^2) demonstrated that the model had statistically significant explanatory power while the high F value indicated that the prediction accuracy of the model was also statistically significant. SIZE (p = 0.00), OWNER (p = 0.00), PRODUCT ($p < 0.01$), COMMIT (p = 0.00), and MEMBER (p = 0.00), are significant variables. Other than OWNER, these variables are in the expected direction.

The Strategic Posture dimension (H4) and one out of three variables within the Stakeholder Power dimension (H3) significantly explain the extent of social disclosure where the Economic Performance dimension is not significant. Two control variables, company size (H7) and commercial production (H9) are also significant explanatory variables. Therefore, hypotheses H1 to H2b, H5, H6, and H8 are rejected.

Table 15

Result of Multiple Regression on Total Social Disclosure

Variable	Beta	Tolerance	VIF	T	Sig T (One-tailed)
SIZE	.393323	.607476	1.646	7.608	.0000
LEVER	.019986	.960061	1.042	0.486	.3138
ROE	-.037201	.969827	1.031	-0.909	.1823
OWNER	.186393	.788191	1.269	4.107	.0001
PRODUCT	.113579	.700347	1.428	2.359	.0098
RISK	-.023960	.988988	1.011	-0.591	.2776
AGE	-.039395	.885700	1.129	-0.920	.1795
COMMIT	.183520	.658781	1.518	3.696	.0002
MEMBER	.357473	.647511	1.544	7.138	.0000

Adjusted R^2 = 0.71097; F-ratio = 49.64987 (p = 0.0000)

Tests for multicollinearity

To examine the possibility of harmful multicollinearity, the Tolerance levels and the coefficient of the Variance Inflation Factor (VIF) for total social disclosure and categories of social disclosure were examined. As shown in Tables 10 to 15, the high Tolerance value and the low level of Variance Inflation Factor denoted that harmful multicollinearity was not present in any of the variables reviewed. This was substantiated by low values of the Condition Indices.[19]

Summary of research findings

A summary of the statistical findings is shown in Table 16. The findings indicated that some of the variables are significant in a number of categories and in the expected direction, while some variables are significant in a number of categories but not in the expected direction. SIZE and MEMBER are the most significant explanatory variables for all the six categories and they are in the expected direction. Apart from energy related disclosure, COMMIT is significantly and positively related to all categories of social disclosure. PRODUCT is found to be significantly associated with total social disclosure, environment related disclosure, and human resources related disclosure, and in the expected direction. OWNER with the

[19] The Condition Indices are not tabled here. The values of Condition Indices for this study range from 1.0 to 2.456 which are below the threshold value of 15 to 30 for Condition Indices.

Table 16

Summary of Hypotheses Results for the Social Disclosure Model

	Social	Disclosure	Model			
Variables	**Environment**	**Energy**	**Product and Services**	**Human Resources**	**Community Involvement**	**Total Social Disclosure**
Stakeholder Power						
OWNER (H1)	s1 #	s4 #	n/s	s* #	s2 #	s* #
LEVER (H2a, H2b)	n/s	s2 #	n/s	n/s	n/s	n/s
MEMBER (H3)	s*	s2	s3	s3	s*	s*
Strategic Posture						
COMMIT (H4)	s4	s2 #	s2	s3	s*	s*
Economic Performance						
ROE (H5a, H5b)	n/s	n/s	n/s	n/s	n/s	n/s
RISK (H6)	n/s	n/s	n/s	n/s	n/s	n/s
Control Variables						
SIZE (H7a, H7b, H7c)	s*	s*	s2	s*	s2	s*
AGE (H8)	s4 #	s4	n/s	n/s	n/s	n/s
PRODUCT (H9)	s3	n/s	n/s	s3	s4	s2

Notes:

n/s = not significant   # = not in hypothesised direction

s* = significant at p = 0.00   s1 = significant at p < 0.005

s2 = significant at p < 0.01   s3 = significant at p < 0.05

s4 = significant at p < 0.10

exception of product and services related disclosure, LEVER and COMMIT for energy related disclosure and AGE for environment related disclosure are statistically significant but are not in the expected direction.

In terms of the stakeholder concept, the variables found to be significant in a number of categories but not in the expected direction may be attributed to a single factor or a number of factors in combination. The negative association with ownership diffusion may reflect the apathy of Australian shareholders. Creditors may be privy to information not voluntarily disclosed in the annual report and this may explain the unexpected direction for LEVER with energy related disclosure and the lack of significance for the remaining categories. Given that only energy related disclosure for COMMIT was significant and negatively associated while all other categories were significant is a perplexing result as is the negative association with AGE and environment related disclosure. However, this may not be the case in a longitudinal study. That these results are not consistent with Roberts (1992) may be due to his study focusing on larger American companies and not being limited to mineral companies as is the case in this study. Finally, companies may choose to disclose environmental matter in other than the annual report.

The empirical findings provide evidence that not all variables used within the stakeholder theoretical framework in this study explain voluntary social disclosure for Australian mining companies. The three dimensions of stakeholder theory are associated with different categories of social disclosure. Only one out of three variables within the Stakeholder Power dimension (H3) can explain total social disclosure, and all categories of social disclosure. The Strategic Posture dimension (H4) is associated with total social disclosure, and four other categories of social disclosure (environment related disclosure, product and services related disclosure, human resources related disclosure, and community involvement disclosure). Economic Performance dimension does not explain the extent of social disclosure or any of its five categories of social disclosure.

For the control variables, company size (H7) is the independent variable that is commonly associated with the extent of total and all five categories of social responsibility disclosure. Company age (H8) is associated only with energy related disclosure. Commercial production

(H9) is only significantly associated with total disclosure and three categories of social disclosure (environment, human resources, and community involvement).

Summary

This chapter has detailed the results of the empirical tests performed in testing the formulated hypotheses within a model of social disclosure. The findings provide evidence that not all variables used within the stakeholder theoretical framework explain voluntary social disclosure. In the next chapter, summary and findings of the current study will be presented. Limitations to this study, and new directions for future research will also be outlined.

CHAPTER 6

CONCLUSION

Summary

Chapter 2 reviews the related empirical studies in the field of corporate social responsibility disclosure and examines the determinants motivating firms to voluntarily disclose social information. The review of literature facilitated the development of a theoretical framework and the identification of explanatory variables (ownership diffusion, financial leverage, presence of a social responsibility group, membership of AMIC, return on equity, systematic risk, company size, company age, and commercial production) for explaining voluntary social disclosure.

Chapter 3 deals with the application of Ullmann's (1985) stakeholder theory in the present study to facilitate the development of nine hypotheses. Nine explanatory variables were derived from the three dimensions of the stakeholder framework to promote the examination and explanation of the observed phenomenon. For the Stakeholder Power dimension, the variables selected were ownership diffusion, leverage, and membership of the Australian Mining Industry Council. For the Strategic Posture dimension, the variable was the presence of a social responsibility group. For the Economic Performance dimension, the explanatory variables were return on equity, and systematic risk. Company size (total assets, total sales, and market capitalisation), company age and commercial production were identified as control variables. To facilitate an extensive evaluation of contemporary social reporting practices, a social disclosure model was constructed comprising categories of social disclosure for environment, energy, product and services, human services, and community involvement.

Chapter 4 presents the research design which includes the collection and measurement of data for the social disclosure model developed within the stakeholder theoretical framework. The plan and procedures involved in selecting the sources and types of relevant information to provide answers to the research question were detailed.

Chapter 5 outlines the results of the tests performed to evaluate the association between firm-specific characteristics and the extent of social disclosure with respect to total disclosure and categories of social disclosure within the stakeholder theoretical framework. Outcomes generated from the statistical analyses were interpreted.

Findings of the study

All of the OLS regression models for total disclosure and categories of social disclosure were statistically significant as shown by the high adjusted coefficient of determination and the high F value. The results within the regression models showed that corporate membership of the Australian Mining Industry Council, and company size, as jointly represented by three surrogates, namely, total sales, total assets, and market capitalisation, to be the most significant variables associated with total and five categories of social responsibility disclosure (environment, energy, product and services, human resources, and community involvement). The presence of a social responsibility group is also significantly related to the extent of total and four categories of social disclosure (environment, product and services, human resources, and community involvement). Company age is found to be significantly associated with energy related disclosure. Commercial production is only significant to the total and three categories of social disclosure (environment, human resources, and community involvement).

In the context of stakeholder theoretical framework, not all variables in the three dimensions of the theory are significant to the social disclosure model constructed. In particular, the extent of total disclosure and categories of social disclosure is explained by one out of the three variables within the Stakeholder Power dimension; whilst the Strategic Posture dimension explains the extent of total and categories of social disclosure except for energy related disclosure. The Economic Performance dimension does not explain the extent of total disclosure or any categories of social disclosure.

Consequently, the practice of voluntary social disclosure by Australian listed mineral mining companies is not fully explained by the stakeholder theoretical framework. The inclusion of other explanatory variables may also help to verify the appropriateness for applying the framework in future social disclosure studies.

The evidence of the present study implies that economic performance measures derived from the financial statements of corporate annual reports do not seem to be appropriate surrogates for evaluating voluntary social disclosure by Australian listed mineral mining companies. Thus, users cannot rely on this information to make informed economic decisions. However, where companies involved in commercial production are mature in age, larger in size, possess membership of the AMIC, and have a social responsibility group; there will be an association between these firm-specific characteristics and voluntary social disclosure. To improve the propensity to provide socially responsible information and to enhance the information usefulness of the annual reports, the issue of an accounting standard by accounting regulators on corporate social disclosure is desirable.

Limitations of the study

The present study suffers from several limitations: first, this study relies on publicly disclosed information in the annual reports. While annual reports are generally referred to source of corporate disclosure, they are not the only source to reveal all social disclosures that corporations are making (Gray et al., 1995b; Lewis et al, 1995; Tilt, 1994; C. B. Roberts, 1991; Zeghal & Ahmed, 1990). Second, due to the ever changing and exceedingly complex nature of the business environment, there are inherent restrictions to capture voluntary reporting practices of social information in a single period of observations. Third, this study has not measured the disclosure of socially responsible information against the firm's actual social performance.

Suggested areas for future research

The shortcomings of this study suggest directions for future research. First, the measurement of social disclosure should not be limited to the annual reports; other disclosure media can also be considered for inclusion in the social disclosure model. Second, in order to demonstrate clear country-specific reporting patterns, a longitudinal study may provide further insight, and it would also enhance the generalisability of the research findings. Third, as this study has not measured the disclosure of socially responsible information against the firm's actual social performance, the correlation between the observed corporate social disclosure and the degree of actual corporate social concern can be assessed in future research.

The findings of this study provides insight into the association between firm-specific characteristics within the stakeholder theoretical framework and the extent of voluntary social disclosure by Australian listed mineral mining companies in their 1994 annual reports. These results are of interest to stakeholders concerned with social responsibility disclosure.

REFERENCES

Abbott, W.F. & Monsen, R.J. (1979). On the measurement of corporate social responsibility self-reported disclosure as a method of measuring corporate social involvement. Academy of Management Journal, 22(3): 501-515.

Adams, C.A. & Roberts, C.B. (1995). Corporate ethics: An issue worthy of report?. Accounting Forum, 19(2/3): 128-142.

Alexander, G.J. & Buchholz, R.A. (1978). Corporate social responsibility and stock market performance. Academy of Management Journal, 21(3): 479-486.

American Psychological Association. (1994). Publication manual of the American Psychological Association. Washington, DC: The American Psychological Association.

Anderson, D. & Zimmer, I. (1988). Free cash flow theory and voluntary disclosure of funds statements. Paper presented at the annual conference and meeting of the Accounting Association of Australia and New Zealand (Vol. II), August, University House, Canberra.

Anderson, J.C. & Frankle, A.W. (1980). Voluntary social reporting: An iso-beta portfolio analysis. The Accounting Review, 55(3): 467-479.

Anderson, R.H. (1980). Attitudes of chartered accountants to social responsibility disclosure in Australia. The Chartered Accountant in Australia, 50(11): 13-16.

Andrew, B.H., Gul, F.A., Guthrie, S.E., & Teoh, H.Y. (1989). A note on corporate social disclosure practices in developing countries: the case of Malaysia and Singapore. British Accounting Review, 21(4): 371-376.

Armstrong, P. (1991). Contradiction and social dynamics in the capitalist agency relationship. Accounting, Organisations and Society, 16(1): 1-26.

Australian Graduate School of Management [AGSM]. (1994, December). Risk measurement service. Sydney: The University of New South Wales.

Australian Mining Industry Council [AMIC]. (1994). Annual Report.

Australian Stock Exchange Limited. (1994, December). Members' directory 1994/1995.

Ball, R.J. & Foster, G. (1982). Corporate financial reporting: A methodological review of empirical research. Journal of Accounting Research, 20(Supplement): 161-234.

Barrett, E. (1976). Financial reporting practices: disclosure and comprehensiveness in an international setting. Journal of Accounting Research, 14(1): 10-26.

Batley, H. & Tozer, L. (1993). Sustainable development: An accounting perspective. Accounting Forum, 13(1): 38-61.

Beaver, W. (1972). The behaviour of security prices and its implications for accounting research methods. Supplement to The Accounting Review: 407-437.

Belkaoui, A. (1976). The impact of the disclosure of the environmental effects of organisational behaviour on the market. Financial management, 5(4): 26-31.

Belkaoui, A. (1980). The impact of socio-economic accounting statements on the investment decision: an empirical study. Accounting, Organisations and Society, 5(3): 263-283.

Belkaoui, A. & Karpik, P.G. (1989). Determinants of the corporate decision to disclose social information. Journal of Accounting, Auditing, and Accountability, 2(1): 36-51.

Benston, G. (1982). An analysis of the role of standards in enhancing corporate governance and social responsibility. Journal of Accounting and Public Policy, 15(1): 5-17.

Benston, G. (1982). Accounting and corporate accountability. Accounting, Organisations and Society, 17(1): 87-105.

Beresford, D. & Cowen, S. (1979). Surveying social responsibility in disclosure annual reports. Business Horizons, 10: 15-20.

Blundell, L. & Booth, P. (1988). Teaching innovative accounting topics: student reaction to a course in social accounting. Accounting and Finance, 28(1): 75-85.

Bonyhady, T. (1992). Environmental protection and legal change. NSW: The Federation Press.

Booth, P., Moorer, K., & McNamara, R. (1987). Researching the information content of social responsibility disclosure: A reply. British Accounting Review, 19(2): 177-181.

Bowen, R., Noreen, E., & Lacey, J. (1981). Determinants of the corporate decision to capitalised interest. Journal of Accounting and Economics, 3: 151-179.

Bowman, E.H. (1978). Strategy, annual reports, and alchemy. California Management Review, 20(3): 64-71.

Bowman, E.H. & Haire, M. (1975). A strategic posture toward corporate social responsibility. California Management Review, 18(2): 49-58.

Bowman, E.H. & Haire, M. (1976). Social impact disclosure and corporate annual reports,. Accounting, Organisations and Society, 1(1): 11-21.

Bradbury, M.E. (1991). Characteristics of firms and voluntary interim earnings disclosures: New Zealand evidence. Pacific Accounting Review, 3(1): 37-62.

Bradbury, M.E. (1992). Voluntary disclosure of financial segment data: New Zealand evidence. Accounting and Finance, 23(1): 15-26.

Bragdon, J.H. & Marlin, J.A.T. (1972). Is pollution profitable?. Risk Management, 19(4): 9-18.

Brockhoff, K. (1979). A note on external social reporting by German companies: A survey of 1973 company reports. Accounting, Organisations and Society, 10(1): 77-85.

Brooks, L.J. (1980). An attitude survey approach to the social audit: the southam press experience. Accounting, Organisations and Society, 5(3): 123-132.

Burchell, S., Clubb, C., Hopwood, A.G., Hughes, J., & Nahapiet, J. (1980). The role of accounting in organisations and society. Accounting, Organisations and Society, 5(1): 5-27.

Burchell, S., Clubb, C., & Hopwood, A.G. (1985). Accounting in its social context: towards a history of value added in the United Kingdom. Accounting, Organisations, and Society, 10(4): 381-414.

Buzby, S. (1974). Selected items of information and their disclosure in annual reports. The Accounting Review, 49(3): 423-435.

Buzby, S.L. & Falk, H. (1979). Demand for social responsibility information by university investors. The Accounting Review, 54(1): 23-37.

Buzby, S.L. & Falk, H. (1978). A survey of the interest in social responsibility by mutual funds. Accounting, Organisations and Society, 3(2): 191-201.

Carroll, A.B. (1989). Business and society: Ethics and stakeholder management. South-Western Publishing Co.

Chan, R.S. (1975). Social and financial stewardship. The Accounting Review, 50(3): 533-543.

Chen, K.H. & Metcalf, R.W. (1980). The relationship between pollution control record and financial indicators revisited. The Accounting Review, 55(1): 168-177.

Choi, F.D.S. (1973). Financial disclosure and entry to the European capital markets. Journal of Accounting Research, 11(2): 159-179.

Chow, C.W. (1982). The demand for external auditing: Size, debt and ownership influences. The Accounting Review, 57(2): 272-291.

Chow, C.W. & Wong-Boren, A. (1987). Voluntary financial disclosure by Mexican corporations. The Accounting Review, 62(3): 533-541.

Chou, Y. (1992). Statistical analysis for business and economics. New York: Elsevier Science Publishing Co. Inc.

Christopher, T., Hutomo, S., & Monroe, G. (1996). Voluntary environmental disclosure by Australian listed mineral mining companies: An application of stakeholder theory. Unpublished paper, Edith Cowan University, Perth, Western Australia.

Cochran, P.L. & Wood, R.A. (1984). Corporate social responsibility and financial performance. Academy of Management Journal, 27(1): 42-56.

Cooke, T.E. (1989). An empirical study of financial disclosure by Swedish companies. London: Garland Publishing Inc.

Cooper, D.J. & Sherer, M.J. (1984). The value of corporate accounting reports: Arguments for a political economy. Accounting, Organisations and Society, 9(3): 207-232.

Cooper, D.J. (1980). Discussion towards a political economy of accounting. Accounting, Organisations and Society, 5(2): 161-166.

Cooper, C. (1992). The non and nom of accounting for (m)other nature. Accounting, Auditing and Accountability Journal, 5(3): 16-39.

Cooper, D.J. & Sherer, M.J. (1984). The value of corporate accounting reports: arguments for a political economy of accounting. Accounting, Organisations and Society, 9(3 & 4): 207-232.

Copeland, R.M. (1968). Income smoothing - empirical research in accounting: Selected studies. Journal of Accounting Research: 101-116.

Cowen, S.S., Ferreri, L.B., & Parker, L.D. (1987). The impact of corporate characteristics on social responsibility disclosure: A typology and frequency based analysis. Accounting, Organisations and Society, 12(2): 111-122.

Cox, C.T. (1985). Further evidence on the representativeness of management earnings forecasts. The Accounting Review, October, 60(4): 692-701.

Coy, D., Tower, G., & Dixon, K. (1991). Quantifying the quality of tertiary education annual reports. Accounting and Finance, 33(2): 121-129.

Craswell, A.T. & Taylor, S.L. (1992). Discretionary disclosure of reserves by oil and gas companies: An economic analysis. Journal of Business Finance and Accounting, 19(2): 295-308.

Daley, L.A. & Vigeland, R.L. (1983). The effects of debt covenants and political costs on the choice of accounting methods: The case of accounting for R&D costs. Journal of Accounting and Economics, 5: 195-211.

Deakin, E.B. (1976). Distributions of financial accounting ratios: Some empirical evidence. The Accounting Review, 51(1): 90-96.

Deakin, E.B. (1979). An analysis of differences between non-major oil firms using successful efforts and full cost methods. The Accounting Review, 54(4): 722-734.

Deegan, C.M. & Gordon, B. (1994). An analysis of the incentives of Australian firms to provide environmental information within their annual accounts. Paper presented at the Accounting Research Group Seminar Series, Edith Cowan University, Perth, Western Australia.

Deegan, C.M. & Gordon, B. (1995). Towards a positive theory of environmental disclosures. Paper presented at the British Accounting Association Annual Conference, University of Strathclyde, Glasgow, Scotland.

Deegan, C.M. & Hallam, A. (1991). The voluntary presentation of value added statements in Australia: A political cost perspective. Accounting and Finance, 31(1): 1-20.

Dhaliwal, D. (1980). The effect of the firm's capital structure on the choice of accounting network. The Accounting Review, 50(1): 78-84.

Dickson, A. (1974). Alternative technology and the politics of technical change. Glasgow: Fontana.

Dierkes, M. (1979). Corporate social reporting in Germany: Conceptual developments and practical experience. Accounting, Organisations and Society, 4: 87-109.

Dierkes, M. & Antal, A. (1985). The usefulness and use of social reporting information. Accounting, Organisations and Society, 10(1): 29-34.

Dierkes, M. & Preston, L. E. (1977). Corporate social accounting reporting for the physical environment: A critical review and implementation proposal. Accounting, Organisations and Society, 2(1): 3-22.

Doran, H. (1989). Applied regression analysis in economics. New York: Marcel Dekker, Inc.

Ekins, P. (1986). The living economy: A new economics in the making. London: Routledge.

Epstein, M., Flamholtz, E., & McDonough, J.J. (1976). Corporate social accounting in the United States of America: State of the art and future prospects. Accounting, Organisations and Society, 1(1): 23-42.

Epstein, M.J. & Freedman, M. (1994). Social disclosure and the individual investor. Accounting, Auditing & Accountability Journal, 7(4): 94-109.

Estes, P. (1976). Standards for corporate social reporting. Management Accounting, 58(5): 19-22.

Estes, R.W. (1972). Socio-economic accounting and external diseconomies. The Accounting Review, 47(2): 284-290.

Ewer, S.R., Nance, J.R., & Hamlin, S.J. (1992). Accounting for tomorrow's pollution control. Journal of Accountancy, 174(1): 69-74.

Fama, E. (1980). Agency problems and the theory of the firm. Journal of Political Economy, 88(2): 288-307.

Ferris, K.R. (1975). Profit forecast disclosure: The effect on managerial behaviour. Accounting and Business Research, 5(18): 133-139.

Fiedler, B. & Lehman, G. (1995). Accounting, accountability and the environmental factor. Accounting Forum, 19(2/3): 195-204.

Firth, M. (1979). The impact of size, stock market listing, and auditors on voluntary disclosure in corporate annual reports. Accounting and Business Research, 9(36): 273-280.

Fisher, A.C. (1981). Resource and environmental economics. United Kingdom: Cambridge University Press.

Flint, D. (1971). The role of the auditor in modern society: An exploratory essay. Accounting and Business Research, 1(4): 287-293.

Fogler, H.R. & Nutt, F. (1975). A note on social responsibility and stock valuation. Academy of Management Journal, 18(1): 155-160.

Freedman, M. & Jaggi, B. (1982). Pollution disclosures, pollution performance and economic performance. Omega, 10(2): 167-176.

Freedman, M. & Jaggi, B. (1988). An analysis of the association between pollution disclosure and economic performance. Accounting, Auditing and Accountability Journal, 1(2): 43-58.

Freedman, M. & Wasley, C. (1990). The association between environmental performance and environmental disclosure in annual reports and 10Ks. Advances in Public Interest Accounting, 3: 183-193.

Freeman, R. (1983). Strategic management: A stakeholder approach. Advances in Strategic Management, 1: 31-60.

Freeman, R. (1984). Strategic management: A stakeholder approach. London: Pitman Publishing Inc.

Fry, F. & Hock, R.J. (1976). Who claims corporate responsibility? The biggest and the worst. Business and Society Review/Innovation, 18: 62-65.

Gibson, R. & Guthrie, J. (1995). Recent environmental disclosures in annual reports of Australian public and private sector organisations. Accounting Forum, 19(2/3): 111-127.

Gibson, K. & O'Donovan, G. (1994). Green accounting in Australia: myth or reality?. Paper presented at the AAANZ Annual Conference, Wollongong University, Wollongong, New South Wales, Australia.

Godfrey, J., Hodgson, A., Holmes, S., & Kam, V. (1994). Accounting theory. Queensland: John Wiley & Sons.

Gray, R (1992). Accounting and environmentalism: An exploration of the challenge of gently accounting for accountability, transparency and sustainability. Accounting, Organisations and Society, 17(5): 399-425.

Gray, R., Owen, D., & Maulders, K. (1988). Corporate social reporting: emerging trends in accountability and the social contract. Accounting, Auditing and Accountability Journal, 1(1): 6-20.

Gray, R., Owen, D., & Maulders, K. (1991). Accountability, corporate social reporting, and the external social audit. Advances in Public Interest Accounting, 4: 1-21.

Gray, R.H. & Laughlin, R.C. (1991). The coming of the green and the challenge of environmentalism. Accounting, Auditing and Accountability Journal, 4(3): 5-8.

Gray, R.H., Kouhy, R., & Lavers, S. (1995a). Corporate social and environmental reporting: A review of the literature and a longitudinal study of UK disclosure. Accounting, Auditing and Accountability Journal, 8(2): 47-77.

Gray, R.H., Kouhy, R., & Lavers, S. (1995b). Methodological themes: Constructing a research database of social and environmental reporting by UK companies. Accounting, Auditing and Accountability Journal, 8(2): 78-101.

Grojer, J. & Stark, A. (1977). Social accounting: A Swedish attempt. Accounting, Organisations and Society, 2(4): 349-386.

Guthrie, J. & Mathews, M.R. (1985). Corporate social accounting in Australasia. Research in Corporate Social Performance and Policy, 7: 251-277.

Guthrie, J. & Parker, L.D. (1989). Corporate social reporting: A rebuttal of legitimacy theory. Accounting and Business Research, 19(76): 343-352.

Hackston, D. & Milne, M.J. (1996). Some determinants of social and environmental disclosures in New Zealand companies. Accounting, Auditing and Accountability Journal, 9(1): 77-108.

Hagerman, R.L. & Zmijewski, M. (1979). Some economic determinants of accounting policy choice. Journal of Accounting and Economics, 1: 141-161.

Hahn, R. (1990). The political economy of environmental relations. Public choice, 1: 21-47.

Hair, J.F., Anderson, R.E., & Black, W.C. (1995). Multivariate data analysis with readings. USA: Prentice-Hall International Limited.

Hamburg, M. (1983). Statistical analysis for decision making. New York: Harcourt Brace Jovanovich Publishers.

Harte, G.E. & Owen, D.I. (1987). Fighting de-industrialisation: The role of local government social audits. Accounting, Organisations and Society, 12(2): 123-141.

Harte, G. & Owen, D.L. (1991). Environmental disclosure in the annual reports of British companies: A research note. Accounting, Organisations and Society, 4(3): 51-61.

Henderson, S. & Peirson, G. (1994). Issues in financial accounting. Melbourne: Longman Cheshire.

Herremans, I.M., Akathaporn, P., & McInnes, M. (1993). An investigation of corporate social responsibility reputation and economic performance. Accounting, Organisations and Society, 18(7/8): 587-604.

Hines, R. (1989). Financial accounting knowledge, conceptual framework projects and the social construction of the accounting profession. Accounting, Auditing and Accountability Journal, 2(2): 72-92.

Hines, R.D. (1988). Financial accounting: In communicating reality, we construct reality. Accounting, Organisations and Society, 13(3): 251-261.

Holthausen, R.W. & Leftwich, R.W. (1983). The economic consequences of accounting choice: Implications of costly contracting and monitoring. Journal of Accounting and Economics, 5: 77-117.

Holthausen, R.W. (1990). Accounting method choice: Opportunistic behaviour, efficient contracting and information perspectives. Journal of Accounting and Economics, 12: 207-218.

Hopwood, A. (1985). The tale of a committee that never reported; disagreements on intertwining accounting with the social. Accounting, Organisations and Society, 10(3): 361-377.

Hopwood, A.G. (1990). Accounting and organisational change. Accounting, Auditing and Accountability Journal, 3(1): 7-17.

Huizing, A. & Dekker, H.C. (1992). Helping to pull our planet out of the red: An environmental report of BSO/origin. Accounting, Organisations and Society, 17(5): 449-458.

Imhoff, E.A. (1978). The representativeness of management earnings forecasts. The Accounting Review, 53(4): 836-850.

Ingram, R. (1978). An investigation of the information content of (certain) social responsibility disclosures. Journal of Accounting Research, 16(2): 270-285.

Ingram, R. & Frazier, K.B. (1980). Environmental performance and corporate disclosure. Journal of Accounting Research, 18(2): 614-622.

Ingram, I.W. & Frazier, K.B. (1983). Narrative disclosures in annual reports. Journal of Business Research, 11: 49-60.

Jaggi, B. & Freedman, M. (1992). An examination of the impact of pollution performance on economic and market performance: Pulp and paper firms. Journal of Business, Finance and Accounting, 19(5): 697-713.

Jaggi, B. & Grier, P. (1980). A comparative analysis of forecast disclosing and non-disclosing firms. Financial Management, 9(2): 38-43.

Jensen, M.C. & Meckling, W.H. (1976). Theory of the firm: managerial behaviour, agency costs, and ownership structure. Journal of Financial Economics, 3(4): 305-360.

Jones, J. (1990). Corporate social accounting and the capitalist enterprise. London: Macmillan.

Kahl, A. & Belkaoui, A. (1981). Bank annual report disclosure adequacy internationally. Accounting and Business Research, 11(43): 189-195.

Kedia, B.L. & Kuntz, E.C. (1981). The contest of social performance: An empirical study of Texas banks. In L.E. Preston (Ed.), Research in corporate social performance and policy (133-154). Greenwich, CT: JAI Press.

Kelly, G.J. (1981). Australian social responsibility disclosures: Some insights into contemporary measurement. Accounting and Finance, 21(2): 97-107.

Kelly, L. (1983). The development of a positive theory of corporate management's role in external financial reporting. Journal of Accounting Literature, 2: 111-150.

Kirkham, P. & Hope, C. (1992). Environmental Disclosure in UK company annual reports. University of Cambridge Management Studies, Research Paper No. 1692.

KPMG. (1992). Environmental reporting: A survey of the top 100 companies in the US, UK, and Canada. London: KPMG Peat Marwick.

Lang, W., Neuhold, H., & Zemanek, K. (1991). Environmental protection and international law. London: Graham & Trotman Ltd.

Leftwich, R.W., Watts, R.L., & Zimmermam, J.L. (1981). Voluntary corporate disclosure: The case of interim reporting. Journal of Accounting Research Supplement, 19: 50-77.

Lessem, R. (1977). Corporate social reporting in action: An evaluation of British, European and American practice. Accounting, Organisations and Society, 2(4): 279-294.

Lewis, L., Humphrey, C., & Owen, D. (1992). Accounting and the social: A pedagogic perspective. British Accounting Review, 24(3): 219-233.

Lewis, N.R. & Mangos, N.C. (1995), Investigating the relationship between social disclosure and corporate economic performance in Australia: Environmental stakeholder power and Ullmann's contingency framework. Paper presented at the Asian Pacific Interdisciplinary Research in Accounting Conference, University of New South Wales, New South Wales, Australia.

Lewis, N.R., Mangos, N.C., & Tilt, C. (1995). A Review of Environmental Accounting: Issues for Australian Accountants, Corporations and Regulators. Melbourne: Australian Society of Certified Practising Accountants' Public Sector Accounting Centre of Excellence.

Lilien, S. & Pastena, V. (1982). Determinants of intramethod choice in the oil and gas industry. Journal of Accounting and Economics, 4: 145-170.

Lovelock, J. (1988). The ages of gaia. Oxford: Oxford University Press.

Lynn, M. (1992). A note on corporate social disclosure in Hong Kong. British Accounting Review, 24(2): 105-110.

Mahapatra, S. (1984). Investor reaction to a corporation social accounting. Journal of Business Finance and Accounting, 11(1): 29-40.

Maheshwari, G.S. (1992). Corporate characteristics & social responsibility reporting. Asian Review of Accounting, 1(1): 31-43.

Mak, Y.T. (1991). Corporate characteristics and the voluntary disclosure of forecast information: A study of New Zealand prospectuses. British Accounting Review, 23: 305-327.

Marlin, J.T. (1973). Accounting for pollution. The Journal of Accountancy, 135(2): 41-46.

Marston, C.L. & Shrives, P.J. (1991). The use of disclosure indices in accounting research: A review article. British Accounting Review, 23(1): 195-210.

Mathews, M.R. (1987). Social responsibility accounting disclosures and information content for shareholders: A comment on researching the information content of social responsibility disclosures. British Accounting Review, 19(2): 161-167.

Mathews, M.R. (1984). A suggested classification for social accounting research. Journal of Accounting and Public Policy, 3: 199-221.

Mathews, M.R. & Perera, M.H.B. (1993). Accounting theory and development. Sydney: Nelson.

Maunders, K.T. & Burritt, R. (1991). Accounting and ecological crisis. Accounting, Auditing and Accountability Journal, 4(3): 9-26.

McGuire, J.B., Sundrea, A. & Schneeweis, T. (1988). Corporate social responsibility and firm's financial performance. Academy of Management Journal, 31(4): 854-872.

McKinnon, J.L. & Dalimunthe, L. (1993). Voluntary disclosure of segment information by Australian diversified companies. Accounting and Finance, 33(1): 33-50.

McLeay, S. (1983). Value added: A comparative study. Accounting, Organisations and Society, 8(1): 31-56.

Medawar, C. (1976). The social audit: A political view. Accounting, Organisations and Society, 1(4): 389-394.

Mills, D. & Gardner, M. (1984). Financial profiles and the disclosure of expenditures for socially responsible purposes. Journal of Business Research, 12: 407-424.

Moskowitz, M.R. (1972). Choosing socially responsible stocks. Business and Society Review, 1: 29-42.

Myers, S.C. (1977). Determinants of corporate borrowing. Journal of Financial Economics, 5: 147-175.

Ness, K.E. & Mirza, A.M. (1991). Corporate social disclosure: A note on a test of agency theory. British Accounting Review, 23(3): 211-217.

Newbold, P. (1988). Statistics for business and economics. London: Prentice-Hall International Inc.

Noreen, E. (1988). The economics of ethics: A new perspective on agency theory. Accounting, Organisations and Society, 13(4): 359-369.

O'Leary, T. (1985). Observations on corporate financial reporting in the name of politics. Accounting, Organisations and Society, 10(1): 87-104.

Owen, D.I. (1990). Towards a theory of social investment: A review essay. Accounting, Organisations and Society 11(1): 249-266.

Owen, D., Gray, R., & Maunders, K. (1987). Researching the information content of social responsibility disclosure: A comment. British Accounting Review, 19(2): 169-175.

Owen, D.L. (1994). The need for environmental accounting standards. Accounting Forum, 17(1): 31-46.

Pang, Y.H. (1982). Disclosures of corporate social responsibility - What is being disclosed?. The Chartered Accountant in Australia, 53(1): 32-35.

Parker, L.D. (1977). Accounting for corporate social responsibility - The task of measurement. The Chartered Accountant in Australia, 48(4): 5-15.

Parker, L.D. (1982). Corporate annual reporting: A mass communication perspective. Accounting and Business Research, 12(48): 279-286.

Parket, L.R. & Eilbirt, H. (1975). Social responsibility: The underlying factors. Business Horizons, 18(4): 5-10.

Patten, D.M. (1992). Intra-industry environmental disclosures in response to the Alaskan oil spill: A note on legitimacy theory. Accounting, Organisations and Society, 17(5): 471-475.

Patten, D.M. (1990). The market reaction to social responsibility disclosures: The case of the Sullivan principles signings. Accounting, Organisations and Society, 15(6): 575-587.

Patten, D.M. (1991). Exposure, legitimacy, and social disclosure. Journal of Accounting and Public Policy, 10: 297-308.

Penman, S. (1980). An empirical investigation of the voluntary disclosure of corporate earnings forecasts. Journal of Accounting Research, Spring, 18(1): 132-160.

Pokorny, M. (1991). An introduction to econometrics. Oxford: Basil Blackwell Ltd.

Power, M. (1991). Auditing and environmental expertise: Between protest and professionalism. Accounting, Auditing and Accountability Journal, 4(3): 30-42.

Preston, L.E. (1978). Analyzing corporate social performance: Methods and results. Journal of Contemporary Business, 7: 135-150.

Preston, L.E. (1981). Research on corporate social reporting: Directions for development. Accounting, Organisations and Society, 6(3): 255-262.

Ramanathan, K.V. (1976). Toward a theory of corporate social accounting. The Accounting Review, 51(3): 516-528.

Reserve Bank of Australia Bulletin. (1995, January).

Riddell Information Services Pty Ltd. (1994/95). Jobson's mining year book.

Roberts, C.B. (1991). Environmental disclosures: A note on reporting practices in mainland Europe. Accounting, Auditing & Accountability Journal, 4(3): 62-71.

Roberts, J. (1991). The possibilities of accountability. Accounting, Organisations and Society, 16(4): 355-370.

Roberts, J. & Scapens, R. (1985). Accounting systems and systems of accountability - Understanding accounting practices in their organisational contexts. Accounting, Organisations and Society, 10(4): 443-456.

Roberts, R.W. (1992). Determinants of corporate social responsibility disclosure: An application of stakeholder theory. Accounting, Organisations and Society, 17(6): 595-612.

Rockness, J. (1985). An assessment of the relationship between US corporate environmental performance and disclosure. Journal of Business Finance and Accounting, 12(3): 339-354.

Rockness, J.W. & Williams, P.F. (1988). A descriptive study of social responsibility mutual funds. Accounting, Organisations and Society, 13(4): 397-411.

Ronen, J. & Livnat, J. (1981). Incentives for segment reporting. Journal of Accounting Research, 19(2): 459-481.

Rubenstein, D.B. (1992). Bridging the gap between green accounting and black ink. Accounting, Organisations and Society, 17(5): 501-508.

Ruland, W., Tung, S., & George, N.E. (1990). Factors associated with the disclosure of managers' forecasts. The Accounting Review, 65(3): 710-721.

Salamon, G.L. & Dhaliwal. D.S. (1980). Company size and financial disclosure requirements with evidence form the segmental reporting issue. Journal of Business Finance and Accounting, 7(4): 555-568.

Schreuder, H. (1981). Employees and the corporate social report: The Dutch case. The Accounting Review, 56(2): 109-122.

Shane, P.B. & Spicer, B.H. (1983). Marked response to environmental information produced outside the firm. The Accounting Review, 58(3): 521-538.

Shao, S.P. (1976). Statistics for business and economics. Ohio: Charles E. Merrill Publishing Company.

Siegel, S.P. (1956). Nonparametric statistics for the behavioral sciences. London: McGraw-Hill Book Co. Inc.

Singh, D.R. & Ahuja, J.M. (1983). Corporate social reporting in India. The International Journal of Accounting: 151-169.

Smith, C.W.& Warner, J.B. (1979). On financial contracting: An analysis of bond covenants. Journal of Financial Economics, 7: 111-161.

Spicer, B.H. (1978). Investors, corporate social performance and information disclosure: An empirical study. The Accounting Review, 53(1): 94-111.

Spicer, B.H. (1980). The relationship between pollution control records and financial indicators revisited: Further comment. The Accounting Review, 55(1): 178-185.

Tabachnick, B.G. & Fidell, L.S. (1989). Using multivariate statistics. New York: Harper Collins Publisher Inc.

Teoh, H. & Thong, G. (1984). Another look at corporate social responsibility and reporting: An empirical study in a developing country. Accounting, Organisations and Society, 9(2): 189-206.

Tilt, C. (1994). The influence of external pressure groups on corporate social disclosure: Some empirical evidence. Accounting, Auditing and Accountability, 7(4): 47-72.

Tinker, T. & Niemark, M. (1987). The role of annual reports in gender and class contradictions at general motors: 1917-1976. Accounting, Organisations and Society, 12(1): 71-88.

Tinker, T., Lehman, C., & Neimark, M. (1991). Falling down the hole in the middle of the road: Political quietism in corporate social reporting. Accounting, Auditing and Accountability Journal, 4(2): 28-54.

Tinker, A.M., Merino, B.D., & Neimark, M.D. (1982). The normative origins of positive theories: Ideology and accounting thought. Accounting, Organisations and Society 7(2): 167-200.

Trotman, K.T. (1979). Social responsibility disclosures by Australian companies. The Chartered Accountant in Australia, 49(8): 24-28.

Trotman, K.T. & Bradley, G.W. (1981). Associations between social responsibility disclosure and characteristics of companies. Accounting, Organisations and Society, 6(4): 355-362.

Trueman, B. (1986). Why do managers voluntarily release earnings forecasts?. Journal of Accounting and Economics, 8: 53-71.

Ullmann, A.E. (1976). The corporate environmental accounting system: A management tool for fighting environmental degradation. Accounting, Organisations and Society, 1(1): 71-79.

Ullmann, A.E. (1985). Data in search of a theory: A critical examination of the relationship among social performance, social disclosure, and economic performance of US firms. Academy of Management Review, 10(3): 540-557.

United Nations, (1992). Environmental disclosures: International survey of corporate reporting practices. UN, NY.

Vance, S.C. (1975). Are socially responsible corporations good investment risks?. Management Review, 64(8): 18-24.

Verrecchia, R.E. (1983). Discretionary disclosure. Journal of Accounting and Economics, 5: 179-194.

Watts, R.L. & Zimmerman, J.L. (1978). Towards a positive theory of the determinants of accounting standards. The Accounting Review, 53(1): 112-134.

Watts, R.L. & Zimmerman, J.L. (1986). Positive accounting theory. New Jersey: Prentice-Hall, Englewood Cliffs.

Watts, R.L. & Zimmerman, J.L. (1990). Positive accounting theory: A ten year perspective. The Accounting Review, 65(1): 131-156.

Waymire, G. (1985). Earnings volatility and voluntary management forecast disclosure. Journal of Accounting Research, 23(1): 268-295.

Waymire, G. (1986). Additional evidence on the accuracy of analyst forecasts before and after voluntary management earnings forecasts. The Accounting Review, 61(1): 129-142.

Weber, R.P. (1988). Basic content analysis. London: Sage Publications Inc.

Wildavsky, A. (1979). Economy and environment/rationality and ritual: A review essay. Accounting, Organisations and Society, 1(1): 117-129.

Williams, P. (1980). The evaluative relevance of social data. The Accounting Review, 55(1): 62-77.

Wiseman, J. (1982). An evaluation of environmental disclosure made in corporate annual reports. Accounting, Organisations, and Society, 7(1): 53-63.

Zeghal, D. & Ahmed, S.A. (1990). Comparison of social responsibility information disclosure media used by Canadian firms. Accounting, Auditing, & Accountability Journal, 3(1): 38-53.

Appendix A

Model of Voluntary Social Responsibility Disclosure

Environment
Acknowledgment of environmental damages
Air, water, noise and soil emissions
Awards for environmental protection or improvement
Comply with government environmental regulations or requirements
Conservation of natural resources
Cost for environmental rehabilitation (restoration) activities
Design or adopt facilities harmonious with the environment
Environment protection and rehabilitation, and litter control
Improvement to the environment
Land reclamation and reforestation
Office or committee for environmental affairs
Preservation of wildlife
Recognition and support from the public
Set up environmental objectives, strategies and practices
Treatment of waste disposal and recycling efforts
Undertake environmental audit
Undertake research and environmental impact studies

Energy
Acknowledgment of inefficient use of energy
Awards for efficient use of energy
Comply with government energy in the conduct of business operations
Conservation of energy in the conduct of business operations
Design or adopt facilities to reduce energy consumption
Officer or committee for energy related matters
Recognition and support from the public
Set up energy objectives and strategies
Undertake efficiency for energy consumption
Undertake research and impact studies

Appendix A (Continued)

Model of Voluntary Social Responsibility Disclosure

Use of alternative energy sources e.g. solar or wind power
Utilise waste materials for energy production

Product and Services

Acknowledge of complaints from customers
Awards for quality product
Establishment of product safety committees
Improve product safety
Marketing activities and practices
Operation achievement and statistics
Product innovation and technological advancement
Product or service related litigation
Product warranty terms and conditions
Recognition and support from the public
Research and development towards improvement of quality
Set up objectives and strategies for products and services

Human Resources

Ability to attract and retain talented people
Awards for sound management of human resources
Better work conditions for employees
Child care facilities
Comply with government regulations
Employee counseling services
Employee incentive scheme
Employee occupational health and safety
Enterprise bargaining
Equal employment opportunity policy and practices
Feedback and lines of communication

Appendix A (Continued)

Model of Voluntary Social Responsibility Disclosure

Fringe benefits
Home based work and flexi time
Increase wages above minimum standards
Industrial democracy
Industrial unrest and conflict
Lines of authority and responsibility
Multi-skilling
Organisational structure
Performance measurement or appraisal
Promotion, dismissal, reward and penalties
Recruitment policy
Redundancy and retrenchment
Review award system
Smoke free work environment
Staff training and development
Support youth training and unemployment schemes
Workers compensation

Community Involvement

Aid and counsel retired and disabled towards community awareness
Aid disaster victims
Aid medical research and donations to hospitals
Awards for building designs/aesthetic facilities
Awards for community contribution and support
Community relations officer or committee
Compliance with and support for national and international guidelines
Donations to community services and charities
Donations to the arts and sporting bodies
Donations to universities and other educational institutions
Export achievements
Involvement in illegal business or political practices

Appendix A (Continued)

Model of Voluntary Social Responsibility Disclosure

Open public road, forests and parks to the public
Preserve historic buildings and sites
Professional independence, ethics and commitment
Promote education, arts and sports
Recognition and support from the public
Recognition of employee contributions to the community
Sponsor public health projects or scholarships
Support Aboriginal welfare
Unsound financial operation and position
Volunteer services for community planning and improvement
Work experience programs for teenagers and students

Appendix B

List of Companies in the Sample

No.	Name
1.	Abador Gold NL
2.	Aberfoyle Limited
3.	Alcaston Mining NL
4.	Allstate Explorations NL
5.	Aquarius Exploration NL
6.	Arboyne NL
7.	Arcadia Minerals Limited
8.	Ashton Mining
9.	Associated Gold Fields NL
10.	Astro Mining NL
11.	Audax Resources NL
12.	Auralia Resources NL
13.	Austpac Gold NL
14.	Australasian Gold Mines NL
15.	Australian Gold Resources Limited
16.	Australian Overseas Resources Limited
17.	Australian Resources Limited
18.	Australian United Gold NL
19.	Beaconsfield Gold NL
20.	Border Gold Limited
21.	Bougainville Copper Limited
22.	Boulder Gold NL
23.	Burmine Limited
24.	Cambrian Resources NL
25.	Carpenter Pacific Resources NL
26.	Carrie Pacific Holdings Limited
27.	Centamin Limited

Appendix B (Continued)

List of Companies in the Sample

No.	Name
28.	Centaur Mining & Exploration Limited
29.	Central Kalgoorlie Gold Mines NL
30.	Central West Gold NL
31.	Chartfield Limited
32.	Climax Mining Ltd
33.	Cobalt Resources NL
34.	Compass Resources NL
35.	Consolidated Resources NL
36.	Coolawin Resources Limited
37.	Copperfied Gold NL
38.	Cove Mining NL
39.	CRA Limited
40.	Crest Resources Australia NL
41.	Crystal Mining NL
42.	Dalrymple Resources NL
43.	Defiance Mining NL
44.	Delta Gold
45.	Denehurst Limited
46.	Devex
47.	Dioro Expolration NL
48.	Diversified Mineral Resources NL
49.	Dome Resources NL
50.	Dominion Mining Limited
51.	Dragon Mining NL
52.	Eagle Bay Resources NL
53.	Eagle Mining Corporation NL
54.	East Coast Minerals NL

Appendix B (Continued)

List of Companies in the Sample

No.	Name
55.	Equatorial Mining NL
56.	Euralba Mining Limited
57.	Federation Resources NL
58.	Fimiston Mining Limited
59.	Forrestania Gold NL
60.	Fortuna NL
61.	Fraser Range Granite NL
62.	Gascoyne Gold Mines NL
63.	Gemcor Limited
64.	General Gold Resources NL
65.	Genesis Resources NL
66.	Geographe Resources Limited
67.	Glengarry Resources NL
68.	Gold & Mineral Exploration NL
69.	Gold Mines of Kalgoorlie Limited
70.	Gold Partners NL
71.	Gold Resources Limited
72.	Golden Shamrock Mines Limited
73.	Goldrim Mining Australia Limited
74.	Goldstream Mining NL
75.	Great Central Mines NL
76.	Greenvale Mining NL
77.	Grenfell Resources NL
78.	Gwalia Consolidated Limited
79.	Hallmark Gold NL.
80.	Haoma North West NL
81.	Herald Resources Limited

Appendix B (Continued)

List of Companies in the Sample

No.	Name
82.	Highlands Gold Limited
83.	Homestake Gold of Australia Limited
84.	Imdex NL
85.	Interchrome NL
86.	Intercontinental Gold & Minerals NL
87.	Jason Mining Limited
88.	Johnson's Well Mining NL
89.	Jubilee Gold Mines NL
90.	Julia Mines NL
91.	Kakadu Resources Limited
92.	Kalgoorlie Resources NL
93.	Keela - Wee Exploration Limited
94.	Kidston Gold Mines Limited
95.	Kiwi Gold Limited
96.	Laverton Gold NL
97.	Leader Resources NL
98.	Little River Goldfields NL
99.	Lone Star Exploration NL
100.	Lynas Gold NL
101.	Magnum Gold NL
102.	Majestic Resources NL
103.	Mallina Holdings Limited
104.	Marlborough Gold Mines NL
105.	Marymia Exploration NL
106.	Matlock Mining NL
107.	Melita Mining NL
108.	Merritt Mining NL

Appendix B (Continued)

List of Companies in the Sample

No.	Name
109.	MIM Holdings Limited
110.	Mineral Resources (N. Z.) Limited
111.	Mining Corporation of Australia Limited
112.	Mogul Mining NL
113.	Molopo Australia Limited
114.	Montague Gold NL
115.	Mount Burgess Gold Mining Company NL
116.	Mount Carrington Mines Limited
117.	Mount Conqueror Minerals NL
118.	Mount Edon Gold Mines
119.	Mt. Kersey Mining NL
120.	Mt Leyshon Gold Mines Limited
121.	National Resources Exploration Limited
122.	Nexus Minerals NL
123.	Noble Resources NL
124.	Normandy Poseidon Limited
125.	North Flinders Mines Limited
126.	Northern Gold NL
127.	Nova Resources NL
128.	Orion Resources NL
129.	Pacific Mining Limited
130.	Pact Resources NL
131.	Paget Mining Limited
132.	Pasminco Limited
133.	Perilya Mines NL
134.	Perserverance Corporation Limited
135.	Pinnacle Mining NL

Appendix B (Continued)

List of Companies in the Sample

No.	Name
136.	Placer Dome
137.	Placer Pacific Limited
138.	Platgold Pacific NL
139.	Plenty River Mining Company
140.	Plutonic Resources Limited
141	Poseidon Gold Limited
142.	Precious Metals Australia Limited
143.	Prima Resources NL
144.	Queensland Metals Corporation Limited
145.	Ramsgate Resources Limited
146.	Redfire Resources NL
147.	Resolute Resources Limited
148.	Roebuck Resources NL
149.	Ross Mining NL
150.	Sabminco NL
151.	Sabre Resourcs NL
152.	Samantha Gold NL
153.	Samson Exploration NL
154.	Seamet Limited
155.	Sedimentary Holdings Limited
156.	Sipa Resources International NL
157.	Solomon Pacific Resources NL
158.	Sons of Gwalia Limited
159.	Sovereign Rsources (Australia) NL
160.	St. Barbara Mines
161.	Striker Resources NL
162.	Takoradi Gold NL

Appendix B (Continued)

List of Companies in the Sample

No.	Name
163.	Target Resources Australia NL
164.	Tern Minerals Limited
165.	Titan Resources NL
166.	Trans Global Resources NL
167.	Triako Resources Limited
168.	Triton Resources Limited
169.	Troy Resources NL
170.	Union Mining NL
171.	Valdora Minerals NL
172.	Venture Exploration NL
173.	Wattle Gully Gold Mines NL
174.	Welcome Stranger Mining Company NL
175.	West Australian Metals NL
176.	Western Minerals NL
177.	Western Mining Corporation Limited
178.	Western Reefs Limited
179.	Westralian Sands Limited
180.	Windsor Resources NL
181.	Yardarino Mining NL
182.	Zanex NL
183.	Zapopan NL

Appendix C

Data Collection Sheet

COMPANY IDENTIFICATION

Company Name: ______________________________

Balance Date: ______________________________

		1993	1994
1.	No of Years that the Company Has Listed on the Australian Stock Exchange		________
2.	Percentage of Ordinary Shares Held by the Top 20 Ordinary Shareholders		________
3.	Total Sales		________
4.	Market Capitalisation		________
5.	Beta (β)		________
6.	Total Assets	________	________
7.	Total Debts	________	________
8.	Total Ordinary Shares	________	________
9.	Net Income (after extraordinary items and income tax)	________	________
10.	The Presence of a Social Responsibility Group	Yes	No
11.	Membership of AMIC	Yes	No
12.	Commercial Production	Yes	No

Appendix C (Continued)

Data Collection Sheet

Formulas: Financial Ratios

1. $$\text{Financial Leverage (1993)} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

$$\text{Financial Leverage (1994)} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

2. $$\text{Return on Equity (1993)} = \frac{\text{Net Income after Extraordinary Items and Income Tax}}{\text{Total Ordinary Shares}}$$

$$\text{Return on Equity (1994)} = \frac{\text{Net Income after Extraordinary Items and Income Tax}}{\text{Total Ordinary Shares}}$$