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Political, Social and Economic Determinants of Corporate Social Disclosure by Multi-national Firms in Environmentally Sensitive Industries

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Abstract

Using examples from environmentally sensitive industries, the paper examines the determinants of corporate social disclosure (CSD). The paper moves beyond the traditional literature in two respects. First it is international in scope, examining the accounting disclosure responses of multi-national companies to the pressures implied by the nature and scope of their operations. Second, variables measuring political risk and social development are developed so that these pressures can be measured, thereby introducing new dimensions to the literature. In common with previous studies, financial risk, size and other control variables are included. The relationships are tested econometrically utilising regression techniques not previously applied in the CSD literature but nonetheless more generally appropriate when using count dependent variables. Results suggest that managers feel an unequal sense of responsibility to different constituencies and their disclosure priorities are determined by stock market accountability, lobbying power of their domestic audience and the political risk of their activities rather than the impact of their activities in countries of operation.

1. Introduction

Why do large multi-national firms make corporate social disclosures (CSDs) in their annual reports? Two possible hypotheses are explored in this paper. First the 'benign' managerialist hypothesis that the firms are essentially enlightened oligarchies, which recognise their social and environmental impact and their associated responsibilities and make appropriate disclosures. At the centre of this argument is the notion that CSD is arises from an ethical code which is espoused by the senior management of the firm and is transmitted 'top down' as a matter of policy. If the benign hypothesis were true, it would be expected that the CSD response would be proportionate to the international scope of the firm's activities. An alternative second hypothesis is that firms have no such ethical code and that managers merely respond to market, social and political pressures when making CSDs. According to this hypothesis, CSDs reflect differential political, regulatory and lobbying power in different countries. Where these powers are the strongest, the firm makes greater CSDs in response, notwithstanding the objective level of environmental impact in that country. Where powers are weaker, for example in unstable and underdeveloped countries the firm

faces less direct pressure to make CSDs. Actual disclosures may in these circumstances be aimed at the governments and public where the corporation is domiciled, particularly where political, regulatory and lobbying systems are well-developed. In such circumstances, CSDs will inculcate a sense in local populations that their domiciled corporations are much more social responsible than they actually are. This alternative anti-managerialist and 'bottom up' hypothesis is referred to as the 'Maginot' hypothesis (Glasbeek, 1988, Wolfson and Beck, 2005) as CSDs under these circumstances are designed to create a false sense of security amongst the public that the corporations are exercising responsibility.

The purpose of this paper is to conduct an empirical test of the null 'benign' hypothesis and the alternative 'Maginot' hypothesis. There is currently little evidence in favour of either hypothesis or indeed on the relationship between international activity and CSD in general. Even so, over recent decades a large literature on the determinants of corporate social disclosure (CSD) has evolved. There have been two distinct approaches. First there have been economic studies which have explained CSD in terms of stock market and accounting metrics. Second, CSD has been related to the social context in which firms operate. In these models, the economic relationship between the firm's management and shareholders is extended to include social and environmental interests as part of a wider definition of the firm's stakeholders, or as a process of legitimating the firm's activities in the eyes of society. Although each approach has achieved significant results, it is not clear how the approaches compare and which of these explanations is the more robust. The first objective of this paper is therefore to test the joint effects of economic accountability and social context on CSD.

A problem with attempting such a synthesis, however, is that the two approaches have used differing methodologies. Studies utilising multiple stakeholder approaches and especially legitimacy theory tend to be qualitative and case study orientated whereas those mapping economic relationships tend to be quantitative. The approach adopted in this study is therefore to quantify the social and political variables. Whilst this allows us to see the relative performance of these variables against economic variables in testable models, a limitation is that it does not provide any generalisable test of stakeholder theory or legitimacy theory.

Nonetheless the study is important, since it is the first to attempt to quantify political and social variables in this fashion. The paper is organised as follows. The

next section reviews the prior empirical literature in the two areas referred to above. Section three sets out the data and model to test the 'Benign' and 'Maginot' hypotheses. Section four analyses the results. Section five draws conclusions and discusses the implications of the support for the 'Maginot' hypothesis.

2. Prior studies of the determinants of CSD

There has been extensive research suggesting that the stock market acts as an important source of demand for CSD information. Surveys of financial users have tended to conclude that CSD's are of moderate importance (Belkaoui, 1984; Benjamin and Stanga, 1977; Chenall and Juchau, 1977; and Firth, 1978) while other ranking studies undertake surveys of potential users to indicate their needs and demands for social information (see, Buzby and Falk, 1979; Belkaoui, 1980; Dierkes and Antal, 1985). These studies find CSD to be of importance to users and in some cases at least equally important as financial items of disclosure. In a more recent study (Deegan and Rankin, 1997), respondents were asked to consider whether different decisions would be made depending on the availability of CSD, finding that environmental disclosures are important and material to investors. From an agency theory perspective, as shareholders become aware of the effect of social and environmental performance of the firms in which they invest, managers will emphasise social and environmental performance by disclosing social and environmental information in the annual reports (Ness and Mirza, 1991). Milne and Chan's (1999) findings, however, suggest investors largely ignore narrative social disclosure.

In addition to their mixed empirical results, these studies are often either mis-specified or under-theorised (Gray et al, 1995a; Tilt and Symes, 1999) and too limited in scope. In general they are unable to accommodate structural conflicts of interest and inequalities (Tinker et al, 1991). Specifically for the purposes of the current study, if the demand for CSD is expressed only as a function of stock market calculation, although stock market participants may reflect social and political pressures in their valuations, the influence of these wider pressures cannot be quantified or differentiated from the underlying financial value of the disclosure. As the scope of international activity expands, it is expected that the firm faces greater pressure to disclose from a wider range of international financial institutions whose expectations may be complementary. At the same time, the political and social pressure for

disclosure will potentially increase and these must be differentiated for the purposes of empirical testing.

Legitimacy theory offers a potential solution to the under-theorisation of the economics-based studies. It is founded on the notion of a social contract (Dierkes and Antal, 1985; Gray et al., 1995b) and the dimensions of such a contract potentially increase as the firm diversifies its activities internationally. Accordingly, CSD is sometimes seen as a justification of the organisation's existence within society (Deegan and Gordon, 1996; Dowling and Pfeffer, 1975; Guthrie and Parker, 1990; Mathews, 1993; Patten, 1992; Shocker and Sethi, 1974; Ullmann, 1976). CSD may also be seen as a tool for establishing, protecting or repairing the legitimacy of the organisation in that they may influence public opinion and public policy (Patten, 1991) and reduce political, social and economic exposure and pressure (Deegan and Rankin, 1997). Additionally, legitimising by producing CSD may play a part in influencing the policy process by shaping social and environmental standards, as suggested by Patten (1992, p. 472).

From the description of these studies, it can be seen that legitimacy theory is potentially nested within the benign hypothesis, as managers seek to fulfil their side of the social contract. For Lindblom (1994) the purpose is to influence 'relevant publics'. If a multi-national corporation begins to exploit the natural environment of an underdeveloped country, it follows that the members of that society become a 'relevant public'. However, it seems equally likely that the firm will not seek to manage its relationship with this 'public' if it has underdeveloped political organisation, regulation and lobbying institutions. Some studies have noted the selective nature of corporate legitimation and find that in situations of conflicting interests, organisations attempt to communicate legitimating characteristics to the most important relevant public and to ignore less important public (Neu et al, 1998; Oliver, 1991). Acceptance of differential importance provides potential support for the Maginot hypothesis, and how 'most important' is defined is and measured is very important for empirical testing.

3. Hypotheses and data

Hypotheses

According to the benign hypothesis, managers feel a sense of social responsibility which applies equally to the citizens of the countries in which they conduct their

activities. As the company expands its scope of operations, the benign hypothesis predicts that the scope of the annual report also expands to accommodate the new arrangements of social accountability. If the benign hypothesis is true, CSD will be positively related to the number of countries of operation.

According to the alternative 'Maginot' hypothesis, managers apply CSD where they are forced to do so by financial, political and social pressures. They will make differential disclosures reflecting inequalities in lobbying power between countries and between types of institution. For example where political institutions are underdeveloped, managers are less likely to adopt CSD in response to pressures in that country. To test the Maginot hypothesis three proxies are developed to measure financial, political and social accountability respectively.

Data

All data is based on year 2000. The sample comprises 87, 22 and 16 companies from the global Oil, Chemicals and Transportation industries, respectively. To be included a firm had to be international in its scope of operation, defined as operating in two or more countries. The sample of oil and gas production companies was obtained from a population of 1841 oil and gas production companies (as cited by the Wood Mackenzie database). The information available allows the quantification of the number of countries where a company has oil and gas reserves and the commercial value of these reserves. The sample of 87 oil companies represents 5.54% of the population, and covers US$607,982m commercial reserves, or 72.85% of the population's commercial reserves.

Model tested

The model tested in the paper can be summarised as follows:

$$CSD = \beta_0 + \beta_1 NOC + \beta_2 SMQ + \beta_3 CONRISK_i + \beta_4 ESI + \beta_5 FRISK \beta_6 SIZE + \beta_7 IND + \varepsilon$$

Where,

CSD = Corporate Social Disclosure;

β_0 = intercept;

β_1 to β_7 = Coefficients of slope parameters;

NOC = the number of countries of operation for each company

SMQ = the number of foreign stock market quotations;

$CONRISK_i$ = the unweighted average political risk of the countries in which firm i operates expressed as a percentage where 0% = minimum degree of risk and 100% = maximum risk.

ESI = the unweighted average environmental sensitivity index (ESI) of the countries in which firm i operates expressed as a percentage where 0% = minimum degree of sensitivity and 100% = maximum sensitivity.

FRISK= financial risk measured by the monthly standard deviation of stock returns for the year 2000.

SIZE = natural logarithm of sales turnover;

IND = industry classification dummy variable, CHEM = chemical industry firm, OIL = Oil industry firm. TRANS = Transport industry which is used as a reference group.

ε = error term.

Dependent variable

CSD as an empirical variable is defined as all the information produced by corporate management in its annual report regarding the interaction between the organisation and its physical and social environment, including issues such as those relating to human resources, community involvement and the natural environment. This study adopts the annual reports as a sole source of CSD data for a number of reasons. First, it is a statutory report, which is produced regularly, and one over which management exercises editorial control. Second, the annual report is a central corporate document which speaks about the organisation as a whole (Gray et al., 2001). Third, it can be easily accessed, as they are widely distributed. Fourth, annual reports are regarded as important documents in CSD due to the high degree of credibility they lend to information reported within them (Tilt, 1994). Fifth, they are used by a number of stakeholders as the sole source of certain information (such as environmental information (Deegan and Rankin, 1997)). Finally, as suggested by Wiseman (1982, p. 55) it 'is widely recognised as the principal means for corporate communications of activities and intentions has been the source for virtually all previous corporate research.'

Content analysis is used to measure CSD as it has been widely adopted in previous social responsibility disclosure studies (Hackston and Milne, 1996). To facilitate the completion of the content analysis, an interrogation instrument, checklist, and decision rules were developed. The sentence was used as the unit of coding. Reliability was assessed using two rounds of pre-testing by three coders. The two pre-testing rounds produced increasingly convergent views as to what constituted a CSR sentence, and led to the formulation of several decision rules and amendments to the initial checklist.

Two measures of CSD were used. CSD is the total number of sentences and CSDP is the average number of sentences per page, using an approximation to page measurement from the sentence-coded data (after Hackston and Milne, 1996). The central assumption underlying the choice of dependent variable is that expanded disclosures in the Annual Report are complements rather than substitutes. Therefore in the regressions below CSDP is used primarily as a robustness check on the main model.

Independent Variables

Number of countries (NOC) is used as a measure of the degree of multi-nationality (extent of multi-national operations) and the MNC's power and is the principle variable used to test the benign hypothesis, where, if true, a positive relationship with CSD is expected. Belkaoui (2001) measures the level of multi-nationality by the ratio of foreign profits/ total profits and the number of countries in which the company operates. Meek et al (1995) measure multi-nationality as a ratio of sales from outside the MNC's home country to total sales. For this study, because expansion into a new country creates a new social responsibility relation and therefore a potentially new accountability relation, number of countries of operation is used and was obtained for each company from its annual report.

The number of stock market quotations (SMQ) is used to examine whether financial market pressure contributes a proportionate increase in CSD. This variable is used to test whether or not such listings create financial pressures for more disclosure over and above the mere scope of international operations suggested by the benign hypothesis. A positive relationship between CSD and SMQ would provide support for the 'Maginot' hypothesis. The number of stock listings for the sampled companies was obtained from *Datastream*. Listings on more than one stock exchange in any

given country are counted as one listing for purpose of this study. This is because, the stock exchanges in one country usually share the same working environment and thus add nothing to the study that aims to investigate the effects of foreign multiple listing. Additionally, only those stock listings occurring before April, 2001 are included in the study. Hackston and Milne (1996) provide some evidence that dual and multiple overseas listings may be associated with greater social disclosure. Cooke (1989, 1992) finds an international listing effect on general voluntary accounting disclosures for Swedish and Japanese companies, respectively. Gray et al (1993) find the same for their sample of U.S., U.K. and Continental European MNCs.

Country risk (CONRISK) is a proxy for political stability. The study uses the International Country Risk Guide (ICRG) risk rating system to assign a numerical value (risk points) to a predetermined range of risk components, according to a preset weighted scale, for each country covered by the system. Each scale is designed to award the highest value to the lowest risk and the lowest value to the highest risk. The country risk variable refers to different risk aspects of countries where MNCs operate. The country risk measure is used twice in the study as a measure of both the countries' of origin and the countries' of operation political systems (coded [CONRISK(O)] and [CONRISK], respectively). For each sample company the average political risk for all the countries in which the firm operates was computed. In line with the assumption under the benign hypothesis that social responsibility to new publics creates complementary lines of accountability, simple averages were used so that each country carries an equal weighting. The total was then subtracted from 100%, so that firms with operations typically in higher risk countries have higher CONRISK scores.

The Environmental Sustainability Index (ESI) is used to proxy for social development. A high score indicates a high level of development and associated social and environmental regulation. Sandrea (2003) used ESI to proxy for country environmental risk. The measure includes different areas such as the environmental system (urban air quality, water quantity and quality, land, bio-diversity) in the country, environmental stresses (such as air pollution, water pollution/use, ecosystem stress, waste/consumption, and population) on the system, human vulnerability and public health, the social and institutional capacity (their science/technical capacity, rigorous policy debate, environmental regulation and management, tracking environmental conditions, and the public choice failures), and the overall country's

global stewardship (its ability to participate in efforts to conserve international environmental resources, and its impact on global commons). For each sample company the average ESI for all the countries in which the firm operates was computed. In similar fashion to the CONRISK variable above, the assumption is that under the benign hypothesis social responsibility to new publics creates complementary lines of accountability, so again simple averages were used so that each country carries an equal weighting. The total was then subtracted from 100%, so that firms with operations typically in socially underdeveloped countries have higher ESI scores.

Control variables

Financial risk (FRISK) is included in the study as a control variable. It is assumed that if corporate managers engage in CSD in response to widening their scope of operations or exposure to political and social risk then financial risk will also form part of their risk management strategy. Financial risk is computed as the standard deviation of monthly stock returns which was calculated from the share prices for the year 2000 that were obtained from the *Datastream* data base for each of the sampled companies over the chosen sample time period sampled companies.

An association between company size and CSD has been demonstrated in a number of empirical studies (Belkaoui and Karpik, 1989; Cowen et al., 1987; Kelly, 1981; Patten, 1991, 1992; Trotman and Bradley, 1981). Although size appears to be the most consistently reported as having a significant association with CSD, not all CSD studies have supported a size-disclosure relationship, where, for example, Roberts (1992) found no relationship in a US sample. Similarly, in New Zealand, Ng (1985) failed to support hypothesised association between company size and CSD practices. These inconsistencies might reflect differences in the countries of study or even the nature of sampled companies (local, multi-national, or a mix of the two types). Corporate size is measured in different ways in the prior CSD literature such as by the natural logarithm of book value of total assets (Singhvi and Desai, 1971; Patton and Zelenka, 1997; Inchausti, 1997), by the market value of equity (Lang and Lundholm, 1993), the natural logarithm of turnover (Belkaoui and Karpik, 1989; Patten, 1991, Roberts, 1992). In this study SIZE is the natural logarithm of the turnover, being the most popular measure of corporate size in the past research of CSD.

A number of studies have examined whether industry sector is able to explain CSD; Control for industry membership in the regressions is potentially important. Hackston and Milne (1996) report that disclosures are higher in, what they classify as, high profile industries while Ness and Mirza (1991) found this relationship holds specifically for the oil industry. On the other hand, Cowen et al (1987), Adams et al (1995) and Freedman and Jaggi (1988) find that specific areas of disclosure are related to industry sector. Cowen et al (1987) find that the industry helps to explain energy and community disclosures whilst Adams et al (1995) conclude that the industry explains some environmental and some employee disclosures. The sample contains companies from three industries, shown under the IND grouping variable. They are Chemicals (CHEM), Oil (OIL) and Transport (TRAN). Each is chosen for the relative environmental sensitivity of its activities. TRAN is used as a reference group so that the differential effects of CHEM and OIL can be assessed in the analysis.

4. Analysis

Descriptive statistics

Summary descriptive statistics are shown in table 1. Preliminary exploration of the data revealed a number of problems. As the dependent variable was a count measure, the most important issue was model specification. As is typical of such data the standard deviation was high relative to the mean. However all companies in the sample made some disclosure and there was no limit on the right hand side of the distribution. Therefore the dependent variable was transformed into a categorical variable CSD1 taking a value of 1 if CSD>0 & CSD<=20, 2 if CSD>20 & CSD<=39…5 if CSD >80. The effect of this transformation was to reduce the standard deviation in relation to the mean (Table 1, panel A). For the same reasons a similar transformation was applied to CSDP, using cut points at CSDP>0, 1, 2, 3, and 4> to create a new categorical variable CSDP1. As can be seen from table 1, the effect of these transformations was to reduce the standard deviation relative to the mean. To accommodate the categorical dependent variable, ordered probit specification was used.

Table 1 about here

A second problem was the influence of outlying observations in the regression residuals in tests of the full model. Royal Dutch Shell had a particularly disproportionate influence and was removed from subsequent regressions in which the sample size is reported as 124. Cook-Weisberg tests indicated the presence of heteroscedasticity in the residuals, so robust standard errors were used in all models tested (White, 1980). Finally, as can be seen from table 1 panel B there was significant cross correlation between several of the independent variables. The CONRISK and ESI variables both measure the general level of development to some extent and therefore some correlation is to be expected. Multi co-linearity was dealt with by sequential variable omission and by using stepwise model building.

Table 2 about here

Discussion of Results

Table 2 panel a) reports the results of six models using CSD1 as the dependent variable. NOC was insignificant in all models tested, including model 1a which offers a specific test of the benign hypothesis. Although NOC always has a positive co-efficient, there is no evidence that as the firm diversifies its operations, managers feel any obligation to open up new lines of reporting and accountability to the public in the affected countries. Model 2a adds the SMQ variable which is highly significant in this and all subsequent models tested. Looking at the results in models 1a-6a inclusive it can be seen that the SMQ variable dominates the NOC variable. International diversification of financial accountability therefore dominates the diversification of operating activity as a determinant of CSD. Also the marginal effects are much greater. On average the firms were operating in 18 different countries but had only 2 stock market quotations. Marginal effects analysis shows that an additional stock market quotation increases CSD by around 25%.

The introduction of CONRISK and ESI variables into the analytical models illustrated their differential effects.[1] CONRISK had a higher co-efficient in all models in which it was tested compared to CONRISK(O). In contrast ESI(O) had a higher co-efficient and was more significant than ESI in all models. In all models CONRISK

[1] On average a sample company's international activities increased its exposure to political risk by 46% and to less developed countries by 43% (based on the ratios of CONRISK/CONRISK(O) and ESI/ESI(O) respectively in table 1.

(including CONRISK(O)) and ESI (including ESI(O)) variables have positive and negative signs respectively. As expected, exposure to political risk increases CSD whilst relative social underdevelopment reduces it. Model 3a summarises the main result from tests using permutations of these variables. Models 4 and 5 show the differential impacts of ESI and ESI(O), confirming the latter variable to be more influential. These results suggest that political risk in the destination country and social development in the home country condition the level of CSD. Because CSD is explained more strongly by the level of social development in the multi-nationals own country, rather than in the country of operation, the benign hypothesis is rejected. Managers do not provide equal accountability to the people of the different countries in which they operate. Managers seem to be giving precedence to publics that can exert more influence on them and but they feel nonetheless obliged to respond to the increased political risk overseas through increased CSD. These results provide support for the 'Maginot' hypothesis.

Model 6 reports a stepwise forward selection model using a 0.2 significance level for variable addition. The model confirms the positive relationship between CSD and the two CONRISK variables and the negative relationship with the two ESI variables. In view of the high correlation between CONRISK and ESI and CONRISK(O) and ESI(O) respectively (table 1), the co-efficients for individual variables must be treated with caution.

Dealing with the control variables in turn, FRISK had a consistently high and negatively significant co-efficient. The volatility of the firm's stock therefore seems to act as a strong constraint on CSD. There may be two reasons for this. First, where firms have a high level of combined operating and financial risk, they may be reluctant to disclose further details in case the market's perception of the riskiness of their activities increases further. Second, the volatility of their stock price may reflect their relatively narrow range of international activities which in itself reduces the necessity for disclosure. The interpretation of this variable is not central to the main objectives of the current paper, but in view of these findings is nonetheless a subject of potential further research. The industry control variables showed that whereas oil and transport firms were indistinguishable from one another, firms in the chemical industry make significantly more CSD. Finally the SIZE variable was positive and significant in all models tested showing strong support for the common finding of a strong relationship between size of firm and CSD.

Panel b of table 2 shows the results of similar models using CSDP as the dependent variable. Models 1b, 2b and 3b correspond exactly to the same numbered models in Panel A. Also, as in Panel A, model 9 reports the results of a stepwise forward selection model using a 0.2 significance level for variable addition. The results for models 1 and 2 respectively were very similar. Using the alternative dependent variable the result for NOC remains the same. In model 3b neither CONRISK nor ESI(O) were significant, in contrast to model 3a. In other words these factors promote an increase in absolute quantity of disclosure (model 3a) but not an increase in the prominence of CSD as a reported issue relative to other disclosures (model 3b). A possible reason is that because disclosures are being made primarily for the consumption of stock market participants and the domestic audience, managers consider the quantity of information to be sufficient, but do not privilege CSD at the expense of other disclosures. As models 7 and 8 in Panel B suggest, they are more likely to do this where CONRISK(O) is high. Again in these models ESI(O) has a larger co-efficient and is more significant than ESI, suggesting support for the 'Maginot' hypothesis consistent with the panel A results. Results for control variables are similar to panel A.

Conclusions

The benign hypothesis, which assumes corporate control by enlightened oligarchs of managers, who apply similar standards of social accountability to different groups of people across the globe, is rejected. The alternative 'Maginot' hypothesis is favoured by the evidence presented above. According to this hypothesis, the domestic public is comforted by the presence of impressively detailed CSDs in annual reports but is in ignorance of the true threat presented by corporate activities internationally. Meanwhile in countries where environmental protection is weak, local populations are all too well aware of the impacts of corporate activity but lack the defence mechanisms offered by CSD in more developed countries. As the survey results show, whatever the conscience of an individual manager, collectively they are motivated by the need to satisfy the requirements of stock market participants first, their domestic public second and the people affected by their international activities last. To the investor in the developed world, this 'Maginot' of CSD offers scant protection from the changes in material conditions that necessarily follow from the exploitation of the world's resources by oil companies and others, and like the French generals of 1940

will find that whilst paying attention to their neat line of forts, the enemy was taking their capital.

References

Adams, C.A., Hill, W.Y. and Roberts, C.B. (1995), *Environmental, Employee and Ethical Reporting in Europe*, (London: ACCA).

Belkaoui, A. (1984), *Socio-Economic Accounting*, Quorum Books, Connecticut.

Belkaoui, A. and Karpik, P.G. (1989), "Determinants of the Corporate Decision to Disclose Social Information", *Accounting, Auditing & Accountability Journal*, Vol. 2, No. 1, pp. 36-51.

Benjamin, J.J. and Stanga, K.G. (1977), "Differences in Disclosure Needs of Major Users of Financial Statements", *Accounting and Business Research*, Summer, pp. 187-192.

Chenall, R.H. and Juchau, R. (1977), "Investor Information Needs: An Australian Study", *Accounting and Business Research,* Vol. 27, Spring, pp. 111-119.

Cooke, T.E. (1989), "Disclosure in the Corporate Annual Reports of Swedish Companies", *Accounting and Business Research*, Spring, pp. 113-124.

Cooke, T.E. (1992), "The Impact of Size, Stock Market Listing and Industry Type on Disclosure in the Annual Reports of Japanese Listed Corporations", *Accounting and Business Research*, Vol. 22, No. 87, pp. 229-237.

Cowen, S.S., Ferreri, L.B. and Parker, L.D. (1987), "The Impact of Corporate Characteristics on Social Responsibility Disclosure: A Typology and Frequency- Based Analysis", *Accounting, Organizations and Society*, Vol. 12, No. 2, pp. 111-122.

Deegan, C. and Rankin, M. (1997), "The Materiality of Environmental Information to Users of Annual Reports", *Accounting, Auditing & Accountability Journal*, Vol. 10, No. 4, pp. 562-83.

Firth, M. (1978), "A Study of the Consensus of the Perceived Importance of Disclosure of Individual Items in Corporate Annual Reports", The *International Journal of Accounting Education and Research*, Vol. 14, No. 1, Fall, pp. 57-70.

Freedman, M. and Jaggi, B. (1986), "An Analysis of the Impact of Corporate Pollution Disclosures Included in Annual Financial Statements on Investment Decisions", *Advances in Public Interest Accounting*, Vol. 1, pp. 193-212.

Glasbeek, H. (1988), 'The Corporate Social Responsibility Movement: The Latest in Maginot Lines to Save Capitalism', *Dalhousie Law Journal*, Vol.11, pp.363-402.

Gray, R., Kouhy, R. and Lavers, S. (1995a), "Corporate Social and Environmental Reporting: A Review of the Literature and a Longitudinal study of UK Disclosure", *Accounting, Auditing & Accountability Journal*, Vol. 8, No. 2, pp. 47-77.

Gray, R., Kouhy, R. and Lavers, S. (1995b), "Methodological Themes: Constructing a Research Database of Social and Environmental Reporting by UK Companies", Accounting, Auditing & Accountability Journal, Vol. 8, No. 2, pp. 78-101.

Gray, R., Javad, M., Power, D.M. and Sinclair, C.D. (2001), "Social and Environmental Disclosure and Corporate Characteristics: A Research Note and Extension, *Journal of Business Finance & Accounting*, Vol. 28, No. 3, April/May, pp. 327-356.

Gray, R. H., Bebbington, K. J. and Walters, D. (1993), Accounting for the Environment: The Greening of Accountancy, Paul Chapman.

Hackston, D. and Milne, M.J. (1996), "Some Determinants of Social and Environmental Disclosures in New Zealand Companies", *Accounting, Auditing & Accountability Journal*, Vol. 9, No. 1, pp. 77-108.

Inchausti, B.G. (1997), "The Influence of Company Characteristics and Accounting Regulation on Information Disclosed by Spanish Firms", *European Accounting Review*, Vol. 6, No. 1, pp. 45-68.

Kelly, G.J. (1981), "Australian Social Responsibility Disclosure: Some Insights Into Contemporary Measurement", *Accounting and Finance*, Vol. 20, No. 3, February, pp. 97-107.

Lang, M. and Lundholm, R. (1993), "Cross-Sectional Determinants of Analyst Rating of Corporate Disclosure", Journal of Accounting Research, Vol. 31, No. 2, pp. 246-271

Lindblom, C. (1984), The Accountability of Private Enterprise: Private - No Enterprise - Yes. Social Accounting for Corporations. Edited by A.M. Tinker. New York, Marcus Weiner.

Meek, G. K., Roberts, C. B. and Gray, S.J. (1995), "Factors Influencing Voluntary Annual Report Disclosures by U.S., U.K. and Continental European Multinational Corporations", *Journal of International Business Studies*, Third Quarter, Vol.26, No. 3, pp. 555- 573.

Milne, M.J. and Chan, C.C. (1999), "Narrative Corporate Social Disclosure: How Much of Differences Do They Make to Investment Decision-Making", *British Accounting Review*, Vol. 31, pp. 439-457.

Ness, K.E. and Mirza, A.M. (1991), "Corporate Social Disclosure: A Note on a Test of Agency Theory", *British Accounting Review*, Vol. 23, No. 3, September, pp. 211-18.

Neu, D., Warsame, H. and Pedwell, K. (1998), "Managing Public Impressions: Environmental Disclosures in Annual Reports", Accounting, Organizations and Society, Vol. 23, No. 3, pp. 265-82.

Ng, L.W.(1985), "Social Responsibility Disclosures of Selected New Zealand Companies for 1981, 1982 and 1983", Occasional Paper, No. 54, Massey University, Palmerston North.

Oliver, C (1991), "Strategic Responses to Institutional Processes", Academy of Management Review, Vol. 15, pp. 145-179.

Patten, D. (1991), "Exposure, Legitimacy, and Social Disclosure", Journal of Accounting and Public Policy, Vol. 10, pp. 297-308.

Patten, D.M. (1992), "Intra-industry Environmental Disclosure in Response to The Alaskan Oil Spill: A Note on Legitimacy Theory", Accounting, Organizations and Society, Vol. 17, No. 5, pp. 471-5.

Patton, J. and Zelenka, I. (1997), "An Empirical Analysis of the Determinants of the Extent of Disclosure in Annual Reports of Joint Stock Companies in the Czech Republic", The European Accounting Review, Vol. 6, No. 4, pp. 605-626.

Roberts, R.W. (1992), "Determinants of Corporate Social Responsibility Disclosure", *Accounting, Organizations and Society*, Vol. 17, No. 6, pp.595-612.

Sandrea, R. (2003), "Upstream Opportunity Index Assesses E&P Investments", Oil and Gas Journal, Vol. 19, May, pp. 18-22.

Singhvi, S.S. and Desai, H.B. (1971), "An Empirical Analysis of the Quality of Corporate Financial Disclosure", The Accounting Review, Vol. XLVI, No. 1, January, pp. 129-138.

Tilt, C.A. and Symes, C.F. (1999), "Environmental Disclosure by Australian Mining Companies: Environmental Conscience or Commercial Reality? *Accounting Forum*, Vol. 23, No. 2, Jun, pp. 137-155.

Tinker, T., Lehman, C., and Neimark, M. (1991), "Falling Down the Hole in the Middle of the Road: Political Quietism in Corporate Social Reporting", Accounting, Auditing & Accountability Journal, Vol. 4, No. 2, pp. 28-54.

Trotman, K.Y. and Bradley, G.W. (1981), "Association Between Social Responsibility Disclosure and Characteristics of Companies", *Accounting, Organizations and Society*, Vol. 6, No. 4, pp. 355-362.

Wolfson, C. and Beck, M (2005) 'the International Oil Industry, in Wolfson, C. and Beck, M (eds.) *Corporate Social Responsibility Failures in the Oil Industry,* New York: Baywood.

Table 1: Descriptive Statistics

Panel A: Variable descriptives

Variable	Mean	Std. Dev.	Min	Max	Swilk
CSD	64.544	61.356	1	258	0.000
CSDP	3.093	2.976	0.040	12.320	0.000
CSD1	2.838	1.732	1	5	0.033
CSDP1	2.862	1.579	1	5	0.272
ESI	50.568	9.937	25.570	77.260	0.808
ESI_O	35.295	9.370	19.530	62.440	0.000
CONRISK	28.119	6.022	17.1	45.58	0.083
CONRISK_O	19.261	6.965	9.500	52.500	0.000
CHEM	0.185	0.390	0	1	
OIL	0.685	0.466	0	1	
SIZE	6.433	1.051	3.580	8.380	0.000
FRISK	0.120	0.050	0.020	0.300	0.000
NOC	17.855	22.541	2	150	0.000
SMQ	2.298	1.385	1	9	0.000

Panel B:
Correlations

	CSD1	**CONRISK**	**CONRIS~O**	**ESI**	**ESI_O**	**CHEM**	**OIL**	**SIZE**	**FRISK**	**NOC**	**SMQ**
CSD1	1.000	0.215	-0.103	0.105	-0.068			0.466			
CONRISK		1.000	0.254	0.618	0.147			0.125			
CONRISK_O			1.000	0.324	0.627			-0.024			
ESI			0.345	1.000	0.474			0.258			
ESI_O			0.528	0.493	1.000			0.200			
CHEM	0.294	-0.064	-0.112	0.185	0.179	1.000					
OIL	-0.193	0.192	0.190	-0.078	-0.224	-0.705	1.000				
SIZE						0.153	-0.210	1.000			
FRISK	-0.461	-0.115	0.114	-0.047	0.021	-0.081	0.117	-0.371	1.000		
NOC	0.385	0.420	0.123	0.435	0.246	0.225	-0.228	0.578	-0.364	1.000	
SMQ	0.361	0.158	-0.018	0.144	0.009	0.264	-0.185	0.231	-0.259	0.280	1.000

Table 2: Regression models

Panel a) Dependent variable = CSD1

	Model					
	(1a)	*(2a)*	*(3a)*	*(4)*	*(5)*	*(6)*
NOC	0.005	0.003	0.002	0.004	0.004	
SMQ		0.282***	0.256***	0.262***	0.279***	0.251***
CONRISK			0.033**			0.061***
CONRISK (O)						0.032**
ESI					-0.016*	-0.033**
ESI(O)			-0.027**	-0.023**		-0.029**
FRISK	-7.620***	-6.955***	-6.679***	-6.643***	-6.992***	-7.846***
CHEM	0.934**	0.742**	0.770**	0.812**	0.871**	0.943**
OIL	0.368	0.278	0.117	0.276	0.364	
SIZE	0.516***	0.486***	0.521***	0.523***	0.520***	0.597***
Psuedo R2	0.154	0.179	0.199	0.190	0.185	0.216
Chi Sq	58.290	83.620	75.420	76.880	81.430	97.350
N	124	124	124	124	124	124

Panel b) Dependent variable = CSDP1

	Model					
	(1b)	*(2b)*	*(3b)*	*(7)*	*(8)*	*(9)*
NOC	0.006	0.004	0.004	0.004	0.005	
SMQ		0.279***	0.268***	0.254***	0.278***	0.262***
CONRISK			0.005			
CONRISK_O				0.046***	0.026**	0.049***
ESI					-0.018*	
ESI_O			-0.010	-0.033**		-0.035**
FRISK	-5.543***	-4.681**	-4.428**	-5.531**	-5.653**	-5.941***
CHEM	0.969***	0.745**	0.759**	0.884**	0.929**	0.637***
OIL	0.493	0.415	0.387	0.302	0.464*	
SIZE	0.501***	0.476***	0.491***	0.537***	0.524***	0.548***
Psuedo R2	0.133	0.158	0.161	0.174	0.168	0.171
Chi Sq	56.010	81.320	79.830	85.910	83.690	79.770
N	124	124	124	124	124	124

Significance levels
*** $p < .01$
** $p < .05$
* $p < .10$

Based on White's (1980) heteroscedastic consistent standard errors.