

# ANOMALIES IN THEORETICAL PERSPECTIVES ON CORPORATE SOCIAL AND ENVIRONMENTAL DISCLOSURE: EVIDENCE FROM CHINA

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## Abstract

The research question in this study is whether Western-developed theories from socio-political and economics-based perspectives are able to provide predictable empirical results in the context of corporate social and environmental reporting (CSER) by Chinese listed companies or are there some Kuhnian anomalies? To address this issue, seven theoretical perspectives on incentives for CSER are modelled. To test the models, data are collected from the top 56 CSER-disclosing companies on the H-share and Red-chip lists of the Hong Kong Stock Exchange. Quantitative and qualitative CSER disclosure scores and surrogate measures for variables identified from the seven theoretical perspectives are computed. The results reveal counter-directional relationships (i.e., anomalies in the theories) for debtholder power and success-reinforcement-signalling. Lack of support (i.e., non-significant relationships) is found for media attention and stability-reinforcement-signalling, while support is found for strategic posturing, incident response and political costs perspectives. Implications for the development of theoretical perspectives in order to understand the emerging practice of CSER in China are discussed.

**Keywords:** Corporate social and environmental reporting; stakeholder theory; legitimacy theory; signalling theory; China.

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## Introduction

A defining characteristic of corporate responsibility in the 21st century will be the need to communicate effectively with stakeholders on progress towards not only economic prosperity, but also social justice and environmental quality (Wheeler and Elkington, 2001). The recent history of corporate social and environmental reporting (CSER) since the 1990s confirms that the number of companies disclosing social and environmental policies, activities and performance has increased considerably (Cerin, 2002; Kolk, 2003). The extent of, and motives behind, CSER in Western countries has received widespread attention from academics and managers alike (e.g., Rowley and Berman, 2000; McWilliams and Siegel, 2001; McWilliams et al., 2006; Waldman et al., 2006).

In the absence of comprehensive and widely enforced CSER disclosure regulations, the growth in CSER practices must depend on voluntary disclosure practices. Several theoretical perspectives have been invoked to research motives for corporate management to voluntarily increase CSER disclosure. These theoretical perspectives can lead to competing predictions about the direction of voluntary CSER disclosure. Clarkson et al. (2008) compare predictions from economics-based and socio-political theories of voluntary disclosure. They explain that economics-based signaling theory (Dye, 1985; Verrecchia, 1983; Roberts, 1992) predicts a positive association between corporate economic performance (and environmental performance) and the level of discretionary CSER disclosure. On the other hand, socio-political theories including political economy, legitimacy theory, media agenda setting theory, incident response theory and stakeholder theory (e.g., Neu et al., 1998; Deegan et al., 2000; Patten, 1992, 2002), predict a negative association between environmental performance and the level of discretionary environmental disclosures. Clarkson et al. (2008) go on to suggest that with competing directional predictions from alternative theories, and the observed direction of association between variables from these theories and discretionary disclosures, then one set of predictions will be eliminated. However, this conclusion is fallacious because these multiple theories could be modelled in a single regression and produce relationships in the direction predicted by their respective theory, whether positive or negative, each of which could contribute to the explanatory power of the model.

This study will select competing theoretical perspectives that could explain the level of discretionary CSER and subject them to empirical testing. The aim is to identify, on the basis of data from listed companies operating in China, which theoretical perspective(s) are found to be supported (significant and in the predicted direction), not supported (not significant) or anomalous (significant but in the opposite direction to the theories' prediction). Of particular interest will be the latter finding, which would be evidence of a potential Kuhnian anomaly. Kuhn's (1970) seminal book on the structure of scientific revolution proposed that knowledge does not progress well through evolutionary steps as implied in inductivism and falsification. Rather it takes a more revolutionary route that follows the steps of first recognizing anomalies in the existing 'paradigm', then creating a period of insecurity, developing alternative sets of ideas, and eventually getting domination of the new ideas or paradigm. The first step, when there are sufficient outcomes that are contrary to the prediction of the theoretical perspective (called anomalies), is a precursor to the whole paradigm change process (Wells, 1976).

## **Objectives and Motivation**

This study aims to provide evidence on which competing theoretical perspectives better explain the quantity and quality of CSER disclosures by Chinese companies, by focusing on H-share and Red-chip companies listed in Hong Kong.

While attention has been given to the communication of CSER to stakeholders in developed economies, there is limited evidence concerning CSER in transitional economies, especially the major transitional economy of China (Rowe, 2007). This study seeks to determine whether the various Western-developed theoretical perspectives are sufficiently robust to be transferable to the different country setting of China, or, in this setting, will Kuhnian anomalies be found in any of these theoretical perspectives.

The practical motivation for this study is that China has emerged as a dominant manufacturing and consuming region of the world. The social and environmental responsibility of its large companies is a global concern. Hence, relevant policy-makers and publics would gain from research that addresses the issue of which theories are effective or ineffective in understanding the rise of CSER, or lack thereof, by Chinese companies. For example, does evidence support the use of Western-developed socio-political perspectives of legitimacy and stakeholder theories as ways of explaining the quantity and quality of discretionary CSER disclosure? Or does the context of Chinese government ownership and control make these theories ineffective? Further, does the use of Western economic-based perspectives of corporate signalling in rational and efficient capital markets, provide effective or ineffective ways to understand the extent of CSER disclosure in China?

## **Background on CSER in China**

Modernization of corporate management and securities markets have helped propel China to “breakneck economic expansion of more than 10% pa for four straight years to 2007” (Bezlova, 2007, p. 8). However, this economic growth has been co-incident with growing public concerns about environmental protection and work safety. There is mounting international concern about China’s social and environmental sustainability. For example, the International Energy Agency (IEA), which advises developed countries on energy policies, announced in early 2008 that China’s emissions of greenhouse gases have surpassed those of the US. If China’s emissions trend is not checked, “in 25 years the carbon-dioxide from China alone will be double that which comes from all the OECD countries put together”, according to Bezlova (2007, p. 9).

Against the background of critique on the negative social and environmental implications of globalization, multinational enterprises have become more active in reporting on activities undertaken to prevent these ‘externalities’ of production and international trade. Kolk (2003) finds that the Fortune Global 250 companies continue to show a significant rise of CSER. He identified the fact that “the ‘sustained’ nature of sustainability reporting is accompanied by regulatory requirements and government encouragements in Europe and Japan especially” (p. 279).

In China, the national government has issued the Environmental Protection Act of the People's Republic of China and set up the State Environmental Protection Administration (SEPA) and the State Administration of Work Safety (SAWS) to oversee, inspect, direct and coordinate the works of relevant departments and agencies of the State Council and provincial governments in the field of environmental protection and work safety. However, there is little evidence that these initiatives have tackled the issue of making Chinese business enterprises more publicly accountable to their external investors, consumers, employees or local communities for their social and environmental policies, activities and performance.

The WTO accession on 11 December 2001 was expected to promote the sustained and healthy development of China's economy. The central government has since released stricter laws and regulations on corporate social and environmental behaviours due to the growing public concerns over environment and safety issues caused by enterprises and foreign investors particularly.

## **Literature Review and Hypotheses Development**

This study integrates both socio-political theory and economic-based theory to form a two-pronged coverage of the more prominently invoked theoretical perspectives that underpin empirical studies in the accounting literature on incentives affecting managements' decisions to increase or decrease the company's CSER disclosure.

### **Socio-Political Theories**

Socio-political theories including political economy, legitimacy theory, and stakeholder theory (Patten, 2002) predict a negative association between environmental performance and the level of discretionary environmental disclosures. These theoretical perspectives suggest that CSER is a function of social and political pressures facing the corporation. To the extent that poor social and environmental performers face more political and social pressures and threatened legitimacy, they will attempt to increase discretionary environmental disclosures to change stakeholder perceptions about their actual performance (Clarkson et al., 2008).

Stakeholder theory and legitimacy theory have many similarities and contain overlapping perspectives that deal with mediation and transformation between the structural interests (Gray et al., 1995). Deegan (2002, p.295) suggests that "both theories conceptualise the organization as part of a broader social system wherein the organization impacts on, and is impacted by, other groups within society." Legitimacy theory intends to negotiate the expectation with society in accordance with the social contract, whereas stakeholder theory provides various stakeholder groups in society with resolutions (Deegan, 2002; Deegan, 2006). As stated by Gray et al. (1995, p.67) "The different theoretical perspectives (arising from legitimacy and stakeholder theories) need not be seen as competitors for explanation but as sources of interpretation of different factors at different levels of resolution."

### ***Stakeholder power perspective of stakeholder theory***

Freeman (1984) states that a stakeholder approach emphasizes the importance of management investing in relationships with those identifiable groups who have a stake in the firm. The theory posits that managers will formulate and implement

strategies to manage the potential demands of the more powerful stakeholder groups. It has been invoked to model and test the ability of particular stakeholder groups to impact on the level and types of CSER disclosures (e.g., Ullmann, 1985; Roberts, 1992; Neu et al, 1998).

Stakeholder power is a concept that can interpret why and how an organization responds to the intensity of stakeholders' demands, particularly when a stakeholder group controls critical resources of the organization (Ullmann, 1985). The more powerful the stakeholder group, the more the corporation must adapt (Gray et al., 1995). CSER is seen as part of the dialogue with relevant stakeholders (Roberts, 1992).

Prior studies have concluded that debtholders are an important type of stakeholder because they can influence capital structure of an organization (Roberts, 1992; Malone et al., 1993; Raffournier, 1995; Wallace and Naser, 1995; Zarzeski, 1996; Neu et al, 1998; Naser et al., 2002; Alsaeed, 2005; Premuroso and Bhattacharya, 2007; Joshi and Gao, 2009). Malone et al. (1993) argue that a high leverage (debt-equity ratio) indicates the management of a firm will have more incentives to provide corporate disclosure directed at the needs of long-term debtholders. In contrast, a low leverage ratio indicates the disclosure strategies of the management are targeted more toward shareholders than debtholders. The conflict between debtholders and shareholders for fixed claims leads to the anticipation that shareholders are more likely to expropriate those claims (Myers, 1977), bringing pressure from debtholders for additional disclosure (Schipper, 1981). Wallace and Naser (1995) support the argument of Malone et al. (1993) and suggest that corporate information disclosures can assured the long-term creditors that shareholders and management are less likely to expropriate claims accruing from bond covenants (Myers, 1977; Schipper, 1981; Wallace et al., 1994). Cornell and Shapiro (1987) and Barton et al., (1989) conclude that debtholders are important stakeholders and corporate stakeholder strategies can be influenced by corporate structure. By following this reasoning, Roberts (1992) states "the greater the degree to which a corporation relies on debt financing to fund capital projects, the greater the degree to which corporate management would be expected to respond to creditor expectations concerning a corporation's role in social responsibility activities" (pp. 602-603). Based on above arguments, the first hypothesis is that:

*H<sub>1</sub>: Ceteris paribus, the greater a firm's reliance on debtholder finance, the higher the quantity and quality of CSER disclosure in the firm's annual report.*

### ***Strategic posture perspective of legitimacy theory***

Ullmann (1985) contends that the 'strategic posture' of management towards social and environmental responsibilities, whether active or passive, is the missing dimension that could explain the extent to which social and environmental disclosures are employed in response to stakeholder demands and economic performance. Under Ullmann's (1985) stakeholder theory, the primary strategies for managing potential demands by key stakeholders about the corporation's social and environmental responsibilities are 'strategic posturing' and 'social disclosure'. He conceptualises that when stakeholder power is high, strategic posture will be active and social disclosure will be high (Ullmann, 1985). He describes strategic posture as "the mode of response

of an organization's key decision makers towards social demands" (p. 552). Gibson and Guthrie (1995), in a stakeholder study of environmental reporting in Australia, use the following scales to measure the concept of 'strategic posture': (1) any interaction of the firm's management with the government's Environmental Protection Authority, (2) any sponsorship of an environmental or relevant charitable foundation, and (3) the establishment of an environmental committee of the board of directors. In relation to management deciding to commit the company to making relevant charitable contributions, Navarro (1988) argues that such decisions are consistent with the profit maximisation motive. According to Navarro (1988), the profit motive includes using charitable contributions to (1) promote the firm's social image through its contributions to those charities favoured by certain stakeholders, (2) improve the general satisfaction of stakeholders such as employees, customers and regulators, thereby reducing potential political costs on the firm, (3) help the firm to mitigate unfavourable tax burdens. This latter point holds in Hong Kong, where charitable donations by companies are tax deductible against corporate profits tax.

Roberts (1992) argues that corporate charitable contributions can be viewed as representing the strategic posturing of management. He hypothesises that management will increase their company's charitable contributions in response to increasing demands by stakeholders that corporations behave in a socially and environmentally responsible way. He uses the existence of a sponsored charitable foundation by each company in his sample as the measure of an active management strategic posture towards demands for social and environmental responsibility. He correlates such charity funding with the level of CSER disclosure, citing Ullmann's (1985) argument of strategic posturing to manage potential demands by stakeholders for social responsibility. Based on above arguments, the second hypothesis is that:

*H<sub>2</sub>: Ceteris paribus, the existence of active strategic posturing by reporting charitable donations during the year is positively related the quantity and quality of CSER disclosure in the firm's annual report.*

In China, philanthropic giving has traditionally involved Chinese American and other overseas Chinese communities donating money directly to public welfare projects and disaster relief in their ancestral city or province in China. Donations by businesses through mainstream government-approved foundations are a relatively recent phenomenon in China (Yin and Lan, 2003). Whether charitable donations in China come from overseas or local Chinese businesses, the so-called 'Chinese model of philanthropy' is centred on the concept of "clan associations ... in a culture that emphasizes face" (Acs and Dana, 2001, p. 72). In this culture, according to Ace and Dana (2001), "rich entrepreneurs 'buy' prestige and leadership positions by assisting their poor" (p. 72). With governments in the new economy in China taking on more roles relating to the channelling of charitable funds, governments are becoming an increasingly important stakeholder for corporations that are deciding to make charitable donations. In this modern environment in China, the traditional 'Chinese model of philanthropy' would be compatible with management committing their company to philanthropic involvement and disclosing the fact as a strategic posture with governments and local communities for themselves and their company.

### ***Political cost perspective of legitimacy theory***

Under legitimacy theory, the focus is on societal perceptions of the adequacy of corporate behaviour (Suchman, 1995). Legitimacy theory posits that corporations must act within the bounds of what society identifies as socially acceptable behaviour in order to continue operating successfully (O'Donovan, 2002). Complying with social norms and values can become a source of pressure for organizations' legitimation, as such social norms and values are constantly changing.

The public pressure perspective of legitimacy theory is concerned with public and, consequently, government intrusions into the activities of organizations that are deemed to violate their 'social contract'. This perspective parallels Watts and Zimmerman's (1978) political cost hypothesis, in that larger firms are deemed to be more highly exposed to public scrutiny. Watts and Zimmerman (1986) argue that large firms are more visible to the public, have more market power and are more newsworthy. Hence, they are more likely to be subject to public resentment, consumer hostility, militant employees and the attention of government regulatory bodies. To limit these potential political costs, Watts and Zimmerman (1978) argue that they adopt profit-reducing accounting policies. From a broader legitimacy perspective, managers of larger firms are more likely to adopt various legitimisation strategies such as social responsibility campaigns in the media and greater voluntary disclosure for impression management. Dowling and Pfeffer (1975) suggest that larger firms are more politically visible, and thus they are expected to engage more heavily in legitimating behaviour.

Various studies find that there is a positive relationship between firm size or political visibility and political costs (Trotman and Bradley, 1981; Wong, 1988; Belkaoui and Karpik, 1989; Patten, 1991, 1992; Deegan and Carroll, 1993; Cullen and Christopher, 2002; Cormier and Magnan, 2003; Gelb and Greenstein, 2004). The politically visible firms need to respond to the demand of social activists. Thus, Belkaoui and Karpik (1989) suggest that a strategy for the decision-maker of social information disclosure is consistent with a firm's social performance, and thus results in a positive association between firm size and CSER disclosure. Cormier and Magnan (2003) provide evidence that larger firms tend to report more extensively on their environmental management than do smaller firms. They suggest that because larger firms are subject to more intense external monitoring than smaller firms, such firms would disclose more environmental information than would smaller firms. In a study of environmental effects, Patten and Trompeter (2003) suggest that management could use environmental disclosure as a means of reducing potential regulatory costs, and also make decisions concerning the managing of earnings that are tied to a larger corporate strategy for dealing with political pressure. This is because firms with higher levels of environmental disclosures no longer need to manage corporate disclosure as much since the environmental disclosures reduce their exposure to the impact of political costs. Based on the preceding arguments, the third hypothesis is that:

*H<sub>3</sub>: Ceteris paribus, the larger the firm size, the greater the quantity and quality of CSER disclosure in the firm's annual report.*

However, the Western-developed assumption that larger companies will face greater potential political costs in the form of public resentment, consumer hostility, militant

employees and the attention of government regulatory bodies may be questionable in China's corporate and social context. Large companies in China were former state-owned enterprises (SOEs) and are still, on average, 65% owned by government. Would the notion of wealth redistribution away from financially successful government-linked corporations by politicians and bureaucrats in China be a likelihood? Would governments respond to public pressure by imposing large penalties, taxes or other regulatory intrusion on their own government-linked companies? Would employees or consumers be likely to become militant over perceptions of poor corporate social or environmental performance? There is also evidence provided by (O'Dwyer, 2002) from management interviews in Ireland that managers would refrain from CSER as a reaction to particular social and environmental concerns of the public because such reaction can act to legitimise the public concerns. Would this be the view of government-appointed directors of state-owned listed companies in China?

### ***Media attention perspective of legitimacy theory***

Legitimacy theory research extends to examining the role that media coverage plays in increasing the public policy pressures faced by companies (Patten, 1992). Brown and Deegan (1998) and Deegan et al. (2000) provide evidence that higher levels of print media coverage of environmental issues increase public policy pressure by driving public concerns, which in turn lead to greater environmental disclosure by affected companies. They invoke media agenda-setting theory, which posits a relationship between the relative emphasis given by the media to various topics (media agenda) and the public's perception of the importance of these topics (public agenda).

Prior empirical studies indicate that corporate disclosure can be explained by media agenda-setting theory (Deegan and Carroll, 1993; Brown and Deegan, 1998; Neu et al., 1998; Cormier and Magnan, 2003; Brammer and Pavelin, 2008). Brown and Deegan (1998) investigate the relationship between the attention given by the print media to an industry's environmental issues and the extent of environmental disclosure in annual reports of companies in the industry. Their findings indicate significant relationships in six of the nine industries investigated. Neu et al. (1998) find that the amount of media coverage of criticisms of companies by environmental lobby groups during a particular year is associated with decreased levels of environmental disclosure. They infer from their findings that when multiple relevant public groups exist with incommensurable interests, corporate environmental disclosures will accommodate the interests of the more dominant sections of the public, such as financial stakeholders, and defy the interests of the more marginal sections, such as environmental groups. But they also find that when the media sets a clear social and environmental agenda, as legitimacy theory indicates, firms respond with improvements in their corporate social responsibility. Based on the balance of Western-developed theory and evidence about the effects of media agenda-setting on corporate disclosures, the fourth hypothesis is that:

*H<sub>4</sub>: Ceteris paribus, the larger the print media attention specific to a firm's CSER during a year, the higher the quantity and quality of CSER disclosure in the firm's annual report.*

Would this hypothesis be supported in the context of media agenda setting in China, where the government continues to keep tight control of newspapers and where business enterprises can ‘manage’ journalists? Although the media in China has become largely commercialised rather than government funded, all newspaper publishers must still be approved by the State Press and Public Administration, and have a ‘responsible department’ (*zhuguan bumen*) that maintains leadership and control. For a national newspaper, this department must have the minimum rank of a central government ministry, and for a provincial paper, the minimum of a provincial bureau. Moreover, according to (Zhao, 1998, p.183), “corruption has been part and parcel of the process of media commercialisation” and that businesses (especially state-owned multinationals) and other institutions often take advantage of journalists, media officials and editorial departments, and vice versa, for their own financial gains. For example, the “most innocent form of corruption in China is ‘three-warranty reporting’, whereby journalists are invited by business enterprises who pay their travel, accommodation and meals. They report what their host wants them to report, which is always ‘good news’” (Zhao, 1998, p.184). In these circumstances, media agenda-setting theory may not apply in a way that leads corporations to respond by increasing their CSER. In fact, the conventional path taken by government in China has been, until now, “develop first and then treat the pollution” (Zhang, 2007, p. 354). That is, media agenda setting by government and its ‘responsible departments’ has been to encourage economic growth of corporations rather than draw attention to their social and environmental performance.

#### ***Paroxysmic incident response perspective of legitimacy theory***

Legitimacy theory assumes that there is a social contract either expressed or implied between organizations and society (Shocker and Sethi, 1973). To remain legitimate, the organization needs to fulfil this social contract (Guthrie and Parker, 1989). Lindblom (1994) identifies four courses of action an organization can take to obtain/maintain legitimacy: (1) to educate and inform its ‘relevant publics’ about (actual) changes in the organization’s performance and activities; (2) to change the perceptions of the relevant publics—but not change its actual behaviour; (3) to manipulate perception by deflecting attention from the issue of concern to other related issues through an appeal to, for example, emotive symbols; (4) to change external expectations of its performance. From a legitimacy perspective, public dissatisfaction (threat) with a firm’s event (incident) can result in pressure to the firm to meet expectations or to require improved performance. This dissatisfaction not only relates to the particular firm responsible for the specific incident, but also to the general impact on other firms in the society (Patten, 1992).

Prior empirical studies conclude that firms with negative environmental events or the publication information that may be perceived as unfavourable to the environment will have greater CSER disclosures in their annual reports (Patten, 1992; Gray et al., 1995; Deegan and Rankin, 1996; Li et al., 1997; Hutchings and Taylor, 2000; Cunningham and Gadenne, 2003). For example, Patten (1992) uses legitimacy theory to explain the effect of the Exxon Valdez oil spill on an increase in annual report disclosures by petroleum firms other than Exxon. Li et al. (1997) investigate the environmental disclosures by listed Canadian companies in annual reports and conclude that the companies are more likely to disclose environmental information when the propensity to pollute increases. Hutchings and Taylor (2000) adopt legitimacy theory to interpret their findings that BHP and other mining firms

operating within Australia and Asia greatly increased their environmental disclosures in annual reports following the announcement of the Ok Tedi River pollution lawsuit against BHP. Cunningham and Gadenne (2003) also contend that firms with greater risk following the occurrence of negative environmental events or unfavourable information intend to increase environmental disclosures across a wide range of reporting documentation. If the Songhua River pollution spill<sup>1</sup> in China in 2005 resulted in a threat to the legitimacy of relevant industries, legitimacy theory suggests that the organizations should respond with increased CSER disclosure in their annual reports (Patten, 1992). Based on the preceding arguments, the fifth hypothesis is that:

*H<sub>5</sub>: Ceteris paribus, the Songhua River pollution spill incident significantly increased the quantity and quality of CSER disclosure in the firms' annual reports.*

Pollution in China had a significant negative impact against the objective of the 'scientific outlook on development' (*kexue fazhanguan*) stressed by PRC President Hu Jintao at the Chinese Communist Party Congress in October 2007 and the concept of sustainable and balanced growth. The Songhua River pollution incident revealed the limited capacity of local environmental protection bureaus to regulate industrial environmental behaviours and their failure to enforce the relevant regulations created by SEPA and SAWS. Obviously, there is a gap between policy-makers (the central government and its agencies) and implementers (local governments and individual firms). That is, the implementers may not enforce the regulations made by the policy-makers appropriately or the central government and its agencies lack power to enforce the implementers carrying out the regulations. Either way increases in CSER disclosures are not expected in entities' 2006 annual reports.

### **Economic-Based Theories**

Economic-based voluntary disclosure theory (Dye, 1985; Verrecchia, 1983) predicts a positive association between a firm's economic performance and the level of discretionary social and environmental disclosure. The notion is that superior economic performers (in terms of financial returns and financial risk) will convey their 'type' by pointing to objective performance indicators which are difficult to mimic by inferior type firms. Inferior performers will choose to disclose less on their economic performance, thus being placed in a pool of firms where investors and other users ascribe the 'average type' to that pool. What sustains this partial disclosure equilibrium is proprietary costs associated with disclosure about economic performance (Verrecchia, 1983) and uncertainty as to whether the firm is informed regarding its type (Dye, 1985).

### ***Profitability success reinforcement perspective of signalling theory***

Firms usually incur substantial expenditures to establish and maintain social and environmental programs, which will be directly affected by their profitability

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<sup>1</sup> An explosion occurred on 13 November, 2005 at a petrochemical plant of Jilin Petrochemical Corporation, located in Jilin Province in the northern China. The information provided by SEPA indicated that the explosion caused five deaths, more than 70 injuries, and one person missing, and resulted in spill of an estimated 100 metric tonnes of benzene, aniline and nitrobenzene in the Songhua River. This chemical spill formed a 90 kilometres long slick on the Songhua River, an important riverhead for water supplies, and flowed to downstream cities including Harbin of Heilongjiang Province in China and Khabarovsk of the Far Eastern Federal District in Russia.

(Ullmann, 1985; Christopher et al., 1996). Ullmann (1985) argues that the relationship between social performance and economic performance is complicated, and economic performance is important in two ways in accordance with past and current performance of a firm, and can be determined by the top management when judging the priority of economic and social demands. First, when a higher profit can be reported it implies that the firm is under a healthy situation and management “can afford the luxury of above-average social (and environmental) expenditure” (p. 541). It also indicates those top decision makers are willing to deal with the firm’s external stakeholders, and meet their multiple demands effectively. Second, when a firm faces a situation of low profitability, management may have little incentive to meet social and environmental responsibility demands due to expensive social and environmental programs; economic demands will have priority (Ullmann, 1985).

Prior studies examining the relationship between CSER and profitability performance measures have generally found positive results (Bradgon and Marlin, 1972; Bowman and Haire, 1975; Parket and Eibert, 1975; McGuire et al., 1988; Roberts, 1992; Malone et al., 1993; Wallace and Naser, 1995; Naser et al., 2002; Alsaed, 2005; Premuroso and Bhattacharya, 2007; Hope and Thomas, 2008). The reasoning is that management in highly profitable firms are motivated to signal their quality or success, not only through profit reports but also through their effective management of corporate social and environmental responsibility. Thus, greater CSER disclosure provides a reinforcement of the signalling of the ‘quality’ of the company and its management. This signalling of firm ‘quality’ can lead to increases in compensation for those managers. Wallace et al. (1994) and Wallace and Naser (1995) contend that firms with high profitability have more incentives to signal to the market and show-off their other successful activities or performance through additional information disclosure in their annual reports. This theoretical perspective can be referred to as the ‘success reinforcement signalling’ branch of economic performance. Based on the preceding arguments, the sixth hypothesis is that:

*H<sub>6</sub>: Ceteris paribus, the higher a firm’s profitability, the greater the quantity and quality of CSER disclosure in the firm’s annual report.*

#### ***Stability reinforcement perspective of signalling theory***

Another testable factor of signalling theory is market risk (beta). Market risk is measured by the covariance between the return of a risky asset (a firm’s share) and the market portfolio divided by the variance of the market portfolio (Brealey et al., 2008). Roberts (1992) contends that market risk can be viewed as a measure of a firm’s economic performance in that it is derived as a function of the level, growth rate and volatility of the firm’s earnings stream, its growth opportunities and other firm-specific variables, particularly its leverage ratio (Hong and Sarkar, 2007). Roberts (1992) further argues that there are two reasons why it can be hypothesised that firms achieving lower market risk on their equity (beta) are likely to undertake higher levels of socially and environmentally responsible activities. First, firms with lower beta have a more stable pattern of share-market returns. Such stability in share-market based economic performance will influence management’s decision to allow more steady discretionary spending on social and environmental activities, which through CSER should, in turn, enhance the firm’s image of being a responsible community contributor. Second, Roberts (1992) cites McGuire et al. (1988), who suggest that the disclosure of socially and environmentally responsible activities can

improve a firm's access to capital and increase employee morale and productivity. Consequently, a firm with relatively low market risk that is acting in a socially responsible way is more likely to be viewed by investors as managing both its economic and social risks well. For firms enjoying lower beta in equity markets, the incentive to provide higher CSER is tied to this strategy of conveying the image of a well-managed and responsible firm. McGuire et al. (1988) and Roberts (1992) conclude that firms with low market risk tend to provide CSER information to shareholders as positively reinforcing information that the market uses in establishing firm value. This theoretical perspective can be referred to as the 'stability reinforcement signalling' branch of economic performance. Based on this argument, the seventh hypothesis is generated as:

*H<sub>7</sub>: Ceteris paribus, the lower a firm's market risk, the greater the quantity and quality of CSER disclosure in the firm's annual report.*

A recent broader finding by Yusoff et al. (2006) does not dispute Roberts (1992) and the arguments to develop *H<sub>7</sub>*, but could suggest a confounding effect. Yusoff et al. (2006) find from interviews with corporate managers in Malaysia that higher levels of environmental expenditure and operating costs, and disclosures thereof, are not motivated by expectations of achieving increases in shareholder value. Nevertheless, there is no apparent reason for this hypothesis not to be supported in the context of Chinese companies listed in Hong Kong. The arguments by McGuire et al. (1988) and Roberts (1992), that greater stability of a firm's economic performance (i.e., lower beta) allows steadier discretionary spending on social and environmental activities, would be expected to equally apply to Chinese companies. Whether this translates into the management of Chinese companies providing greater CSER disclosures to gain favour with stakeholders such as international investors, suppliers and employees is a matter to be tested in *H<sub>7</sub>*.

A summary of hypotheses examining the relationship between factors developed on socio-political and economic-based theories and the quantity and quality of CSER disclosure is presented in Table 1.

**Table 1. Summary of hypotheses**

Hypothesis	Theory	Supportive Literature
H <sub>1</sub> : <i>Ceteris paribus</i> , the greater a firm's reliance on debtholder finance, the higher the quantity and quality of CSER disclosure in the firm's annual report.	Debtholder power perspective of stakeholder theory in socio-political theories	Ullmann (1985); Malone et al. (1993); Wallace and Naser (1995); Roberts (1992)
H <sub>2</sub> : <i>Ceteris paribus</i> , the existence of active strategic posturing by reporting charitable donations during the year is positively related the quantity and quality of CSER disclosure in the firm's annual report.	Strategic posture perspective of legitimacy theory in socio-political theories	Ullmann (1985); Navarro (1988); Roberts (1992); Gibson and Guthrie (1995)
H <sub>3</sub> : <i>Ceteris paribus</i> , the larger the firm size, the greater the quantity and quality of CSER disclosure in the firm's annual report.	Political costs perspective of legitimacy theory in socio-political theories	Belkaoui and Karpik (1989); Cormier and Magnan (2003); Patten and Trompeter (2003)
H <sub>4</sub> : <i>Ceteris paribus</i> , the larger the print media attention specific to a firm's CSER during a year, the higher the quantity and quality of CSER disclosure in the firm's annual report.	Media attention perspective of legitimacy theory in socio-political theories	Brown and Deegan (1998); Neu et al. (1998); Deegan et al. (2000)
H <sub>5</sub> : <i>Ceteris paribus</i> , the Songhua River pollution spill incident significantly increased the quantity and quality of CSER disclosure in the firms' annual reports.	Paroxysmic incident response perspective of legitimacy theory in socio-political theories	Patten (1992); Li et al. (1997); Hutchings and Taylor (2000); Cunningham and Gadenne (2003)
H <sub>6</sub> : <i>Ceteris paribus</i> , the higher a firm's profitability, the greater the quantity and quality of CSER disclosure in the firm's annual report.	Profitability success reinforcement perspective of signalling theory in economic-based theories	Ullmann (1985); Singhvi and Desai (1971); Lang and Lundholm (1993); Wallace et al. (1994); Wallace and Naser (1995)
H <sub>7</sub> : <i>Ceteris paribus</i> , the lower a firm's market risk, the greater the quantity and quality of CSER disclosure in the firm's annual report.	Stability reinforcement perspective of signalling theory in economic-based theories	McGuire et al. (1988); Roberts (1992)

## Research Methodology

### Model and Variable Measurement

The multi-perspective model of determinants of CSER comprises debtholder power (proxied by the firm's leverage debt-equity ratio), strategic posture (proxied by the existence of charitable donations by the firm), political costs (indicated by the firm's market capitalization), media attention (indicated by relevant publicity appearing in the print media), a paroxysmic incident response (indicated by the response post the Songhua River pollution spill), financial success reinforcement (proxied by the firm's profit margin) and financial stability reinforcement (proxied by the firm's systematic risk). The model is given in the following equation:

$$\begin{aligned} \text{CSERD}_{i,t} = & \alpha + \sum_1 \beta(\text{Debtholder Power})_{i,t} + \sum_2 \beta(\text{Strategic Posture})_{i,t} \\ & + \sum_3 \beta(\text{Political Costs})_{i,t} + \sum_4 \beta(\text{Media Attention})_{i,t} + \sum_5 \beta(\text{Incident Response})_{i,t} \\ & + \sum_6 \beta(\text{Profitability})_{i,t} + \sum_7 \beta(\text{Stability})_{i,t} + \sum_8 \beta(\text{Control})_{i,t} + \varepsilon_{i,t} \end{aligned}$$

These independent variables are modelled with the dependent variables of quantitative, qualitative, and weighted-qualitative measures of CSER disclosure. The model can test the seven hypotheses by using three models as stated in the following equations:

$$\begin{aligned} \text{QTYSCORE}_{i,t} = & \alpha + \beta_1 \text{LEVERAGE}_{i,t} + \beta_2 \text{DONATION}_{i,t} + \beta_3 \text{MCAP}_{i,t} \\ & + \beta_4 \text{MEDIA}_{i,t} + \beta_5 \text{SONGHUA}_{i,t} + \beta_6 \text{PMARGIN}_{i,t} + \beta_7 \text{BETA}_{i,t} + \beta_8 \text{FSIZE}_{i,t} + \varepsilon_{i,t} \quad \dots (1) \end{aligned}$$

$$\begin{aligned} \text{QLYSCORE}_{i,t} = & \alpha + \beta_1 \text{LEVERAGE}_{i,t} + \beta_2 \text{DONATION}_{i,t} + \beta_3 \text{MCAP}_{i,t} \\ & + \beta_4 \text{MEDIA}_{i,t} + \beta_5 \text{SONGHUA}_{i,t} + \beta_6 \text{PMARGIN}_{i,t} + \beta_7 \text{BETA}_{i,t} + \beta_8 \text{FSIZE}_{i,t} + \varepsilon_{i,t} \quad \dots (2) \end{aligned}$$

$$\begin{aligned} \text{WQLYSCORE}_{i,t} = & \alpha + \beta_1 \text{LEVERAGE}_{i,t} + \beta_2 \text{DONATION}_{i,t} + \beta_3 \text{MCAP}_{i,t} \\ & + \beta_4 \text{MEDIA}_{i,t} + \beta_5 \text{SONGHUA}_{i,t} + \beta_6 \text{PMARGIN}_{i,t} + \beta_7 \text{BETA}_{i,t} + \beta_8 \text{FSIZE}_{i,t} + \varepsilon_{i,t} \quad \dots (3) \end{aligned}$$

The definitions and measurements for these variables are depicted in Table 2.

**Table 2. Definition and measurement variables**

Variable Acronym	Definition	Expected Sign to DVs	Measurement	Sources
<u>Dependent Variables:</u>				
<i>QTYSCORE</i>	The quantitative score of CSER disclosure.	N/A	<p>Each annual report is examined and the items in a predetermined CSER item list are scored (see Appendix A):                      If the item is absent, it receives a quantity score of 0.                      If the item is present, it receives score of 1.</p> $QTYSCORE = \frac{\sum d_i}{\sum Max(d_i)} \times 100\%$ <p>where,  <math>\sum d_i</math> = total items of CSER disclosure found in the annual report,  <math>\sum Max(d_i)</math> = maximum number of predetermined CSER disclosure items</p>	Annual report
<i>QLYSCORE</i>	The qualitative score of CSER disclosure.	N/A	<p>If an item is present, it is further scored on an ordinal scale based on the perceived quality of the disclosures with scores ranging from poor (1) to excellent (5) (see Appendix A and B).</p> $QLYSCORE = \frac{\sum ds_i}{\sum Max(ds_i)} \times 100\%$ <p>where,  <math>\sum ds_i</math> = total quality score for items of CSER disclosed,  <math>\sum Max(ds_i)</math> = maximum quality score of predetermined CSER disclosure items</p>	Annual report

**Table 2 (continued)**

Variable Acronym	Definition	Expected Sign to DVs	Measurement	Sources
<u>Dependent Variable:</u>				
<i>WQLYSCORE</i>	The subjective weighted-qualitative score of CSER disclosure.	N/A	<p>The weights used in relation to each item of the index are on an ordinal scale of low importance (1), medium importance (2), and high importance (3) (see Appendix A and B).</p> $WQLYSCORE = \frac{\sum dsw_i}{\sum Max(dsw_i)} \times 100\%$ <p>where,  <math>\sum dsw_i</math> = total weighted-quality score for items of CSER disclosed,  <math>\sum Max(dsw_i)</math> = maximum weighted-quality score of predetermined CSER disclosure items</p>	Annual report
<u>Independent Variable:</u>				
<i>LEVERAGE</i>	Debt-equity ratio	+	LEVERAGE = (Long Term Debt + Short Term Debt & Current Portion of Long Term Debt) / Common Equity	Osiris
<i>DONATION</i>	Charitable donation or contribution	+	Coded 1 if the firm donates during 2005 and 2006, otherwise 0.	Annual report & website
<i>MCAP</i>	Market capitalization	+	Natural logarithm of total market capitalization	Osiris
<i>MEDIA</i>	Media attention on the firm	+	The number of articles contain both positive and negative comments on the particular sampled firm's corporate social or environmental activities, events, programs, etc.	China InfoBank
<i>SONGHUA</i>	Pre- and post-Songhua River pollution spill incident	+	Coded 1 for post-Songhua River pollution spill incident in 2006, otherwise 0.	

**Table 2 (continued)**

Variable Acronym	Definition	Expected Sign to DVs	Measurement	Sources
<i>PMARGIN</i>	Profit margin	+	PMARGIN = Profit from ordinary activities after income tax / Revenues	Osiris
<i>BETA</i>	Systematic risk	-	The covariance between returns on a risky asset (firm's shares) and share-market portfolio, dividend by the variance of the share-market portfolio	Osiris
<u>Conrol</u> <u>Variable:</u>				
<i>FSIZE</i>	Total assets	+	Natural logarithm of book value of total assets at the end of year	Annual report

## Sampling

The sample is drawn from the H-Share and Red-chip companies listed on the Hong Kong Stock Exchange (HKSE) in 2005 and 2006. The annual reports for both years of H-Share and Red-chip companies were progressively searched for evidence of any CSER disclosures, working through these companies in order of size (capitalization). Beyond the largest 56 companies, the incidence of CSER disclosure by smaller H-Share and Red-chip companies was found to be almost completely absent in annual reports. Hence, the sample is limited to larger companies that have some incidence of reporting of social and/or environmental responsibility information in their annual reports. This study, therefore, is representative of only those Chinese companies whose management is taking some leadership in the fledgling practice of voluntary CSER disclosures by Chinese-controlled listed companies. Among these 56 companies only 18 and 21 have separate CSER sections in their 2005 and 2006 annual reports respectively (i.e. under headings of Corporate Social Responsibility, Health, Safety and Environment, Corporate Culture or Corporate Citizenship). The remaining companies present relevant items of CSER disclosure in non-dedicated sections of the annual report (e.g., Chairman's Statement, Directors' Report and Management Discussion and Analysis).<sup>2</sup>

## Empirical Results

### Descriptive statistics

The descriptive statistics in Table 3 provide a profile of dependent variables across a variety of quantitative, qualitative, and weighted-qualitative measurements, and independent and control variables. In terms of dependent variables, the mean of the quantitative score (QTYSCORE) is 26.88 per cent, with a range of 5.56 per cent to 100 per cent. The mean of the qualitative score (QLYSCORE) is only 17.89 per cent, with a range of 1.11 per cent to 86.67 per cent. The average of weighted quality of CSER disclosure (WQLYSCORE) is with a score of 17.37 per cent from a maximum possible score of 180. This low and diverse incidence of disclosure indicates that the practice of providing voluntary CSER information in annual reports by large Chinese-owned or controlled companies is at the infancy stage.

**Table 3. Descriptive statistics on variables**

Sample:	2005-2006		Observations:		112
Variable	Mean	Median	Min	Max	Std dev
QTYSCORE	26.88	16.67	5.56	100.00	26.48
QLYSCORE	17.89	8.89	1.11	86.67	20.21
WQLYSCORE	17.37	7.22	1.11	87.22	20.37
LEVERAGE	0.46	0.18	0.00	9.68	1.03
BETA	1.26	1.29	0.39	2.05	0.37
PMARGIN	0.30	0.20	-0.09	2.74	0.37
MCAP	16.21	16.12	13.02	21.02	1.51
MEDIA	30.65	15.00	0.00	412.00	57.78
FSIZE	17.29	17.03	14.81	20.65	1.28

<sup>2</sup> Annual report analysis is based on the firm's English version annual report.

In relation to the independent variables, first, the mean of the debt-equity ratio (LEVERAGE) is 46 per cent, with a large variation from zero to 968 per cent. It reveals that some companies survived on debt heavily, and brings the risk that those companies are liable to find that they cannot pay their debts when hard times come. Second, the average market risk (BETA) is 1.26, with a range between 0.39 and 2.05, and indicates an unstable pattern of stock market returns. This unstable pattern may lessen the extent and quality of CSER disclosures. Third, the mean of the profit margin (PMARGIN) is 30 per cent, with a large variation between -9 and 274 per cent. This reveals that most of the sampled firms operated as profitable ones even in the downturn of the equity market during 2005 and 2006 in China. Fourth, the mean of market capitalization (MCAP) is 16.21, and with a relatively small variation from 13.02 to 21.02. This is because the sampled firms are the large ones listed on the HKSE. Fifth, the print media attention (MEDIA) given to CSER-related articles where specific firms are named, is quite high. The average CSER-related attention drawn to specific firms in the sample is 30.65 articles, with a range of 0 to 412. The print media journalists report predominantly positive CSER news in the context of activities and programs of specific H-share and Red-chip firms. Finally, the mean of the control variable, firm size (FSIZE) is 17.29, with a range between 14.81 and 20.65, and is consistent with the market capitalization of the sampled firms.

#### **Multivariate analysis and hypotheses testing**

The panel regression models (see Equations (1), (2) and (3)) were estimated consisting of variables for debtholder power, strategic posture, political costs, media attention, paroxysmic incident response, profitability and stability for the measures of the three dependent variables in terms of quantity, quality and weighted quality for CSER disclosure.

**Table 4. Correlation matrix for independent variables**

	FSIZE	MCAP	MEDIA	LEVERAGE	PMARGIN	BETA	DONATION
FSIZE	1.0000						
MCAP	0.7092**	1.0000					
MEDIA	0.5095**	0.3338**	1.0000				
LEVERAGE	0.1113	-0.1473	-0.0087	1.0000			
PMARGIN	-0.0194	0.2427**	-0.1198	-0.2059*	1.0000		
BETA	-0.0211	-0.0892	-0.0455	0.1553	-0.1497	1.0000	
DONATION	0.5074**	0.4154**	0.0079	0.1767	-0.0877	-0.0178	1.0000
SONGHUA	0.0849	0.1834	-0.0650	0.0601	-0.0004	-0.0806	0.0357

Note: \* significant at the 5% level; \*\* significant at the 1% level

The possible presence of multicollinearity was tested for. Gujarati (2003) argues that correlations between independent variables should not be deemed harmful for multivariate analysis unless they exceed 0.8. As shown in Table 4, there are no correlations between independent variables that reach this level. However, a certain degree of multicollinearity can still exist even when none of the bivariate correlation coefficients is very large. The reason is that one independent variable may be a linear function of a set of the independent variables (Gujarati, 2003). Hence, multicollinearity is also tested for using the Variance Inflation Factor (VIF). The result, reported in Table 5, shows that the largest VIF is 3.19 and that the VIFs of all

other independent variables are below 2.72. Thus, there is no serious multicollinearity problem present in the regression models.<sup>3</sup>

**Table 5. Collinearity diagnostics test for independent variables**

Variable	VIF	SQRT VIF	Tolerance	R-Squared
MCAP	2.72	1.65	0.3673	0.6327
LEVERAGE	1.21	1.10	0.8231	0.1769
MEDIA	1.62	1.27	0.6160	0.3840
DONATION	1.64	1.28	0.6093	0.3907
PMARGIN	1.25	1.12	0.7990	0.2010
BETA	1.06	1.03	0.9451	0.0549
FSIZE	3.19	1.79	0.3133	0.6867
SONGHUA	1.09	1.05	0.9142	0.0858
Mean VIF	1.72			

The three equations given above are estimated using ordinary least squares (OLS) panel regressions. Table 6 provides the results to test the seven hypotheses. It reveals adjusted  $R^2$ s of 0.3649, 0.4062 and 0.3913 for the panel regressions using QTYSCORE, QLYSCORE and WQLYSCORE as the dependent variables, respectively. The  $F$ -statistics of 8.9726, 10.49 and 9.9885, and the  $F$ -significances of zero for each of the regression models indicate that statistically significant components of the variation in dependent variables QTYSCORE, QLYSCORE and WQLYSCORE are explained by variation in the set of independent variables. The discussion that follows examines the results in Table 6 in terms of the seven hypotheses established earlier.

The first hypothesis ( $H_1$ ) established from stakeholder theory, suggests that a high level of firm's leverage is associated with a higher level of quantitative and qualitative CSER disclosure in firms' annual report. This is because high leverage firms have greater needs to satisfy long-term creditors by means of disclosing additional information (Camfferman and Cooke, 2002). However, the results in Table 6 are unexpected ( $p < 0.01$ ,  $t = -3.89$  in Equation (1);  $p < 0.01$ ,  $t = -5.61$  in Equation (2);  $p < 0.01$ ,  $t = -5.26$  in Equation (3)), and show significant relationships between LEVERAGE and all three dependent variables. These relationships are opposite to the directions hypothesized. Not only is  $H_1$  rejected, but this evidence suggests a Kuhnian anomaly is present for this debtholder power perspective.

In fact, if high leverage firms disclose more information than low leverage firms, greater costs of such information disclosure would result (Jensen and Meckling, 1976). The Chinese equity market was in bearish downturn during 2005 and 2006, and most firms encountered profit decreases. It is perhaps no surprise that the firms with high debts reduce the extent of CSER disclosure in order to minimize costs and reserve solvency for their long-term creditors. The information is more likely to be shared between high leverage firms and their creditors through private (internal) channels rather than via public disclosures (Zarzeski, 1996).

<sup>3</sup> Gujarati (2003) suggests that there is no evidence of multicollinearity unless the VIF of a variable exceeds 10. All values used in this study were well below this critical level.

**Table 6. Panel regression results**

Variables:	Expected sign	Equation (1) <sup>a</sup>		Equation (2) <sup>b</sup>		Equation (3) <sup>c</sup>	
		Coefficient	<i>t</i> -statistic	Coefficient	<i>t</i> -statistic	Coefficient	<i>t</i> -statistic
<i>Constant</i>	N/A	-93.40	-11.45***	-93.86	-9.12***	-99.90	-10.19***
LEVERAGE <sup>d</sup>	+	-1.09	-3.89***	-1.51	-5.61***	-1.52	-5.26***
DONATION <sup>e</sup>	+	17.57	12.63***	13.59	6.56***	12.07	5.96***
MCAP <sup>f</sup>	+	5.30	227.85***	3.92	70.74***	4.10	107.74***
MEDIA <sup>g</sup>	+	0.03	1.15	-0.01	-1.23	-0.01	-0.80
SONGHUA <sup>h</sup>	+	1.15	1.96**	1.63	7.05***	1.39	4.92***
PMARGIN <sup>i</sup>	+	-4.26	-2.19**	-2.69	-2.29**	-2.45	-1.97**
BETA <sup>j</sup>	-	-6.52	-1.00	-4.17	-1.02	-4.65	-1.08
FSIZE <sup>k</sup>	N/A	1.97	12.49***	2.77	19.35***	2.99	27.12***
Adjusted <i>R</i> <sup>2</sup>		0.3649		0.4062		0.3913	
<i>F</i> -Statistics		8.9726		10.4900		9.9885	
Cross-Section		56		56		56	
Observation		112		112		112	

Equations:

$$QTYSCORE_{i,t} = \alpha + \beta_1 LEVERAGE_{i,t} + \beta_2 DONATION_{i,t} + \beta_3 MCAP_{i,t} + \beta_4 MEDIA_{i,t} + \beta_5 SONGHUA_{i,t} + \beta_6 PMARGIN_{i,t} + \beta_7 BETA_{i,t} + \beta_8 FSIZE_{i,t} + \varepsilon_{i,t} \quad \dots (1)$$

$$QLYSCORE_{i,t} = \alpha + \beta_1 LEVERAGE_{i,t} + \beta_2 DONATION_{i,t} + \beta_3 MCAP_{i,t} + \beta_4 MEDIA_{i,t} + \beta_5 SONGHUA_{i,t} + \beta_6 PMARGIN_{i,t} + \beta_7 BETA_{i,t} + \beta_8 FSIZE_{i,t} + \varepsilon_{i,t} \quad \dots (2)$$

$$WQLYSCORE_{i,t} = \alpha + \beta_1 LEVERAGE_{i,t} + \beta_2 DONATION_{i,t} + \beta_3 MCAP_{i,t} + \beta_4 MEDIA_{i,t} + \beta_5 SONGHUA_{i,t} + \beta_6 PMARGIN_{i,t} + \beta_7 BETA_{i,t} + \beta_8 FSIZE_{i,t} + \varepsilon_{i,t} \quad \dots (3)$$

Note: <sup>a</sup> The quantitative score of CSER disclosure:  $QTYSCORE = \frac{\sum d_i}{\sum Max(d_i)} \times 100\%$ ; <sup>b</sup> The qualitative score of CSER disclosure:  $QLYSCORE = \frac{\sum ds_i}{\sum Max(ds_i)} \times 100\%$ ; <sup>c</sup>

The subjective weighted-qualitative score of CSER disclosure:  $WQLYSCORE = \frac{\sum dsw_i}{\sum Max(dsw_i)} \times 100\%$ ; <sup>d</sup> Debt-equity ratio; <sup>e</sup> Charitable donation or contribution; <sup>f</sup> Natural

logarithm of market capitalization; <sup>g</sup> The number of print articles contain both positive and negative comments on the particular sampled firm's corporate social or environmental activities, events, programs, etc.; <sup>h</sup> Pre- and post-Songhua River pollution spill incident; <sup>i</sup> Profit margin; <sup>j</sup> Systematic risk, the covariance between returns on a risky asset (firm's shares) and share-market portfolio, divided by the variance of share-market portfolio:  $\beta = \sigma_{i,m} / \sigma_m^2$ ; <sup>k</sup> Natural logarithm of book value of total assets at the end of year; \* Significant at the 10% level; \*\* Significant at the 5% level; \*\*\* Significant at the 1% level.

The second hypothesis ( $H_2$ ) states the existence of an active corporate strategic posture, as proxied by the reporting of corporate charitable donations during the year, is related to higher voluntary CSER disclosure. The results in Table 6 support this hypothesis ( $p < 0.01$  in all equations). Thus,  $H_2$  is supported. Table 6 provides results consistent with the Western-based findings of Roberts (1992), who correlates charity funding with the level of CSER disclosure, citing Ullmann's (1985) argument of strategic posturing to manage potential demands by stakeholders for social responsibility. However, this concept of strategic posturing to manage stakeholders may not be an adequate behavioural explanation for Chinese firms. As indicated earlier, the so-called 'Chinese model of philanthropy' is centred on the concept of "clan associations ... in a culture that emphasizes face" (Acs and Dana, 2001, p. 72). In this culture, corporate management would be committing their company to philanthropic involvement in mainly local community projects more for their personal prestige and leadership standing in their 'clan' than for their company.

The third hypothesis ( $H_3$ ) is based on the Western-developed legitimacy theory perspective that larger companies will provide greater corporate disclosure because they are under greater public scrutiny than are smaller companies, and thus have a greater incentive to mitigate political costs and manage their 'social contract' (Watts and Zimmerman, 1986). The results in Table 6 indicate that the companies' market capitalization (MCAP) are indeed positively correlated ( $p < 0.01$  in all equations) to greater quantitative, qualitative and weighted-qualitative scores of voluntary CSER disclosure. Thus,  $H_3$  is supported. These results are consistent with the findings of Belkaoui and Karpik (1989), Patten (1991), Cormier and Magnan (2003), Patten and Trompeter (2003), and Haniffa and Cooke (2005).

The inference is that large Chinese companies (mostly former SOEs that are still 65 per cent owned by government on average) are motivated in a similar way to Western-owned companies to disclose more CSER information because of potential political costs. The argument that the management of these Chinese government-linked companies would not be concerned about potential threats of penalties or other regulatory intrusion from regulatory bodies in China, and therefore does not need to mitigate these potential political costs through higher CSER disclosures, is not supported by the results in Table 6. Further, on the political costs argument of Watts and Zimmerman (1978) that larger firms are more likely to be subject to the costs of consumer, employee, or public scrutiny, the results indicate that there are signs of larger companies using higher quantity and quality of CSER disclosure to help manage potential or actual consumer, employee or public reactions regarding their corporate social and environmental activities, programs and performance.

The fourth hypothesis ( $H_4$ ) is based on the Western-developed perspective that companies respond to higher print media attention (MEDIA) by increasing their relevant voluntary disclosure. Neu et al. (1998) show that when the media sets a clear social and environmental agenda, legitimacy theory indicates that firms respond with increases in their CSER disclosures. The results in Table 6 do not support this hypothesis in all equations ( $t = 1.15$  in Equation (1);  $t = -1.23$  in Equation (2);  $t = -0.80$  in Equation (3)). Thus,  $H_4$  is rejected. As suggested earlier in this study, the context of media agenda-setting in China is such that government bodies continue to keep tight control of newspapers and business enterprises can 'manage' journalists. In

these circumstances, media agenda setting in China does not apply in a way that leads corporations to respond by increasing their CSER.

The fifth hypothesis ( $H_5$ ) is also based on the legitimacy theory perspective and states that the effect of the Songhua River pollution spill incident works as an accelerator to boost the extent and quality of CSER disclosure in the annual reports of Chinese listed companies. The results in Table 6 indicate positive correlations between SONGHUA and dependent variables ( $p < 0.05$ ,  $t = 1.96$  in Equation (1);  $p < 0.01$ ,  $t = 7.05$  in Equation (2);  $p < 0.01$ ,  $t = 4.92$  in Equation (3)). Thus,  $H_5$  is supported. The inference is that the Chinese central government realized that corporate social responsibility (CSR) has become more important in the 21<sup>st</sup> century and it makes business sense to incorporate environmental degradation into the accounting of traditional GDP to work out a more realistic picture of the health of the economy—the Green GDP (Zhang, 2007).

Further, PRC President Hu Jintao and Premier Wen Jiabao proposed to construct a ‘harmonious society’ (*hexie shehui*) through an approach of ‘scientific outlook on development’ (*kexue fazhanguan*), which encourages Chinese businesses to emphasize sustainable development and places the interests of people first in the front of short-term profits (Levine, 2008). The central government also insists that environmental protection should coincide with economic development, and transform from current reliance on command and control regulations to a policy based on market-oriented policy instruments (Zhang, 2007). Finally, a citation of an ancient Chinese proverb—‘better late than never’ (*wangyang buluo*)<sup>4</sup> probably best described the effect of Songhua River spill: a shepherd woke up one morning and found that a sheep missing due to a broken hole in the fenced-in pen. A friend of the shepherd suggested him to fix the hole immediately and prevent future losses. But the shepherd didn’t follow and thought there was no point in fixing because the sheep was already gone. Another day passed, and another sheep lost. The shepherd then realized that he must fix the fence. Expanding to the Songhua River incident, the policy-makers and corporate players (as ‘the shepherd’) should realize a combination of CSR programs and voluntary CSER disclosure (as ‘the fence’) safeguard the core assets of a company and enhance long-term sustainable growth in China (Levine, 2008).

The sixth hypothesis ( $H_6$ ) states that the profit margin of a firm is positively correlated with the extent and quality of CSER disclosure. The results in Table 6 reveal significant relationships, but are at odds with expected signs ( $p < 0.05$ ,  $t = -2.19$  in Equation (1);  $p < 0.05$ ,  $t = -2.29$  in Equation (2);  $p < 0.05$ ,  $t = -1.97$  in Equation (3)) and consistent with the findings by Wallace and Naser (1995) and Camfferman and Cooke (2002), thus  $H_6$  is rejected. This finding represents another Kuhnian anomaly is present. The profitability reinforcement perspective appears to be ineffective as a way of explaining CSER disclosure.

In the context of China, the finding suggests: (1) because of the high rate of saving and the very limited range of investment instruments available in China, most minority shareholders are often regarded as ‘free riders’ in the securities market. From the beginning, the minority shareholders exhibited a highly speculative tendency with very short investment horizons (Tam, 2002). They are satisfied with high profits and

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<sup>4</sup> Levine (2008) also cited this proverb as a useful way of viewing CSR in China.

so don't wish (or don't care) additional information disclosure (Wallace and Naser, 1995), and (2) because of bear equity market during 2005 and 2006 most Chinese listed firms encountered profitability reduction. In this case, economic demands were over than social demands (Ullmann, 1985), the managers therefore may reduce CSER disclosure in order to save expenses for social and environmental programs to meet economic demands by investors.

The seventh hypothesis ( $H_7$ ) states that firms with sustainable economic performance, as reflected in a more stable pattern of share-market returns (i.e., lower BETA), will have higher CSER disclosure. However, the results in Table 6 don't show such correlations in all equations ( $t = -1.00$  in Equation (1);  $t = -1.02$  in Equation (2);  $t = -1.08$  in Equation (3)), thus  $H_7$  is rejected. These results are inconsistent with the Western-country finding of Roberts (1992). Unlike the argument by Ullmann's 1985 stakeholder model and findings by Robert (1992), Chinese firms with greater stability of economic performance lack steadier discretionary CSER disclosures to meet social demands. In contrast, the managers only focus on short-term economic demands to gain the favour of stakeholders, such as shareholders, debtholders and employees.

## **Conclusions and Implications**

The purpose of this study was to address the issue of whether CSER disclosure practice can be explained by Western-developed socio-political and economic-based theoretical perspectives. Or do some of these perspectives appear to be unsupported or anomalous when tested using Chinese contextual data?

The descriptive statistics suggested that voluntary CSER disclosure in annual reports of Chinese companies listed in Hong Kong is quite limited and patchy. The evidence indicates that government encouragement of corporate boards and management to voluntarily disclose a greater range and quality of CSER information is not effectively occurring for China. The implication is that government and its agencies in China will need to prescribe detailed CSER disclosure guidelines and make it mandatory for listed companies because the soft approach of encouraging voluntary CSER disclosure had not been effective.

Turning to the question of whether aspects of Western-developed theories are transferable as determinants of voluntary CSER disclosure by H-share and Red-chip companies, the results of hypotheses tests are summarized in Table 7.

**Table 7. Summary of regression results: explanatory power**

Theory Factor	Stakeholder Debtholder power	Legitimacy Strategic posture	Legitimacy Political costs	Legitimacy Media attention	Legitimacy Paroxysmic incident response	Signalling Profitability	Signalling Stability
Hypothesis Variable	$H_1$ Leverage	$H_2$ Donation	$H_3$ Market capitalization	$H_4$ Media attention	$H_5$ Songhua	$H_6$ Profit margin	$H_7$ Beta
QTYSCORE	√?	√	√	X	√	√?	X
QLYSCORE	√?	√	√	X	√	√?	X
WLYSCORE	√?	√	√	X	√	√?	X

Note: √? = Significant but unexpected sign; √ = Significant and expected sign; X = Not supported

The results summarized in Table 7 reveal counter-directional relationships (i.e., anomalies in the theory) for debtholder power and success reinforcement signalling. Lack of support (i.e., non-significant relationships) is found for media attention and stability reinforcement signalling, while support is found for the strategic posturing, incident response and political costs perspectives.

These findings have implications for the development of theoretical perspectives in order to understand the emerging practice of CSER in China. In terms of the strength of the respective theoretical perspectives, there are two anomalous theories that are found to provide misleading predictions. They are the power of debtholders as one of the stakeholders to demand greater CSER disclosure from management, and the signalling of management of the ‘quality’ of their firm through the reinforcement of good profit results with greater CSER disclosure. It is concluded that if the reporting environment remains largely unregulated in China and Hong Kong only very large companies (because of their concern about political costs) or a paroxysmic incident (because of a wide-spread surge in public dissatisfaction that reduces firms’ legitimacy), or strategic posturing (where top managers can use company donations to ‘buy’ prestige and leadership positions) can drive improvements in the fledgling practice of CSER disclosure by Chinese-controlled companies. This is not a strong base to achieve a wider spread CSER practices in China in the future.

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**Appendix A. CSER disclosure scoring worksheet**

Weight	Disclosure Description	Quantitative Score (0 or 1)	Qualitative Score (0-5)	Weighted Qualitative Score (weight x qualitative score)
	<u>Overview of CSR or HSE:</u>			
3	Statement of objectives			
2	Descriptive report/general review			
1	Summary facts & figures			
	Sub total:			
	<u>Environmental Disclosure:</u>			
3	Environment policies/objectives			
2	Environment protection programs/activities			
1	Summary of achievement/results			
	Sub total:			
	<u>Employment-issue Disclosure:</u>			
3	Safety policies/objectives			
2	Safety management programs/activities			
2	Safety education programs/activities			
1	Summary of achievement/results			
3	Health policies/objectives			
2	Health management programs/activities			
2	Health education programs/activities			
1	Summary of achievement/results			
2	Employee welfare			
	Sub total:			
	<u>Community Disclosure:</u>			
3	Community policies/objectives			
2	Community programs/activities			
1	Summary of charitable donations/results			
	Sub total:			
	<b>TOTAL DISCLOSURE:</b>	/18	/90	/180

### **Appendix B. Example of statement of objectives**

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<b>Ordinal Scale</b>	<b>Description</b>
5	Separate statement in section of CSR or HSE; which must include the following items: mission; goals; and performance targets in specific; concise; understandable; and realistic terminology. All items must have measurable/quantitative dimensions and a given time frame.
4	As per 5; but deficient in one significant item.
3	General and specific; some breadth; and including only some significant measurements.
2	Lacking any significant measurement.
1	Brief; incomplete.
0	Omitted.

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