Responding to the EU Emissions Trading Scheme: an empirical analysis of corporate carbon disclosure strategy

Responding to the EU Emissions Trading Scheme: An empirical analysis of corporate carbon disclosure strategy

Summary

The purpose of this paper is to explore how companies that hold carbon trading accounts under European Union Emissions Trading Scheme (EU ETS) respond to the climate change by using disclosures on carbon emissions as a means to generate legitimacy compared to others. The study is based on disclosures made in annual reports and stand-alone sustainability reports of UK listed companies from 2001-2012. The study uses content analysis to capture both the quality and volume of the carbon disclosures. The results show that there is a significant increase in both the quality and volume of the carbon disclosures after the launch of EU ETS. Companies with carbon trading accounts provide greater detailed disclosures as compared to the others without an account. We also find that company size is positively correlated with the disclosures while the association with the industry produces an inconclusive result.

Key words: European Union Emissions Trading Scheme, carbon disclosure, content analysis

Responding to the EU Emissions Trading Scheme: An empirical analysis of corporate carbon disclosure strategy

Since the introduction of the European Union Emissions Trading Scheme (EU ETS) in 2005, European companies have been confronted with new challenges from both the regulators and the public (Engels, 2009). The scheme, which is mandatory for all member countries of the European Union, has developed and established a series of policies and practices regarding how to account for carbon emission allowances (MacKenzie, 2009). Nevertheless, companies' motivation of disclosing carbon related information such as recognition and measurement of carbon emission allowance in their annual and corporate social responsibility (CSR) reports is unclear. Prior studies (Cho and Patten, 2007, Patten, 2002, Patten, 1992, Wiseman, 1982, Roberts, 1992, Mahadeo et al., 2011, Lindgreen and Swaen, 2010, Adams et al., 1998, Dowling and Pfeffer, 1975, Deegan et al., 2002) suggest that environmental reporting is regarded as one of the main CSR communication medias to address the threats to legitimacy when companies are subject to social exposure and need to disclose information to gain and preserve legitimacy with relevant stakeholders.

In this paper, we aim to explore how companies that hold carbon trading accounts and transactions respond to the climate change by using disclosure as a means to generate legitimacy compared to the others. To date, carbon research has largely focused on accounting and reporting for emission trading (Lohmann, 2009, Cook, 2009, Bebbington and Larrinaga-González, 2008) little attention has been paid to carbon disclosure. We examine the disclosure theories including legitimacy theory, stakeholder theory and political economy of accounting theory from the socio-political perspective (Gray et al., 1995, Clarkson et al., 2008). Stakeholder theory (Friedman and Miles, 2006, Ullmann, 1985) suggests that environmental disclosures are made in response to the stakeholders' demand for social and environmental information, while legitimacy theory (Dowling and Pfeffer, 1975, Suchman, 1995) posits the relationship between corporate environmental and social disclosures and societal expectation and community concerns (Gray et al., 1995).

We conduct a longitudinal review from 2001-2012. In order to eliminate other factors such as the difference in culture and accounting systems that can cause the variance in carbon disclosures, this study only uses sample of UK listed companies that are carbon trading account holders and compares them with the companies that do not have an account. According to Freedman and Jaggi (2005), companies ratifying the climate change schemes such as Kyoto Protocol are more forthcoming to make carbon disclosures. We expect that companies with trading account holders make higher degrees of disclosures compared to the peers that do not hold an account. This study uses content analysis technique as it has been widely used in the research on corporate social and environmental reporting. We hand review companies' annual and stand-alone sustainability reports using a combination of a modified 8 points disclosure-scoring index developed by (Wiseman, 1982) and a self-constructed EU ETS scheme-related disclosure index to capture both the quality and volume of the carbon disclosure. In addition to contributing to the completeness of the analysis, the examination of both annual and standalone reports introduces another measure of companies' environmental reporting practice. (Holland and Boon Foo, 2003) argue that companies that produce stand-alone reports may signal that they consider social and environmental responsibility to be important and potentially as much so as financial reporting.

The results are firstly aggregated per year to observe the general trends of carbon disclosures. Prior empirical studies (Cho et al., 2012, Patten, 1992, Guthrie and Parker, 1989) investigate the impact of specific events on environmental disclosures and find that companies tend to use social and environmental disclosures to react to specific events and mediate the negative impact from such events. In this study, we focus on the impact of EU ETS as the specific event on the variation of carbon disclosures. The results are then regressed against the company size, industry and membership of ETS. Environmental accounting literature argues that company size and industry are two important factors that could influence the quality and the extent to which environmental information is disclosed (Freedman and Jaggi, 2005, Hackston and Milne, 1996, Roberts, 1992). (Watts and Zimmerman, 1986) argue that large companies are more visible to the public and are more newsworthy than small ones because of the market power they have. Thus we expect that large companies disclose more information than those companies with smaller size. Industry is another strong indicator of the quality of the environmental disclosures. Prior empirical studies indicate that companies from environmental sensitive industries such as manufactory, mining, construction, oil, chemical and utilities, in which the manufacturing process has a negative influence on the environment, disclose and report considerably more information than those from other industries such as finance and service (Lund, 2007). In this study we look at each industry separately as our preliminary finding suggests that some companies in non-environmental sensitive industry disclose even more than those operate in environmental sensitive industry.

Our empirical results support our hypotheses. We find that that there is a significant increase in both the quality and volume of the carbon disclosures after the launch of EU ETS. Companies with carbon trading accounts provide greater detailed disclosures as compared to the others without an account. In testing the factors that could affect the carbon disclosures trend, the study reveals that company size is positively correlated with the disclosures while the association with the industry produces an inconclusive result. The results are generally consistent with legitimacy theory (Dowling and Pfeffer, 1975). Our study is situated in the context of the climate change mitigation movement. It makes both empirical and theoretical contributions to the growing literature on environmental accounting research. Although many studies have examined environmental disclosures (de Villiers and van Staden, 2006, Clarkson et al., 2008, Cho et al., 2012), rather less is known about how companies use disclosure as a legitimacy tool to respond to the pressures exerted on them by the EU ETS. We bridge this gap by examining companies' responses to EU ETS via the disclosure of detailed carbon related information in their reports. This study also provides useful information to policy makers to consider developing guidance and mandatory disclosure requirements.

Appendix A. Carbon Disclosure Criteria used for Content Analysis

General Disclosure

0	No disclosure. Nothing about carbon or carbon emission mentioned
1	General rhetoric. General knowledge about carbon accounting and carbon related regulations mentioned but no specification about what does the company do and their policy, attitude and effort on it.
2	General policy only. Description of the company's attitude and general policy only but no target and result mentioned.
3	Policy specified. Details of the company's policy described but no target and result mentioned.
4	Target, implementation and monitoring of the policy disclosed but no result published.

Specific Disclosure

5	Target, implementation and monitoring of the policy disclosed and quality result published.
6	Target, implementation and monitoring of the policy disclosed; both quality and quantity result published.
7	Current period quantity target, implementation and monitoring of the policy disclosed; both quality and quantity result published.
8	Current period quantity target, implementation and monitoring of the policy disclosed; both quality and quantity result published; future target disclosed.

Reference

ADAMS, C. A., HILL, W.-Y. & ROBERTS, C. B. 1998. CORPORATE SOCIAL REPORTING PRACTICES IN WESTERN EUROPE: LEGITIMATING CORPORATE BEHAVIOUR? *The British Accounting Review,* 30**,** 1-21.

BEBBINGTON, J. & LARRINAGA-GONZÁLEZ, C. 2008. Carbon Trading: Accounting and Reporting Issues. *European Accounting Review,* 17**,** 697-717.

CHO, C. H., GUIDRY, R. P., HAGEMAN, A. M. & PATTEN, D. M. 2012. Do actions speak louder than words? An empirical investigation of corporate environmental reputation. *Accounting, Organizations and Society*.

CHO, C. H. & PATTEN, D. M. 2007. The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, Organizations and Society,* 32**,** 639-647.

CLARKSON, P. M., LI, Y., RICHARDSON, G. D. & VASVARI, F. P. 2008. Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society,* 33**,** 303-327.

COOK, A. 2009. Emission rights: From costless activity to market operations. *Accounting, Organizations and Society,* 34**,** 456-468.

DE VILLIERS, C. & VAN STADEN, C. J. 2006. Can less environmental disclosure have a legitimising effect? Evidence from Africa. *Accounting, Organizations and Society,* 31**,** 763-781.

DEEGAN, C., RANKIN, M. & TOBIN, J. 2002. An examination of the corporate social and environmental disclosures of BHP from 1983-1997: A test of legitimacy theory. *Accounting, Auditing & Accountability Journal,* 15**,** 312-343.

DOWLING, J. & PFEFFER, J. 1975. Organizational Legitimacy: Social Values and Organizational Behavior. *The Pacific Sociological Review,* 18**,** 122-136.

ENGELS, A. 2009. The European Emissions Trading Scheme: An exploratory study of how companies learn to account for carbon. *Accounting, Organizations and Society,* 34**,** 488-498.

FREEDMAN, M. & JAGGI, B. 2005. Global warming, commitment to the Kyoto protocol, and accounting disclosures by the largest global public firms from polluting industries. *The International Journal of Accounting,* 40**,** 215-232.

FRIEDMAN, A. L. & MILES, S. 2006. *Stakeholders: Theory and Practice,* Oxford, Oxford University Press.

GRAY, R., KOUHY, R. & LAVERS, S. 1995. Constructing a research database of social and environmental reporting by UK companies. *Accounting, Auditing & Accountability Journal,* 8**,** 78-101.

GUTHRIE, J. & PARKER, L. D. 1989. Corporate social reporting: a rebuttal of legitimacy theory. *Accounting and Business Research,* 19**,** 343-352.

HACKSTON, D. & MILNE, M. J. 1996. Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, Auditing & Accountability Journal,* 9**,** 77-108.

HOLLAND, L. & BOON FOO, Y. 2003. Differences in environmental reporting practices in the UK and the US: the legal and regulatory context. *The British Accounting Review,* 35**,** 1-18.

LINDGREEN, A. & SWAEN, V. 2010. Corporate Social Responsibility. *International Journal of Management Reviews,* 12**,** 1-7.

LOHMANN, L. 2009. Toward a different debate in environmental accounting: The cases of carbon and cost–benefit. *Accounting, Organizations and Society,* 34**,** 499-534.

LUND, P. 2007. Impacts of EU carbon emission trade directive on energy-intensive industries — Indicative micro-economic analyses. *Ecological Economics*, 63**,** 799-806.

MACKENZIE, D. 2009. Making things the same: Gases, emission rights and the politics of carbon markets. *Accounting, Organizations and Society,* 34**,** 440-455.

MAHADEO, J. D., OOGARAH-HANUMAN, V. & SOOBAROYEN, T. 2011. A longitudinal study of corporate social disclosures in a developing economy. *Journal of Business Ethics*, 104**,** 545-558.

PATTEN, D. M. 1992. Intra-industry environmental disclosures in response to the Alaskan oil spill: a note on legitimacy theory. *Accounting, Organizations and Society,* 17**,** 471-475.

PATTEN, D. M. 2002. The relation between environmental performance and environmental disclosure: a research note. *Accounting, Organizations and Society,* 27**,** 763-773.

ROBERTS, R. W. 1992. Determinants of corporate social responsibility disclosure: an application of stakeholder theory. *Accounting, Organizations and Society,* 17**,** 595-612.

SUCHMAN, M. C. 1995. MANAGING LEGITIMACY: STRATEGIC AND INSTITUTIONAL APPROACHES. *Academy of Management Review*, 20**,** 571-610.

ULLMANN, A. A. 1985. Data in Search of a Theory: A Critical Examination of the Relationships Among Social Performance, Social Disclosure, and Economic Performance of U.S. Firms. *Academy of Management Review,* 10**,** 540-557.

WATTS, R. & ZIMMERMAN, J. 1986. Positive accounting theory.

WISEMAN, J. 1982. An evaluation of environmental disclosures made in corporate annual reports. *Accounting, Organizations and Society,* 7**,** 53-63.