

CLOSELY-HELD CORPORATIONS PARTICIPATE LESS IN CORPORATE SOCIAL REPORTING

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Abstract

This study investigates the relationship between corporate social reporting (CSR) disclosures and firm characteristics (such as: financial performance and corporate structure) in 100 multinational companies that list on the main U.S. stock exchanges. By using content analysis method, it evaluates annual reports according to several criteria. The results show that the absolute measure of net income and firm size are significant predictors of CSR disclosures. This association does not hold for the relative measure of income and other variables. However, not surprisingly, closely-held shares percentage variable has a significant negative relationship with corporate social reporting. This reveals that closely-held corporations are expected to conceal more information from the public than others. In sum, the findings confirm that large firm and profitable firms are more likely to disclose their CSR practices, but less so when closely held.

Keywords : corporate social reporting, financial performance, corporate structure

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1. Introduction

Corporate reporting traditionally focuses on financial information to investors. But it often fails to inform stakeholders about the effect of corporate activities on society (Thompson and Zakaria, 2004). Recent studies document a growing awareness on the part of business executives that business has an obligation to help society even if there is no obvious profit increase (Holmes, 1976; Ostlund, 1977). In that light, Corporate Social Responsibility (CSR) has become an increasingly important part of corporate reporting. Leonard and McAdam (2003) state CSR includes elements such as environmental protection, social equity and economic growth, which has a strong affinity with the founding principles of quality management. With CSR being adopted by many as the means of assuring values based corporate governance, the quality community has the opportunity and responsibility to take leadership in promoting ethical business practices and driving CSR to regain consumer confidence. At the same time, advocates of CSR reporting have put forward some perceived benefits which an organization may derive from its provision, for example: increased customer loyalty, more supportive communities, the recruitment and retention of more talented employees, improved quality and productivity and the avoidance of potential reputational risks which may arise from environmental incidents (Idowu and Towler, 2004). In addition, failure to convince society of their social and environmental responsibility may cause them to lose their “licence

to operate” – an unwritten permit the society bestows on companies. That would trigger censure, boycotts, hijacking and eventual closure. CSR, therefore, will be vital to the long-run survival and prosperity of many companies (Thompson and Zakaria, 2004).

1.2. Background

In the US, companies under various regulatory regimes have been required for many years to report to public authorities about certain aspects of environment, health and safety issues related to their activities. Toxic Release Inventory (TRI) is an example of mandatory environmental and social disclosure schemes (Emtairah, 2002). Under the TRI, companies with more than 10 full-time employees are required to submit data on emissions of specified toxic chemicals to the Environmental Protection Agency (EPA). In addition, the Securities and Exchange Commission (SEC) requires disclosures on legislative compliance, judicial proceedings and liabilities relating to the environment in Form K-10 (KPMG, 2002). Overall, the US clearly has a more legislative emphasis, which produces a response in the annual report. In 2002, the KPMG international survey of corporate sustainability reporting shows that there are some Acts subject to environmental and social issues are under development. For example: 1. Corporate Code of Conduct Act (proposed August 2001): this Act requires US corporations that employ workers in foreign countries to make information available to the public concerning their protection of human rights, labour

rights and the environment. 2. The National Greenhouse Gas Emissions Inventory and Registry Act (proposed in 2001) requires public and private entities to have established a mandatory greenhouse gas inventory, registry and information system that can be made available to private and public entities to design efficient and effective reduction strategies and to encourage reductions. 3. The Children's Environmental Protection Act (proposed May 2001) this Act amends the Emergency Planning and Community Right-to-Know Act of 1986 to include additional reporting standards on toxic chemical releases that affect children.

1.3. Structure

In this research project, chapter 1 discusses the background of corporate social and environmental reporting in U.S., followed by the literature review on previous findings on corporate social reporting and its relevant theories. Chapter three states the methodology and hypotheses that used in this paper. Chapter four analyses the results of this study, detailed explanations will be discussed in this section as well. Finally, section five concludes this research project and future research direction are given in chapter 5.

2. Literature Review

2.1. CSR and sustainability

Although the concept of CSR has been developing since the early 1970s, there is no widely accepted single definition of CSR (WBCSD, 1999). Basically, CSR is a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis (Commission of the European Communities, 2002). The World Business Council for Sustainable Development (WBCSD, 1999) seeks to develop a clear understanding of CSR, including a matrix of CSR indicators. They proposed a definition for CSR as: *the ethical behavior of a company towards society ... management acting responsibly in its relationships with other stakeholders who have a legitimate interest in the business, and CSR is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.*

The main function of an enterprise is to create value through producing goods and services that society demands, thereby generating profit for its owners and shareholders as well as welfare for society, particularly through an ongoing process of

job creation. However, new social and market pressures are gradually leading to a change in the values and in the horizon of business activity. There is today a growing perception among enterprises that sustainable business success and shareholder value cannot be achieved solely through maximising short-term profits, but instead through market-oriented yet responsible behaviour. Companies are aware that they can contribute to sustainable development by managing their operations in such a way as to enhance economic growth and increase competitiveness whilst ensuring environmental protection and promoting social responsibility, including consumer interests (Commission of the European Communities, 2002).

2.2. Previous Findings

The literature in previous studies uses different categories to classify corporate social reporting practices (Ernst and Ernst, 1978; Gray *et al.*, 1987; Mathews, 1993; Perks, 1993). Table 1 summaries the variables used to investigate CSR practice in different countries. Ernst and Ernst (1978) undertook a comprehensive study on corporate social disclosure practices in the U.S. between 1972 and 1978. Their study was based on the annual reports of the Fortune 500 companies. By 1978, the survey was showing a slight decrease in the number of companies making social disclosures, but it was only a minor decline from 91 percent to 89 percent of surveyed companies making social disclosures. In addition, they witnessed a small decline from 60 percent to 59 percent in the number of companies that quantified corporate social disclosure.

Guthrie and Parker (1990) provided more recent survey evidence on US practices. They used content analysis to examine CSR in the annual reports of a sample of 150 companies operating in the US, UK and Australia. The analysis was mainly concerned with international similarities and differences. The results of the analysis indicate that 98 percent of the UK companies, 85 percent of the US companies and 56 percent of the Australian companies made CSR.

Gamble, Hsu, Kite and Radtke (1995) examine environmental information disclosed in annual reports and 10-Ks (company annual reports filed with the Securities and Exchange Commission (SEC)). Their study investigate the quality of environmental disclosures for 234 companies across 12 industries in the US for the years 1986 through 1991. They find an increase in the quantity of environmental disclosures in annual reports and 10-K's of US corporations since 1989. However, the overall quality of environmental disclosure is low. They suggest that although there has been some technical guidance in the area from the SEC and the

Financial Accounting Standard Board (FASB), other less accounting-specific factors may have provided the major motive for the increase. For example, activities by the EPA and other social movements such as Earth Day also indirectly contribute to the increase in environmental disclosures in the annual report.

2.3. Theoretical framework

Studies attempted to explain why and how organizations response to public pressure on the provision of corporate social activities, by linking related theories. According to Deegan and Simkan (2001), legitimacy theory and stakeholder theory have been frequently applied to explain what influences organizations in the decision to disclose environmental information, and why management makes particular decisions with regard to environmental reporting. Legitimacy theory and stakeholder theory are both derived from Bourgeois Political Economy Theory, which sees the world as essentially pluralistic with no particular class dominating another. Particularly, in the economic context, the two theories suggest organizations as being part of a broad social system (Gray, Owen and Adam, 1996, p.49). A tentative schema of political and system-based theories of Corporate Social Reporting [see appendices figure 1]. Within both theories, accounting disclosure policies are considered to “constitute a strategy to influence the organization’s relationships with the other parties, or stakeholders, with which it interacts” (Deegan and Samkin, 2001, p.1061). Although different theoretical perspectives exist between the two approaches, legitimacy theory and stakeholder theory represent concerns regarding impacts of organizations’ activities on the environment. There are overlapping perspectives between them in terms of enriching understanding of corporate social disclosures (Gray, Kouhy and Lavers, 1995). Purushothaman et al., (2000) state that stakeholder theory centres on the economic motivations for the disclosure of corporate social reporting (CSR) information, while legitimacy theory mainly focuses on the social perspective.

2.3.1. Legitimacy Theory

Within legitimacy theory, the organization is seen as “part of a wider social system in which the organization’s continued operations and success are dependent upon it complying with the expectations of the society in which it operates” (Deegan and Samkin, 2001, p.1061). According to Patten (1991), legitimacy theory is based upon the notion of “social contract”, which represents the norms and expectations of a society in which an organization

operates. Larger companies are generally targeted by society as they are politically more visible than their smaller counterparts. Because of their size, companies might feel their actions are under greater public scrutiny. Legitimacy theory posits that corporate social disclosures may be conceived as reactive attempts at legitimating organizations’ activities. Therefore, organizations need to disclose enough social information for society to assess whether it is a good corporate citizen (Guthrie and Parker, 1989). Corporate social responsibility disclosures likely help to communicate legitimating characteristics to financial stakeholders, government regulators and environmentalists. Neu, Waesame and Pedwell (1998) concluded environmental disclosures in corporate annual reports, which are a primary information source for stakeholders, namely, investors, creditors, employees, environmental groups and the government, provide businesses with a genuine communication tool of managing external impressions.

2.3.2. Stakeholder Theory

Some studies use stakeholder theory to empirically test the associations between firm specific characteristics and the level of social responsibility disclosures (Ullmann, 1985; Roberts, 1992). Under this theory, the organization is not only considered to be part of the wider social system but also, specifically, considered to impact on the different demands of various stakeholders groups within society. Like legitimacy theory, it is considered that “the expectations of the various stakeholder groups will impact on the operating and disclosure policies of the organization” (Deegan and Samkin, 2001, p.1065). Fowler, Hart, and Phillips (1999) argue that a statutory accountability already exists between an organization and its mainly financial stakeholders. Establishing a wider accountability between company and society involves broadening the definition of stakeholders to beyond those just a financial interest. Freeman (1984, as cited in, Roberts, 1992, p. 597) defines a stakeholder as “any group or individual who can affect or is affected by the achievement of the firm’s objectives”. Therefore, the definition of stakeholders of businesses has been expanded to include: shareholders, creditors, employees, customers, suppliers, public interest groups and governmental bodies (Roberts, 1992). This is simplistically represented as follows (Deegan and Samkin, 2001, p. 1062). According to Roberts (1992), stakeholder theory addresses various issues associated with relationships with stakeholders, including considerations of the rights of stakeholders, the power of stakeholders, and the effective management of satisfying stakeholders’

expectations. A major objective of organizations therefore is to attain the ability to balance the conflicting demands of various stakeholders in the

firm. Performing and disclosing social responsibility activities is part of a strategy for managing stakeholder relationships.

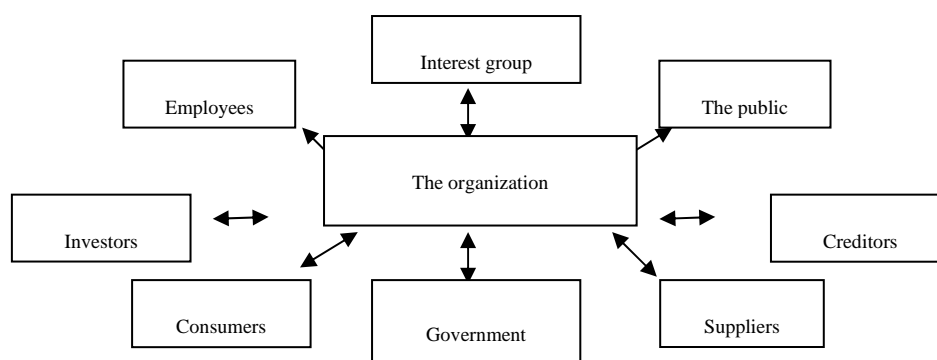


Table 1. Overview of Global CSR Studies

	Researcher(s)	Variables	Research Method	Principle Findings
US	Cowen, Ferreri and Parker (1987)	<i>Dependent:</i> individual CSR theme <i>Independent:</i> <ul style="list-style-type: none"> • company size • industry • profitability • social responsibility committee 	<i>Data Sources:</i> annual reports of Fortune 500 companies for 1978 <i>Statistics:</i> multiple regression	There was a positive relationship between corporate size and environment, energy, fair business practice, community involvement. And industry category appears to have a significant and positive association with energy and community involvement. In addition, corporate social responsibility committee has a positive relationship with human resources information.
US	Patten (1992)	<i>Dependent:</i> CSR disclosure <i>Independent:</i> <ul style="list-style-type: none"> • size • industry classification • profitability 	<i>Data Sources:</i> 156 annual reports for 1985 <i>Statistics:</i> OLS regression	Size and industry were significantly associated with the level of CSR disclosures, however, profitability were not.
Mexico	Chow and Wong-Boren (1987)	<i>Dependent:</i> voluntary disclosures <i>Independent:</i> <ul style="list-style-type: none"> • size • financial leverage • assets in place 	<i>Data Sources:</i> 52 annual reports of the manufacturing industry <i>Statistics:</i> descriptive statistics and cross-sectional regression	There was a positive relationship between size of Mexican companies and the level of information disclosed. However, there was no relationship between leverage, assets in place and the level of disclosure.
Singapore	Andrew, Gul, Guthrie and Teoh (1989)	<i>Dependent:</i> CSR <i>Independent:</i> <ul style="list-style-type: none"> • size • industry classification 	<i>Data Sources:</i> annual reports for 1983 <i>Statistics:</i> descriptive statistics	Study found that medium to large companies disclosed more information than small companies. Most of these companies were foreign-owned. The human resource theme received most attention followed by products and community and environment. Most disclosures were declarative, the rest had an equal distribution between monetary and non-monetary disclosures. The association between industry and CSR was not adequately addressed to accept or refute any association.
Singapore	Purushothaman, Tower, Hancock and Taplin (2000)	<i>Dependent:</i> CSR <i>Independent:</i> <ul style="list-style-type: none"> • economic performance • size • leverage • listing status • industry classification 	<i>Data Sources:</i> 60 annual report for 1998 <i>Statistics:</i> descriptive statistics and multivariate analysis	Company size is a significant determinant of CSR practice. Leverage is also found to be a significant predictor; companies with a higher debt to equity ratio disclose more CSR information.
New Zealand	Hossain, Perera and Rahman (1995)	<i>Dependent:</i> voluntary disclosures <i>Independent:</i> <ul style="list-style-type: none"> • size of company • leverage • assets in place • type of auditor • foreign listing status 	<i>Data Sources:</i> 55 annual reports for 1991 <i>Statistics:</i> descriptive statistics and OLS	Firm size, leverage, and listing status had a positive relationship with the level of disclosure whereas the assets in place and the type of auditor were not related to the level of voluntary disclosure
New Zealand	Hackston and Milne (1996)	<i>Dependent:</i> CSR disclosure <i>Independent:</i> <ul style="list-style-type: none"> • company size • industry • corporate profitability • country of ownership 	<i>Data Sources:</i> 50 annual reports for 1992 <i>Statistics:</i> regression techniques	The positive relationships exist between size and industry, however, profitability and country of reporting had no effect on the level of disclosure.

3. Data Collection and Methodology

3.1. Data Collection

In this study, one hundred multinational companies are randomly selected from two top stock exchanges in the U.S.. Fifty listed companies are randomly chosen from NASDAQ stock exchange, and the remaining companies are selected from NYSE. *Appendix One* gives a full list of company names. Two main approaches are adopted to establish the existence of corporate social reporting for each company. First, corporate social reporting is investigated from corporate websites for all selected multinational companies. This approach is practical in the study because multinational companies have the ability to provide relevant information to investors across different countries via their own corporate websites. If the first approach failed to yield the required data, companies' annual report (financial year ended 2003) is the second source which used to determine the existence of CSR.

Furthermore, independent variables data in this study are collected from Thomson One Banker Database¹, which also concentrate on the financial year ended 2003. All independent variables can be classified into four categories: company size, financial performance, business characteristics and corporate structure. All independent variables data are presented in *Appendix Two*. It is worthwhile to note that the overall size of selected companies is relative larger in this study, due to large scope of their business. More details will be discussed in the following section.

3.2 Methodology

3.2.1 Measurement of the Dependent Variable

Content analysis used in this study presumes that content categories identified in the written messages of the annual report have evident meaning (e.g. environment, employee practices, community involvement, etc.) that can be categorized. Based on previous CSR studies (Zeghal and Ahmed, 1990; Kirkman and Hope, 1992; Gray et al., 1995), this study focuses on the annual report as a principal guideline of the firm's reporting and empirical analysis.

Criteria for determining CSR varies from studies, which result from the absence of proper definition and general consensus. A company is

deemed to "report" if it provides valuable sustainability information on its corporate website or within its Annual Report (Sustainable Investment Research Institute Pty Ltd, 2004). All selected multinational companies need to satisfy the following criteria in order to be qualified for corporate social reporting.

Criteria for Dependent Variable:

Company with Corporate Social Reporting if

- The company publishes publicly available significant, valuable information such as sustainability performance data and/or targets, as a stand alone report, within the Annual Report or on the company website.
- The company has information on certain sustainability issues such as environmental policies or Environmental Management Systems, within the Annual Report or on the company website.

Company without Corporate Social Reporting if

- Relative less or no significant information provided on company websites or included in Annual Report.

3.2.2. Measurement of the Independent Variables

This section discusses the measurement techniques adopted with respect to each of the independent variables. Measurement techniques are determined by past literature (Hackston and Milne, 1996; Cooke, 1991; Craig and Diga, 1998; Cooke, 1989; Tsang, 1998). This paper adds value to the existing literature by examining a new proxy (corporate structure) to predict CSR. Database such as: Thomson One Banker is consulted to obtain additional descriptive details such as industry group sectors, foreign listings, and percentage of closely-held shares.

The multinational companies are classified into five major sectors², manufacturing, Hi-Tec, customer service, health and other sector (*refer to Appendix Three*). The primary variables collected and their respective definitions are presented in Table 2.

3.3. Hypotheses

3.3.1. Size of Company

Prior studies suggest that corporate size appears to have a significant impact upon whether

¹ From Waikato Management Database, <http://banker.analytics.thomsonib.com/ta/?UserID=acquire&Domain=waikato.ac.nz&Password=team>

² According to Kenneth French's 5 industries portfolio codes, refer to Appendix Three.

environmental disclosures are made (Teoh and Thong, 1984; Cowen, Ferreri and Parker, 1987; Cooke, 1989; Patten, 1991, 1992; Hossain, Perera and Rahman, 1995; Hackston and Milne's, 1996; Craig and Diga; 1998).

H₁: There is a positive association between company size and CSR

3.3.2 Financial Performance

Some studies discover that a relationship between corporate profitability and the level of disclosure (Bowman and Haire, 1976; Preston, 1978). Conversely, other studies have found no relationship at all (Cowen, Ferreri and Parker, 1987; Belkaoui and Karpik, 1989; Hackston and Milne, 1996).

H₂: There is a positive association between financial performance and CSR

3.3.3. Overseas Listing Status

Numerous studies find a positive association between foreign listing status and the extent of corporate voluntary disclosure (Cooke, 1989, 1991; Hossain, Tan and Adam, 1994; Meek and Gray, 1989, 1995). For instance, Hossain et al. (1994) conclude that Malaysian multinational listed on London Stock Exchange voluntarily disclosed more information in their annual reports than companies listed only on Kuala Lumpur Stock Exchange.

H₃: There is a positive association between overseas listing status and CSR

3.3.4. Employees

Stakeholders of the firm incorporate stockholders, creditors, employees, customers, suppliers, public interest groups, and governmental bodies. It is important for companies to develop a corporate reputation for being socially responsible by performing and disclosing social responsibility activities, especially for multinational companies that are listed in stock exchanges.

H₄: There is a positive association between employee numbers and CSR

3.3.5. Corporate Ownership & Structure

The new variable of corporate ownership & structure focuses on stock ownership level and condition within firm, which is determined by three proxies: Price to Book ratio, Closely-held Shares Percentage and Trading Volume. Companies with good track of stock performance are likely to disclose more socially responsible information to attract potential investors. Moreover, company with less closely-held share percentage is expected to have higher levels of CSR. Lastly, social responsibility activities may improve a firm's trading volume, as market participants may pay extra attention to socially responsible firms.

H₅: There is an association between corporate structure and CSR

3.3.6. Industry Classification

Some studies comment that there is a positive relationship between the industry classifications and quantity of CSR information disclosed (Cowen, Ferreri and Parker, 1987; Patten, 1991, 1992; Hackston and Milne, 1996). This result seemed to be consistent with legitimacy theory, because such theory can suggest that companies operating within an industry that are environmentally sensitive may disclose more detailed social responsibility information than other industries companies (Patten, 1992; Deegan and Gordon, 1996; Hackston and Milne, 1996).

H₆: There is an association between industry sector and CSR

4. Results and Analysis

4.1 Descriptive Results

The 100 companies are divided into two categories: companies providing corporate social reporting in annual report (CSR) and companies not providing financial reports in annual report (N-CSR). The latter group includes companies that comply with FAS-5 but with insufficient amount of information on CSR. Table 3 summarises the descriptive statistics pertaining to the independent variables for CSR and N-CSR.

Table 2. Measurement of Independent Variables

<i>Dependent Variables</i>	<i>Definition</i>
Size of Company	
Total Assets	Total assets for the year ended 2003
Total Sales	Total sales for the year ended 2003
Financial Performance	
Net Income	Total income after tax for the year ended 2003
Return on assets	EBIT ³ / Total assets for the year ended 2003
Return on equity	Net income after tax / Total equity for the year ended 2003
Business Characteristics	
Employee	Total number of employees for the year ended 2003
Listing Status	Multiple Listing = 1; Single Listing = 0
Corporate Ownership & Structure	
Price to Book Ratio	Market Price- Year End / Book Value per Share
Closely Held Shares Percentage	(Number of Closely Held Shares / Common Shares Outstanding) * 100
Trading Volume	Common Shares Traded-Annual * ((Market Price-High + Market Price-Low) / 2)
Type of Industry	
	Main industrial group sector: 1= Manufacturing, 2= Customer Service, 3= Hi-Tec Industry, 4= Health , 5=Other

Table 3. Descriptive Statistics

<i>Variables</i>	<i>Statistics</i>	<i>N-CSR</i>	<i>CSR</i>	<i>All Companies</i>	
Size of company					
Total Asset	Mean	25,069	127,755	69,224	
(Smillion)	Median	2,367	35,849	8,419	
	Std Deviation	63,239	256,018	181,775	
	Percentile 25	1,453	9,482	2,200	
	Percentile 75	9,877	80,986	41,361	
Total Sales	Mean	13,215	42,778	25,927	
(Smillion)	Median	1,822	26,996	6,166	
	Std Deviation	36,257	50,413	45,146	
	Percentile 25	1,012	8,556	1,386	
	Percentile 75	8,194	47,424	30,998	
Financial Performance					
Net Income	Mean	803	3,691	2,045	
(Smillion)	Median	119	1,739	313	
	Std Deviation	1,781	4,994	3,800	
	Percentile 25	55	542	74	
	Percentile 75	447	5,409	2,437	
Return on assets	Mean	0.042	0.040	0.041	
	Median	0.053	0.035	0.053	
	Std Deviation	0.103	0.101	0.102	
	Percentile 25	0.016	0.012	0.015	
	Percentile 75	0.097	0.104	0.097	
Return on equity	Mean	0.010	0.110	0.053	
	Median	0.112	0.130	0.117	
	Std Deviation	0.572	0.213	0.455	
	Percentile 25	0.045	0.080	0.061	
	Percentile 75	0.162	0.193	0.180	
Corporate Ownership & Structure					
Price to Book Ratio	Mean	-4.797	4.103	-0.970	
	Median	3.751	3.943	3.804	
	Std Deviation	67.857	2.599	51.26	
	Percentile 25	2.690	2.242	2.511	
	Percentile 75	5.741	5.585	5.637	
Closely Held Share%	Mean	14.428	7.982	11.656	
	Median	9.225	0.786	3.077	
	Std Deviation	15.608	14.545	15.421	
	Percentile 25	1.164	0.175	0.353	
	Percentile 75	23.312	14.545	18.180	
Trading Volume	Mean	444.729	735.047	569.566	
	Median	253.548	429.978	354.857	
	Std Deviation	506.738	849.901	687.431	
	Percentile 25	77.045	247.568	127.647	
	Percentile 75	622.153	927.711	754.854	
Business Characteristics					
Employees	Mean	56,877	98,719	74,869	
	Median	6,202	69,169	17,287	
	Std Deviation	202,751	105,730	168,609	
	Percentile 25	3,004	20,300	2,414	
	Percentile 75	28,700	116,000	68,292	
Type of Industry	Count:	Customer Service	9	8	17
		Manufacturing	3	13	16
		Hi-Tec	30	11	41
		Health	6	4	10
		Other	9	7	16
Listing Status	Count:	Yes	12	29	41
		No	45	14	59

³ EBIT = Earnings before interest and tax

Table 4. Distribution of CSR and N-CSR Companies by Industry and Overseas Listing Status

<i>Panel A: By industrial sector</i>							
	<i>Total</i>		<i>N-CSR</i>		<i>CSR</i>		
	Count	%	Count	%	Count	%	
Customer Service	17	17	9	15.8	8	18.6	(50)
Manufacturing	16	16	3	0.05	13	30.2	(81)
Hi-Tec	41	41	30	52.6	11	25.6	(27)
Health	10	10	6	10.5	4	9.30	(40)
Other	16	16	9	15.8	7	16.3	(44)
Total	100	100	57	100.0	43	100.0	
<i>Panel B: By Overseas Listing Status</i>							
	<i>Total</i>		<i>CSR</i>		<i>N-CSR</i>		
	Count	%	Count	%	Count	%	
Single Listed	59	59	14	32.6	45	78.9	
Multiple Listed	41	41	29	67.4	12	21.1	
Total	100	100	43	100.0	57	100.0	

The ranges of the minimum to the maximum for the size measures, namely total assets and total sales, indicate that there is a significant dispersion in the sample. For instance, the smallest company in the sample has \$492 million total assets whereas the biggest company in the sample has \$1,264 trillion total assets. The company with the largest amount of total assets is Citigroup Incorporation. It is a financial company and generally these companies because of their business nature, tend to be larger in size.

Sixteen companies in the sample registered negative return on assets and return on earnings. The low mean on the return on assets (4%) is indicative of the effects of the unstable economic environment. The average of closely-held share % for Non-CSR companies is twice as large as the CSR companies. In the meantime, the average trading volume for CSR companies is approximately \$300 billion more than these Non-CSR companies. Examination of Table 4 indicates that there are more companies in the Hi-Tec sector than any other sectors. There is a larger portion of the multinational companies have been listed solely on one stock exchange. Forty-one companies in the sample of one hundred have multiple listing status.

Forty-three out of one hundred companies have disclosure sufficient information on corporate social reporting with highest proportions of companies being in manufacturing industry (81%). On intra industrial basis, the manufacturing sector has the highest proportion of comportsing social reporting with 30% of having CSR. This compares to about 25.6% and 18.6% respectively for the Hi-Tec sector and Customer Service sector.

4.2 Univariate Regression

This paper further investigates whether CSR practices can be predicted from either of these variables. Several univariate logit regression

analyses are employed, with the dependent variable classified as a binary choice between CSR and N-CSR. Logit analysis enables the study to a number of measurable independent variables, with the estimation allowing the study to compare the relative importance of these variables.

This model incorporates different measures of the independent variables, such as: size variables, financial performance variables, business characteristics variables, corporate ownership & structure variables and industry classification variables; are specified in order to investigate the determinants of CSR among the listed companies. The models examined are stated as follows:

$$\text{Equation 1: } Y = c_1 + \alpha_1 \text{Size Variables}$$

Where:

Y= CSR practice; 0 for N-CSR and 1 for CSR

C₁= the constant of the equation

Size 1= total assets

Size 2= total sales

$$\text{Equation 2: } Y = c_2 + \alpha_2 \text{Financial Performance Variables}$$

Where:

Y= CSR practice; 0 for N-CSR and 1 for CSR

C₂= the constant of the equation

Financial Perf. 1 = net income

Financial Perf. 2 = return on assets

Financial Perf. 3 = return on equity

$$\text{Equation 3: } Y = c_3 + \alpha_3 \text{Business Characteristics}$$

Where:

Y= CSR practice; 0 for N-CSR and 1 for CSR

C₃= the constant of the equation

Business Charact. 1= Employee, total number of employees

Business Charact. 2= Listing Status, overseas listing (1= yes, 0= no)

$$\text{Equation 4: } Y = c_4 + \alpha_4 \text{Corporate Structure Variables}$$

Where:

Y= CSR practice; 0 for N-CSR and 1 for CSR

C₄= the constant of the equation
 Corporate Structure 1= price to book ratio
 Corporate Structure 2= closely-held share percentage
 Corporate Structure 3= trading volume

Equation 5: $Y = c_5 + \alpha_j \text{Industry Classification Variables}$

Where:

Y= CSR practice; 0 for N-CSR and 1 for CSR

C₅= the constant of the equation

Industry= industrial sector – industry1 is customer

service sector, 1 if yes and 0 if otherwise;

industry2

is manufacturing sector, 1 if yes and 0 if otherwise;

industry 3 is Hi-Tec sector, 1 if yes and 0 if

otherwise; industry 4 is Health sector, 1 if yes and 0 if otherwise; and industry 5 includes other sectors, 1 if yes and 0 if otherwise.

To assess possible multicollinearity issues, the correlations for the model's continuous independent variables are measured and reported in Table 5. As one would expect, the two measures of size are highly correlated, as are the alternative measures of profitability. And not surprisingly, there is a high level of correlation between number of employees and sales amount. Therefore, multivariate regression is not considered in this paper to avoid potential multicollinearity problem.

Table 5. Correlations between independent variables

	ROE	Net Income	ROA	Assets	Sales	Employees	Price/Book Ratio	Closely-Held Shares%
ROE	1							
Net Income	0.2162(0.000)	1						
ROA	0.4620(0.000)	0.2147(0.000)	1					
Assets	0.0022(0.967)	0.6708(111)	0.0457(797)	1				
Sales	0.1299(0.004)	0.6179(0.000)	0.0022(0.960)	0.5034(148)	1			
Employees	0.1021(0.051)	0.4174(0.000)	0.0176(0.000)	0.2084(0.004)	0.7581(0.000)	1		
Price to Book Ratio	-0.0430(0.141)	0.0542(0.006)	0.4412(0.000)	0.0295(0.363)	0.0526(0.263)	0.0427(0.551)	1	
Closely Held Shares	-0.1056(0.002)	0.2381(0.000)	-0.0021(0.144)	0.1011(0.046)	0.0917(0.036)	0.0123(0.998)	0.0656(0.048)	1
Trading Volume	0.1582(0.000)	0.1066(0.000)	0.2260(0.000)	0.2140(0.000)	0.2509(0.000)	0.1700(0.000)	0.0914(0.000)	0.1980(0.000)

4.3. Analysis Key Results

Table 6 presents the results from univariate regressions. Financial performance is measured by net income is significantly positively associated with CSR as hypothesised, but ROA and ROE are insignificantly negatively associated to CSR. Both proxies (assets and sales) for size illustrate significantly positive relationships with CSR practice which completely support hypothesis 1. Overseas listing status is another factor that has a significantly positive relationship with CSR, which comply with the third hypothesis. Among the five different industry sectors, manufacturing industry is the only industry sector that illustrates a significant positive factor loading to CSR practice. However, the most interesting finding is that closely-held share

percentage and trading volume are positively (significantly) related to CSR practice. This finding is also consistent with hypothesis 4 that market performance is positively associated with CSR.

4.3.1 Size of Company

Size of company is the most frequently tested determinant of CSR practice. This variable has nearly always emerged with a positive relationship with the level of disclosure (Adler and Milne, 1998; Cooke, 1989; Cowen, Ferreri and Parker, 1987; Hackston and Milne, 1996; Patte, 1991). This study reveals a strong positive association between size and CSR practice. In practice, larger multinational companies are providing more voluntary social responsibility disclosures than smaller companies. One reason for this could be in line with the legitimacy argument that these bigger companies do indeed feel the pressure to demonstrate social responsibility and therefore provide more CSR disclosures in their annual reports.

4.3.2 Financial Performance

Numerous studies have conflicting results regarding financial performance and the level of social responsibility disclosure. This study illustrates a significant positively relationship between net income and CSR disclosure. However, ROA and ROE show relative insignificant relationships for CSR. One explanation is that net income is an absolute measure (expressed in dollar term) of financial performance for companies, while ROA and ROE are relative measure (expressed in percentage term) of financial performance. Therefore, one can conclude that profitable firms are more likely to disclose socially responsible information than less profitable firms. It can be explained that profitable firms are more obligated to impress stakeholders to maintain growth.

4.3.3 Listing Status

The finding for overseas listing status is consistent with previous studies, that it has a positive relationship with the level of CSR disclosures (Hossain, Tan and Adams, 1994; Meek, Roberts and Gray, 1995). So those companies that are multiple listed, are more likely to disclose large amount of CSR related information for their investors. According to Hackston and Milne (1996), a positive relationship between multiple listed companies and the level of CSR disclosures will only exist if countries in which these companies are listed have very different social reporting requirements.

4.3.4 Corporate Ownership & Structure

This paper includes corporate ownership & structure variable, a new proxy for CSR disclosure comparing with past studies. The result demonstrates a relative weak relationship between price to book ratio and CSR practice. However, closely-held share percentage illustrates a significantly negative relationship with CSR. It is logical that companies with higher closely-held share percentage want to maintain the level of their ownership. So there is less incentives for them to voluntarily disclose more information to the public. Conversely, trading volume has a strong positive relationship towards CSR. In other words, companies with larger trading volume feel more obligated to disclose extra information to their investors, which can be seen as another signalling method.

4.3.5 Industry Classification

Studies conducted by Pattern (1992) and Cooke (1989) find industry to be a significant variable in determining the level of CSR information. This study illustrates a significant positive relationship between manufacturing industry and CSR practice. However, the remaining industries demonstrate insignificant relationships with CSR. Manufacturing industry involves companies such as: chemical, mining, steel, and tobacco, which need to use a large amount of nature resources. Therefore, those companies face more pressure from the public due to the nature of their businesses. The insignificant result for Hi-Tec firms can be explained by the commercial sensitivity of their products. Finally, companies cooperating in the computer software and electronic device development disclose less CSR information to maintain their competitive advantages.

4.4. Robustness Test

To check the robustness of these results, industry classification variables are included as control variable to re-examine equation⁴ 1 to 4. From table 7, it is clear that most of the results are consistent with the original findings. The significant coefficient of total assets increases by 2.31 (from 6.62E-09 to 8.93E-09). Meanwhile, trading volume's coefficient decreases to 1.12E-11 from 7.47E-12.

5. Conclusions and Future Study

During the past 20-30 years, corporate social behaviour has become an important aspect of business society. This paper has studied the relationship between various firm characteristics and the quantity of corporate social and environmental reporting. Several main findings emerged: First, size is significant positively associated with CSR practice, as shown elsewhere in the literature. Larger firms are willing to disclose more CSR information than smaller firms. Second, net income (as a proxy for financial performance) is again confirmed to have a positive relationship with CSR disclosure. Thirdly, companies with multiple listing disclose more CSR information to comply with different countries' regulation requirements. Fourthly, this paper shows that the corporate ownership & structure variable is negatively associated with CSR when it is measured by closely-held share percentage. Trading volume on the other hand, has a strong positive relationship with CSR practice. Finally, again consistent with many other studies, manufacturing industry is shown to be significantly related to both the quality and the quantity of disclosure.

However, these findings are subject to the limitations of this study. It is important to note that the interpretation of the results is conditional on the assumption that the proxy variables used are reliable indicators of the determinants underlying corporate environmental disclosure decisions. Despite extensive efforts made to enhance the accuracy of proxy variables, data availability might have limited their validity. Future studies can look at whether CSR disclosure affects firms' financial and market performance for the following 5 years period. Positive finding from this research can encourage more businesses to be socially responsible.

Nevertheless we can conclude that while size, profitability and liquidity relate positively to corporate social reporting, closely-held shares percentage variable has a significant negative relationship with corporate social reporting. This reveals that closely-held corporations are expected to conceal more information from the public than others. In sum, the findings confirm that large firm and profitable firms are more likely to disclose their CSR practices, but less so when closely held.

⁴ Multivariate logit regression is adopted for testing robustness of previous findings.

Table 6. Multivariate Logistic Regression Results

Variables	Expected Sign	Coefficient	z-Statistics
Constant			
Equation 1 Size			
Total assets	+	6.62E-09	2.093757**
Total sales	+	2.21E-08	2.700518**
Equation 2 Financial Performance			
Net Income	+	3.26E-07	3.210685**
ROA	+	-0.25864	-0.130233
ROE	+	0.859477	0.935851
Equation 3 Business Characteristics			
Employees	+	1.66E-06	1.078822
Listing Status	+	2.049994	4.457913**
Equation 4 Corporate Ownership & Structure			
Price/Book ratio	+	0.008624	0.452486
Closely-held share%	-	-0.031057	-2.005571**
Trading Volume	+	7.47E-12	2.007534**
Equation 5 Industry			
Industry (Customer)	+/-	-0.117783	-0.242395
Industry (Manufacturing)	+/-	3.114647	2.289318**
Industry (Hi-Tec)	+/-	-8.616627	-2.846406**
Industry (Health)	+/-	-2.170022	-0.628144
Industry (Other)	+/-	-2.515470	0.618000
Total observations		100	

** indicate significant at the 10, 5 and 1% levels, respectively.

Table 7. Robustness Test Results

Variables	Expected Sign	Coefficient	z-Statistics
Constant			
Equation 1 Size			
Total assets	+	8.93E-09	2.370128**
Total sales	+	2.35E-08	2.761414**
Equation 2 Financial Performance			
Net Income	+	3.83E-07	3.493837**
ROA	+	-0.899636	-0.422815
ROE	+	0.651705	0.682482
Equation 3 Business Characteristics			
Employees	+	-1.37E-06	0.85793
Listing Status	+	1.865135	3.655178**
Equation 4 Corporate Ownership & Structure			
Price/Book ratio	+	0.028756	0.487931
Closely-held share%	-	-0.034478	-2.076961**
Trading Volume	+	1.12E-11	2.669153**
Total observations		100	

** indicate significant at the 10, 5 and 1% levels, respectively.

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Appendices

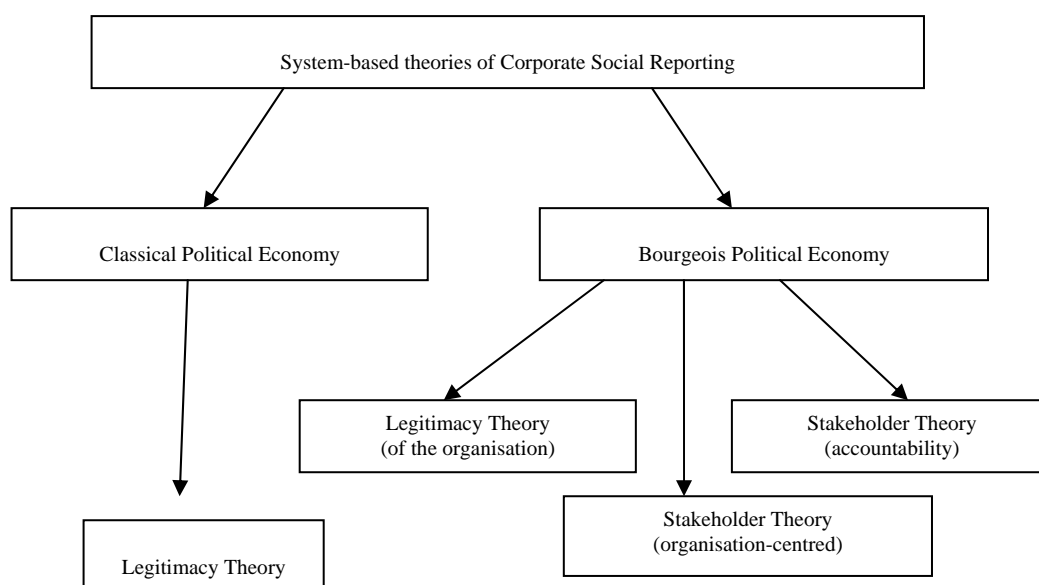


Figure 1. System-based theories of Corporate Social Reporting

Appendix One. Multinational Company Name List

	NASDAQ	NYSE
1	Adobe Systems Inc	3M Company
2	Altera Corp.	Albemarle Corp.
3	Amazon Inc	Alcoa Inc
4	American Eagle Outfitters	Altria Group
5	American Power Conversion Corp.	Amerada Hess Corp.
6	Amgen Inc	American Express Company
7	Apple Computers Inc	American International Group Inc
8	Applied Materials Inc	Appera Corporation
9	BEA Systems Inc	Boeing Company
10	Biocoral Inc	Caterpillar Inc
11	Biogen Idec Inc	Citigroup Inc
12	Biomet Inc	Coca Cola Company
13	Broadcom Corp.	Conocophillips
14	Brooks Automation Inc	CPI Corporations
15	Career Education Corp.	Dow Chemicals Company
16	Cephalon	Du Pont El De Nemours
17	CH Robinson Worldwide Inc	Eastman Chemicals Company
18	Chiron Corp.	Exxon Mobil Corp.
19	Cintas Corp.	First American Corp.
20	Cisco Systems Inc	Ford Motor Company
21	Citrix Systems Inc	General Electric Company
22	Comcast Corp.	General Motors Corp.
23	Compuware	Hewlett-Packard Company
24	Comverse Technology Inc	Home Depot Inc
25	Costco Wholesale Corp.	Honeywell International Inc
26	Dell Inc	International Business Machine Corp.
27	Dollar Tree Stores Inc	Johnson & Johnson
28	Ebay Inc	JP Morgan Chase And Company
29	Electronic Arts Inc	Lyondell Chemical Company
30	Golden Telecom Inc	McDonalds Corp.
31	Intel Corp.	Merck And Company Inc
32	KLA Tencor Corp.	Monsanto Company
33	Lam Research Corp.	Nike Inc
34	Level 3 Communications Inc	Pfizer Inc
35	Linear Technology	PPG Industries Inc
36	Marvell Technology Group Limited Bermuda	Praxair Inc
37	Maxim Integrated Products Inc	Procter & Gamble Company
38	Medimmune Inc	Qualcomm Inc
39	Mercury Interactive Corp.	Rohm & Haas Company
40	Microchip Technology Inc	Sanmina-SCI Corp.
41	Microsoft Corp.	SBC Communications Inc
42	Millennium Pharmaceuticals Inc	Symbol Technologies Inc
43	Molex Inc	Time Warner Inc
44	Network Appliance Corp.	United Technologies Corp.
45	Nextel Partners Inc	Verizon Communications Inc
46	Novellus Systems Inc	Visteon Corp.
47	Nvidia Corp.	Wal Mart Stores Inc
48	Oracle Corp.	Walt Disney Company
49	Paccar Inc	Wells Fargo And Co
50	Patterson Companies Inc	Zimmer Holdings Inc

Appendix Two. Raw Data Collected

Company Name	Total Assets 000	Sales Volume 000	Net Income (000)	ROA	ROE
3M Company	\$17,417,000	\$18,232,000	\$2,403,000	0.1380	0.3048
Adobe Systems Inc	\$1,555,045	\$1,294,749	\$266,344	0.1713	0.2420
Albemarle Corp.	\$1,387,291	\$1,110,237	\$74,165	0.0535	0.1166
Alcoa Inc	\$30,368,000	\$21,504,000	\$983,000	0.0324	0.0818
Altera Corp.	\$1,453,506	\$827,207	\$155,125	0.1067	0.1407
Altria Group	\$96,175,000	\$60,704,000	\$9,204,000	0.0957	0.3670
Amazon Inc	\$2,162,033	\$5,263,699	\$35,282	0.0163	-0.0341
Amerada Hess Corp.	\$13,983,000	\$14,311,000	\$467,000	0.0334	0.1005
American Eagle Outfitters	\$844,187	\$1,519,968	\$60,000	0.0711	0.0932
American Express Company	\$175,001,000	\$26,029,000	\$3,000,000	0.0171	0.1958
American International Group Inc	\$678,346,000	\$81,303,000	\$9,265,000	0.0137	0.1300
American Power Conversion Corp.	\$1,779,972	\$1,464,798	\$176,938	0.0994	0.1171
Amgen Inc	\$26,176,500	\$8,356,000	\$2,280,300	0.0871	0.1176
Apple Computers Inc	\$6,755,000	\$6,207,000	\$68,000	0.0101	0.0161
Applied Materials Inc	\$10,311,622	\$4,477,291	-\$149,147	-0.0145	-0.0185
BEA Systems Inc	\$2,220,189	\$1,012,492	\$118,674	0.0535	0.1223
Biocoral Inc	\$813	\$362	-\$319	-0.3927	0.1508
Biogen Idec Inc	\$9,503,945	\$679,183	-\$875,097	-0.0921	-0.1241
Biomet Inc	\$1,672,169	\$1,390,300	\$286,701	0.1715	0.2229
Boeing Company	\$51,793,000	\$50,485,000	\$718,000	0.0139	0.0882
Broadcom Corp.	\$2,028,528	\$1,610,095	-\$959,865	-0.4732	-0.6396
Brooks Automation Inc	\$492,701	\$343,610	-\$185,760	-0.3770	-1.1446
Career Education Corp.	\$1,119,150	\$1,188,609	\$119,168	0.1065	0.1594

Caterpillar Inc	\$35,849,000	\$22,763,000	\$1,099,000	0.0307	0.1808
Cephalon	\$2,213,150	\$714,807	\$92,283	0.0417	0.1198
CH Robinson Worldwide Inc	\$908,149	\$3,613,645	\$114,123	0.1257	0.2207
Chiron Corp.	\$4,195,169	\$1,658,063	\$222,976	0.0532	0.0912
Cintas Corp.	\$2,582,946	\$2,686,585	\$249,253	0.0965	0.1514
Cisco Systems Inc	\$35,631,000	\$18,878,000	\$3,578,000	0.1004	0.1277
Citigroup Inc	\$1,264,032,000	\$94,713,000	\$17,782,000	0.0141	0.1835
Citrix Systems Inc	\$1,341,771	\$588,625	\$126,943	0.0946	0.1796
Coca Cola Company	\$26,896,000	\$21,044,000	\$4,347,000	0.1616	0.3085
Comcast Corp.	\$109,159,000	\$18,348,000	-\$50,000	-0.0005	-0.0012
Compuware	\$2,102,511	\$1,375,340	\$103,102	0.0490	0.0774
Converse Technology Inc	\$2,728,042	\$765,892	-\$5,386	-0.0020	-0.0032
Conocophillips	\$82,402,000	\$90,491,000	\$4,593,000	0.0557	0.1336
Costco Wholesale Corp.	\$13,177,372	\$42,546,000	\$732,000	0.0555	0.1117
Dell Inc	\$19,178,000	\$41,444,000	\$2,645,000	0.1379	0.4212
Dollar Tree Stores Inc	\$1,480,306	\$2,799,872	\$177,583	0.1200	0.1750
Dow Chemicals Company	\$37,778,000	\$32,632,000	\$1,739,000	0.0460	0.1895
Du Pont El De Nemours	\$35,985,000	\$26,996,000	\$992,000	0.0276	0.1039
Eastman Chemicals Company	\$6,188,000	\$5,800,000	-\$273,000	-0.0441	-0.2617
Ebay Inc	\$5,820,134	\$2,165,096	\$447,184	0.0768	0.0913
Electronic Arts Inc	\$2,346,010	\$2,482,244	\$317,097	0.1352	0.1777
Exxon Mobil Corp.	\$174,278,000	\$213,199,000	\$20,960,000	0.1203	0.2331
First American Corp.	\$4,750,489	\$6,126,625	\$457,845	0.0964	0.2443
Ford Motor Company	\$303,828,000	\$164,196,000	\$913,000	0.0030	0.0784
General Electric Company	\$647,483,000	\$133,585,000	\$15,589,000	0.0241	0.1969
General Motors Corp.	\$430,421,000	\$184,710,000	\$2,862,000	0.0066	0.1133
Golden Telecom Inc	\$729,226	\$360,534	\$55,435	0.0760	0.0955
Hewlett-Packard Company	\$71,849,000	\$73,061,000	\$2,539,000	0.0353	0.0673
Home Depot Inc	\$34,437,000	\$64,816,000	\$4,304,000	0.1250	0.1921
Honeywell International Inc	\$29,002,000	\$23,103,000	\$1,344,000	0.0463	0.1253
Intel Corp.	\$47,143,000	\$30,141,000	\$5,641,000	0.1197	0.1491
International Business Machine Corp.	\$100,169,000	\$89,131,000	\$7,613,000	0.0760	0.2732
Johnson & Johnson	\$47,589,000	\$41,862,000	\$7,197,000	0.1512	0.2677
JP Morgan Chase And Company	\$770,912,000	\$44,363,000	\$6,668,000	0.0086	0.1477
KLA Tencor Corp.	\$2,823,565	\$1,323,049	\$137,191	0.0486	0.0619
Lam Research Corp.	\$1,111,243	\$755,234	-\$7,739	-0.0070	-0.0119
Level 3 Communications Inc	\$8,293,000	\$4,026,000	-\$721,000	-0.0869	-3.9834
Linear Technology	\$2,056,879	\$606,573	\$236,591	0.1150	0.1304
Lyondell Chemical Company	\$7,633,000	\$3,801,000	-\$302,000	-0.0396	-0.2612
Marvell Technology Group Limited	\$2,427,816	\$819,762	\$45,510	0.0187	0.0208
Maxim Integrated Products Inc	\$2,367,962	\$1,153,219	\$309,601	0.1307	0.1495
McDonalds Corp.	\$25,525,100	\$17,140,500	\$1,508,200	0.0591	0.1259
Medimmune Inc	\$2,643,400	\$1,054,300	\$183,200	0.0693	0.1078
Merck And Company Inc	\$40,580,000	\$22,485,900	\$6,830,900	0.1683	0.4385
Mercury Interactive Corp.	\$1,977,090	\$506,473	\$41,513	0.0210	0.0587
Microchip Technology Inc	\$1,428,275	\$651,462	\$99,675	0.0698	0.0845
Microsoft Corp.	\$79,571,000	\$32,187,000	\$9,993,000	0.1256	0.1638
Millennium Pharmaceuticals Inc	\$3,010,263	\$433,687	-\$483,687	-0.1607	-0.1934
Molex Inc	\$2,221,557	\$1,843,098	\$84,918	0.0382	0.0448
Monsanto Company	\$9,461,000	\$5,059,500	-\$16,500	-0.0017	-0.0032
Network Appliance Corp.	\$1,278,542	\$892,068	\$76,472	0.0598	0.0775
Nextel Partners Inc	\$20,510,000	\$10,820,000	\$1,492,000	0.0727	0.2557
Nike Inc	\$6,525,900	\$10,697,000	\$740,100	0.1134	0.1855
Novellus Systems Inc	\$2,360,290	\$925,070	-\$5,034	-0.0021	-0.0024
Nvidia Corp.	\$1,399,344	\$1,822,945	\$74,419	0.0532	0.0708
Oracle Corp.	\$10,867,000	\$9,475,000	\$2,307,000	0.2123	0.3650
Paccar Inc	\$9,877,800	\$8,194,900	\$526,500	0.0533	0.1622
Patterson Companies Inc	\$846,510	\$1,656,956	\$116,320	0.1374	0.1773
Patterson UTI Energy Inc	\$1,075,830	\$776,170	\$55,795	0.0519	0.0680
People support Inc	\$4,182,679	\$2,267,018	\$85,044	0.0203	0.0297
Pfizer Inc	\$116,775,000	\$45,188,000	\$1,651,000	0.0141	0.0253
PPG Industries Inc	\$8,424,000	\$8,756,000	\$500,000	0.0594	0.1718
Praxair Inc	\$8,305,000	\$5,613,000	\$585,000	0.0704	0.1894
Procter & Gamble Company	\$43,706,000	\$43,377,000	\$5,177,000	0.1185	0.3253
Qualcomm Inc	\$8,415,690	\$3,970,636	\$827,441	0.0983	0.1089
Rohm & Haas Company	\$9,445,000	\$6,421,000	\$288,000	0.0305	0.0858
Sanmina-SCI Corp.	\$7,450,256	\$10,361,000	-\$137,000	-0.0184	-0.0412
SBC Communications Inc	\$100,166,000	\$40,843,000	\$5,971,000	0.0596	0.1561
Symbol Technologies Inc	\$1,418,048	\$1,530,278	\$3,295	0.0023	0.0036
Time Warner Inc	\$121,783,000	\$39,565,000	\$3,146,000	0.0258	0.0561
United Technologies Corp.	\$33,365,000	\$30,723,000	\$2,360,000	0.0707	0.2016
Verizon Communications Inc	\$165,968,000	\$67,752,000	\$2,572,000	0.0155	0.0769
Visteon Corp.	\$10,264,000	\$17,660,000	-\$1,213,000	-0.1182	-0.6529
Wal Mart Stores Inc	\$104,912,000	\$256,329,000	\$8,861,000	0.0845	0.2031
Walt Disney Company	\$49,988,000	\$27,061,000	\$1,348,000	0.0270	0.0567
Wells Fargo And Co	\$387,798,000	\$31,824,000	\$6,199,000	0.0160	0.1810
Zimmer Holdings Inc	\$5,053,800	\$1,901,000	\$291,200	0.0576	0.0926

Appendix Two. Raw Data Collected (Continued)

Company Name	No of Employees (000)	Price to Book Ratio	Closely Held Shares %	Trading Volume
3M Company	67,072	8.77	0.09	76,433,593,987.80
Adobe Systems Inc	3,507	8.50	10.88	31,352,777,097.92
Albemarle Corp.	3,000	1.97	26.59	957,334,540.38
Alcoa Inc	120,000	2.75	0.22	28,563,449,538.46
Altera Corp.	1,995	7.89	1.16	39,479,023,243.30
Altria Group	165,000	4.47	0.62	93,054,323,243.45
Amazon Inc	7,800	-21.54	40.10	91,144,473,361.20
Amerada Hess Corp.	11,481	1.03	37.96	9,643,139,063.38
American Eagle Outfitters	17,400	1.83	33.40	6,402,143,389.77
American Express Company	78,200	4.14	12.14	46,153,403,526.38
American International Group Inc	86,000	2.44	1.82	86,647,458,808.51
American Power Conversion Corp.	6,365	3.32	23.31	7,707,463,313.07
Amgen Inc	12,900	3.61	0.26	153,300,097,676.90
Apple Computers Inc	10,912	1.82	2.95	24,084,624,275.21
Applied Materials Inc	12,050	4.67	0.36	138,515,027,477.40
BEA Systems Inc	3,122	5.14	7.12	6,063,428,328.58
Biocoral Inc	9	-506.96	0.30	2,914,380.00
Biogen Idec Inc	3,727	1.71	0.77	36,126,176,780.16
Biomet Inc	5,120	6.94	8.35	15,901,239,246.10
Boeing Company	157,000	4.14	13.22	32,415,234,657.12
Broadcom Corp.	2,729	6.94	20.11	73,207,126,444.54
Brooks Automation Inc	1,900	3.14	2.72	3,856,657,104.32
Career Education Corp.	7,400	5.74	0.76	19,552,443,570.27
Caterpillar Inc	69,169	4.87	0.37	37,447,017,169.97
Cephalon	1,646	3.49	36.00	21,359,490,298.39
CH Robinson Worldwide Inc	4,112	6.39	9.23	4,082,366,352.96
Chiron Corp.	5,332	3.84	53.09	21,207,930,036.23
Cintas Corp.	27,700	4.79	26.91	12,290,268,169.59
Cisco Systems Inc	34,000	6.15	1.25	266,385,944,755.70
Citigroup Inc	259,000	2.62	0.96	134,888,292,745.90
Citrix Systems Inc	1,885	4.91	2.68	16,269,030,743.83
Coca Cola Company	49,000	8.79	13.21	58,096,864,597.46
Comcast Corp.	68,000	1.77	1.01	59,595,872,363.50
Compuware	9,356	1.69	22.39	2,971,413,531.28
Converse Technology Inc	4,663	2.05	14.30	10,143,620,408.88
Conocophillips	39,000	1.37	0.32	29,111,734,892.02
Costco Wholesale Corp.	103,000	2.51	1.36	39,354,404,018.76
Dell Inc	46,000	14.22	9.38	144,346,117,456.30
Dollar Tree Stores Inc	28,700	3.45	5.87	11,828,525,606.50
Dow Chemicals Company	46,372	4.21	0.12	27,881,311,705.13
Du Pont EI De Nemours	81,000	4.80	1.16	34,845,154,352.57
Eastman Chemicals Company	15,000	2.93	10.12	6,063,222,328.58
Ebay Inc	5,700	8.97	27.97	147,688,959,846.20
Electronic Arts Inc	4,000	5.83	0.63	66,142,859,800.55
Exxon Mobil Corp.	88,300	2.99	0.11	104,570,300,646.50
First American Corp.	29,802	1.27	17.54	2,883,498,866.10
Ford Motor Company	327,531	2.62	2.17	32,750,935,356.38
General Electric Company	305,000	3.94	0.18	138,995,627,295.20
General Motors Corp.	326,000	1.19	28.87	58,665,158,772.19
Golden Telecom Inc	3,004	1.75	61.61	573,693,848.02
Hewlett-Packard Company	142,000	1.85	5.44	55,494,490,208.98
Home Depot Inc	299,000	3.60	1.16	75,956,978,931.62
Honeywell International Inc	108,000	2.69	11.82	24,608,991,471.12
Intel Corp.	79,700	5.64	3.20	356,421,332,393.30
International Business Machine Corp.	319,273	5.64	0.12	155,414,517,646.80
Johnson & Johnson	110,600	5.78	0.05	111,143,522,776.60
JP Morgan Chase And Company	93,453	1.66	0.30	67,625,218,194.91
KLA Tencor Corp.	4,900	5.16	2.52	117,735,146,789.30
Lam Research Corp.	2,100	6.52	11.79	12,922,883,603.58
Level 3 Communications Inc	4,650	21.35	36.78	7,294,316,512.01
Linear Technology	2,613	7.35	11.54	52,571,759,749.31
Lyondell Chemical Company	3,350	2.59	50.08	4,015,985,271.36
Marvell Technology Group Limited	1,674	2.51	37.54	25,354,793,612.22
Maxim Integrated Products Inc	6,202	8.07	12.19	76,881,933,228.86
McDonalds Corp.	418,000	2.62	0.08	33,293,915,423.50
Medimmune Inc	1,650	3.75	0.19	39,099,933,591.38
Merck And Company Inc	63,200	6.57	0.06	92,487,871,781.93
Mercury Interactive Corp.	2,322	6.67	0.37	37,337,814,384.90
Microchip Technology Inc	3,373	5.59	1.60	26,644,448,984.03
Microsoft Corp.	55,000	4.22	14.82	432,555,457,942.90
Millennium Pharmaceuticals Inc	1,530	2.25	14.71	16,025,812,330.31
Molex Inc	17,275	3.37	49.70	5,744,791,611.32
Monsanto Company	13,200	1.49	0.19	7,519,658,169.24
Network Appliance Corp.	2,345	6.59	22.32	29,682,310,565.88
Nextel Partners Inc	17,000	5.34	21.40	94,477,344,687.94

Nike Inc	23,300	4.21	66.49	20,221,993,667.07
Novellus Systems Inc	2,902	3.10	0.55	75,328,165,659.26
Nvidia Corp.	1,825	4.05	7.61	37,985,296,156.42
Oracle Corp.	40,650	9.66	25.31	131,736,884,940.40
Paccar Inc	17,000	3.10	6.12	18,540,011,428.63
Patterson Companies Inc	4,772	6.04	23.18	7,682,771,197.59
Patterson UTI Energy Inc	5,800	3.35	4.93	11,143,128,291.85
People support Inc	12,163	2.87	8.03	40,599,069,289.13
Pfizer Inc	122,000	4.13	0.09	155,246,302,639.00
PPG Industries Inc	32,900	3.77	1.15	9,714,990,036.91
Praxair Inc	25,438	4.13	0.12	14,510,196,275.68
Procter & Gamble Company	98,000	7.58	0.11	75,025,971,846.00
Qualcomm Inc	7,400	5.65	2.49	130,556,693,841.30
Rohm & Haas Company	17,300	2.85	29.29	7,210,967,986.15
Sanmina-SCI Corp.	45,008	1.98	26.24	13,349,419,038.31
SBC Communications Inc	168,950	2.25	0.18	62,215,298,938.80
Symbol Technologies Inc	5,300	4.30	15.46	5,082,834,997.22
Time Warner Inc	80,000	1.61	0.17	67,326,424,636.46
United Technologies Corp.	203,300	4.28	0.26	42,997,842,873.22
Verizon Communications Inc	203,100	2.90	0.07	70,654,955,666.90
Visteon Corp.	72,000	0.72	9.97	2,016,786,742.42
Wal Mart Stores Inc	1,500,000	5.27	39.93	111,420,328,995.40
Walt Disney Company	112,000	1.96	0.79	39,460,083,768.00
Wells Fargo And Co	140,000	2.92	0.16	60,749,212,268.91
Zimmer Holdings Inc	6,500	5.53	0.08	21,632,267,647.37

Appendix Three. Industry Classification

1. Cnsmr Consumer Durables, NonDurables,	3752-3791
Wholesale, Retail, and Some Services	3793-3799
(Laundries, Repair Shops)	3830-3839
0100-0999	3860-3899
2000-2399	1200-1399
2700-2749	2900-2999
2770-2799	4900-4949
3100-3199	
3940-3989	
2500-2519	3. HiTec Business Equipment, Telephone
2590-2599	and Television Transmission
3630-3659	3570-3579
3710-3711	3622-3622 Industrial controls
3714-3714	3660-3692
3716-3716	3694-3699
3750-3751	3810-3839
3792-3792	7370-7372 Services - computer programming and data processing
3900-3939	7373-7373 Computer integrated systems design
3990-3999	7374-7374 Services - computer processing, data prep
5000-5999	7375-7375 Services - information retrieval services
7200-7299	7376-7376 Services - computer facilities management service
7600-7699	7377-7377 Services - computer rental and leasing
	7378-7378 Services - computer maintenance and repair
	7379-7379 Services - computer related services
	7391-7391 Services - R&D labs
	8730-8734 Services - research, development, testing labs
	4800-4899
2. Manuf Manufacturing, Energy,	
and Utilities	4. Hlth Healthcare, Medical Equipment, and Drugs
2520-2589	2830-2839
2600-2699	3693-3693
2750-2769	3840-3859
2800-2829	8000-8099
2840-2899	
3000-3099	
3200-3569	
3580-3629	
3700-3709	
3712-3713	5. Other Other -- Mines, Constr, BldMt, Trans, Hotels,
3715-3715	Bus Serv, Entertainment, Finance
3717-3749	