

**UNDERSTANDING THE CHINESE GOVERNMENT'S INFLUENCE ON
CORPORATE ENVIRONMENTAL REPORTING AMONG CHINESE FIRMS**

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1. INTRODUCTION

Nowadays, in the face of a range of global environmental problems such as climate change, there is widespread agreement that changes must be made to combat or alleviate the ongoing pressures on the global environment which is clearly unsustainable (Deegan, 2009b). It is also generally accepted that business organisations must change the way they do business and change the traditional business goals and principles of pursuing maximum profit (Deegan, 2009b). With environmental protection growing to become part of most communities' expectations, increasing pressures are forcing corporate entities to provide more information about how business organizations have performed to protect the environment, and therefore, more and more corporate entities are now very keen on disclosing voluntary environmental information to show their concern about the environment. According to KPMG (KPMG, 2008a), environmental disclosure is now a common activity of corporations in developed countries.

In China, although it is claimed that the environmental crisis is extremely serious (Zissis & Bajoria, 2008), corporate environmental reporting (CER) in China lags far behind other countries. Before 2005, there were no Chinese corporate entities disclosing social and environmental information at all (KPMG, 2008a, 2008b). This situation is changing, CER in China increased rapidly in recent years (KPMG, 2011; Situ & Tilt, 2012), however, what is the motivation behind the increasing trend is not clear. While Chinese CER keeps increasing, we notice that the Chinese government has raised concerns that environmental problems are still damaging the economic development and may potentially threaten the nation's stability and the government's legitimacy. Since 2005, the government has put energy saving and being environmental friendly as a priority in the nation's development policy. "Green Reporting" is one of the major programs introduced (Wang, 2011). In particular, China's Measures for the Disclosure of Environmental Information (MDEI), which was adopted by the Chinese Ministry of Environmental Protection (MEP) in 2007, and has been seen as a new milestone of the Chinese government's environmental governance with initiatives on transparency, disclosure and participation (van den Burg, 2008; Bina, 2010). It can be seen that the Chinese government is likely a major driver behind the increasing trend of Chinese CER.

We also notice that, unlike other countries, especially more developed countries, the Chinese government influences corporate environmental reporting in China through its various roles, such as regulator (political power), shareholder (voting power) and creditor/customer/supplier (economic power). Therefore, in this article, we aim to understand Chinese governmental influence on Chinese CER. Two research questions are developed as follows:

Q1: Has the MDEI had an effect on CER in China?

Q2: Do State Owned Enterprises (SOEs) disclose more CER than non-SOEs?

Our results show that CER increased dramatically in 2008, after the introduction of MDEI and that SOEs perform much better than non-SOEs both before and after the MDEI was introduced. We therefore argue that CER in China is more policy-oriented compared to those in developed countries, but that the MDEI has had an impact on CER.

2. CHINESE GOVERNMENT'S GREEN POLICY AND MDEI

2.1 GREEN POLICY

Since 2005, the Chinese central government has been trying to shift China's economy to become more sustainable. A new political commitment of building up a "Harmonious Society" was introduced by China's chairman Hu Jintao at a Provincial Officer Symposium held in 2005. It states that the environment is a key element of a "Harmonious Society". Without sufficiently protection of the natural environment, not only is it that sustainable development cannot be realized, but it will also result in cause serious social problems (Hu, 2005). This commitment was translated into targets of Eleventh Five-year Plan (2006-2010), which maps strategies for the country's development. These targets required the reduction of energy consumption per unit of gross domestic product (GDP) by 20%, and reduced Sulphur Dioxide (SO₂) and Chemical Oxygen Demand (COD) emissions by 10% from 2005 levels by 2010 (Chinese Central Government, 2006). Later, at the Sixth National Environmental Protection Meeting (April 2006), Premier Wen Jiabao announced three new policies: (1) integrating environmental protection and economic decision-making on an equal footing; (2) further decoupling pollutant emissions from economic growth, and (3) applying a mix of instruments to resolve environmental problems (Bina, 2010). These policies reflect the Chinese central government's determination to transform the Chinese economy into one that embraces sustainable development. The commitment of building up a "Harmonious Society" was re-stated at the 17th National Communist Party of China (CPC) Congress, and was further developed as a "scientific view point of development". Hu (2007) pointed out that China's economic growth should incorporate energy saving and environmental protection. He also defined sustainable development in China as an approach to synchronise economic development with population, resources and environmental needs, to harmonize humans and nature, to develop a circular economy, and to build up an energy saving and environmental friendly country (Hu, 2007).

In order to translate the nation's drive to clean up the environment into policy risks for many listed polluters and for retail investors in those companies, MEP has put into effect a "green securities" plan aimed at making it harder for polluters to raise capital and encouraging listed companies to disclose more information about their environmental records. Pan Yue, deputy head of the agency, said greater disclosure would not only push companies to meet their environmental responsibilities but also help to protect investor interests (China.com.cn, 2008). Consequently, MEP released MDEI (Enacted in May 2008) in 2007 (Details of the MDEI is discussed in the next section). This has been further strengthened by a series of guidelines (see Table 1 below).

Table 1: List of the Guidelines

Name	Date of Issue
Guidelines of state-owned enterprises performing social responsibilities	29-Dec-07
Guidelines about enhancing supervision of listed companies' social responsibilities	25-Feb-08
Guidelines about China's industrial enterprises and industrial associations' social responsibilities	02-Apr-08
Guidelines on Environmental Information Disclosure by Companies Listed on the Shanghai Stock Exchange	14-May-08
Guidelines on Preparation of 'Corporate Report on Performance of Social Responsibilities	08-Jan-09

2.2 MDEI

In 2007, the MDEI was issued by the MEP. This symbolized the Chinese government's acceptance of environmental disclosure as a new environmental governance mechanism. MDEI has two environmental disclosing requirements; namely, government environmental disclosure and corporate environmental disclosure. By analysing the provision, it can be seen that the mandatory disclosure requirements only apply to government environmental disclosure (See Article 11). As for corporate environmental disclosure, enterprises are "encouraged" to "voluntarily disclose" the following environmental information (See Article 19):

1)	Their environmental protection guidelines, annual environmental protection objectives and achievements;
2)	Their total annual resource consumption;
3)	Information on their environmental protection investment and environmental technology development;
4)	Type, volume and content of pollutants discharged by them and where the pollutants are discharged into;
5)	Information on the construction and operation of their environmental protection facilities;
6)	Information on the handling and disposal of waste generated from their production, information on recycling and comprehensive use of waste products;
7)	Voluntary agreement entered into with environmental protection departments for environment improvement behaviour;
8)	Information on their performance of social responsibilities; and
9)	Other environmental information voluntarily disclosed by them.

According to Article 20, if an enterprise is included on the list of enterprises with severe pollution and whose emission of pollutants is greater than the national or local emission standard or whose total emission of pollutants is greater than the quota of total controlled emissions determined by local people's government, it "shall" disclose to the public the following information:

1)	Their name, address and legal representative;
2)	Name of major pollutants, method, content and total volume of emission, information on emission that has surpassed the standards or total emission that has surpassed the prescribed limits;
3)	Information on the construction and operation of their environmental protection facilities; and
4)	Emergency plans for sudden environmental pollution accidents.

It can be seen from these actions that the Chinese central government has realized the importance of public supervision, and has made up its mind to govern environmental protection in a more democratic way. China is now "on the road towards environmental information governance" (van den Burg, 2008).

And we should emphasize that MDEI doesn't mandatorily require companies to disclose environmental information. CER is still voluntary in China. However, in a highly centralized country, the Chinese government has significant influence on CER practices even without

any mandatory requirements (Situ & Tilt, 2012). Therefore, it is expected that there would be significantly more CER after the MDEI was released.

Limitation of this paper must be noticed. As discussed above, a series of guidelines and regulations came out around 2008; the increase of Chinese CER is possible owing to the combination of guidelines and regulations. However, it is meaningful to study the effect of the MDEI on Chinese CER, as the MDEI is the first regulation released by the Chinese government that mentions environmental reporting, and it has been viewed as a milestone of Chinese government's environmental governance. Moreover, the requirements of other guidelines are more likely to further strengthen the MDEI, therefore, this paper only examines the effect of the MDEI on Chinese CER.

3. LITERATURE REVIEW

“Around the world, corporate responsibility reporting has become a fundamental imperative for businesses” (KPMG, 2011, p6), with 95% of the top 250 global firms (G250) now reporting their corporate social and environmental activities (KPMG, 2011). However, interestingly, empirical studies have found that corporate environmental reporting in developed countries is predominantly voluntarily (Deegan, 2002; Dobbs & Van Staden, 2011), this is different from traditional financial accounting, which is highly regulated. Previous studies done on developed countries show that the motivations of disclosing corporate environmental reporting are varied (Deegan, 2002).

Some believe accountability is the reason why companies report voluntary environmental information (Hasnas, 1998), while others argue that there might be some economic advantages in pushing companies towards engaging in corporate environmental reporting (Friedman, 1962).

Some find evidence that, in order to reduce the threat of further development of regulations, companies would like to sign up to particular codes of conduct and disclose voluntary environmental information (Deegan & Blomquist, 2001). Others argue that companies put effort into winning environmental, social and sustainable reporting awards, which might positively implicated the good reputation of the company (Deegan & Carroll, 1993). Research also suggests that corporate environmental reporting is only a device that companies used to manage their particular stakeholder groups (Deegan, 2008). For example, as environmental management becomes part of lending institutions' risk management policy, companies are willing to disclose environmental performance information to desire lending institutions' borrowing requirements. Also, as ethical investment increase in the capital market, companies will provide environmental information to attract ethical investment funds.

Other studies reveal that companies disclose voluntary environmental information to legitimize their environmental activities or to deflect attention away from environmental concerns, rather than take on real accountability. For example, Deegan *et al.* (2000) examined the reaction of Australian companies to five major social and environmental incidents. They found that, following a major incident related to a social and environmental event, sample firms operating in the affected industries provided more environmental information in their annual reports than they did prior to the incidents. Recent research done on 122 New Zealand listed companies by Dobbs & Van Staden (2011) confirms this finding. In the research, survey questionnaires were sent to the selected companies, and the results indicate that firms

rate “to satisfy community concerns with operations” as the most important factor in their decision to report.

From the above discussion, we can see that, in developed countries which have a more liberal and developed capital market and where environmental awareness is relatively high, government’s intervention on CER is relatively low. The forces on companies to voluntarily disclose environmental information is pluralist. Most obviously, CER in developed countries has a societal focus.

However, a number of scholars claim that the unique characteristics of each country may result in differences in the corporate environmental disclosure activities seen in different countries (Mohammad, *et al.*, 2009; Gao, 2011). In particular, developing countries are at a different stage of economic development from developed countries. China is the largest developing country in the world, and China has a totally different institutional context (e.g. different cultural, political and economic systems), which is driven largely by state capitalism, as compared to places which have more liberal and developed capital markets. It is therefore expected that there will be more governmental influence on Chinese CER.

CER in China has, in fact, been studied since the early 1990s (Song & Li, 1992; Zhang, 1993; Xiao & Mi, 2004). In recent years, along with the increase of CER in China, the study of Chinese CER has attracted a growing number of Chinese scholars.

Some of the previous studies (Guo, 2005; Situ & Tilt, 2012) show that, compared to developed countries, there is more governmental influence on Chinese CER. For example, Situ & Tilt (2012) found that whether or not a firm is state-owned is a major determinant of Chinese CER - being a state-owned company increases the amount of environmental disclosure significantly. However, their study on the top 20 Chinese companies shows only very preliminary evidence. The aim of this study, therefore, is to further explore whether the government significantly influences Chinese CER.

4. THEORETICAL FRAMEWORK

Previous studies on developed countries (mainly under free-market capitalism) often use Legitimacy Theory, Stakeholder Theory and Institutional Theory, which are derived from Bourgeois Political Economy Theory, to explain CER. Bourgeois Political Economy Theory assumes that the world is pluralistic (Deegan, 2009a). Meanwhile, the core assumption of free-market capitalism is that the private sector, not the state, must be the primary engine of economic expansion if growth is to be strong and sustainable (Ian, 2010). Therefore, Bourgeois Political Economy Theory is appropriate in explaining CER under free-market capitalism. However, to the extent that the state is bureaucratic and uses the market to achieve its political goals, Bourgeois Political Economy Theory is limited, as the state is likely the most important stakeholder that company is perceived by as being legitimate. Therefore, this study borrows an economy theory, namely State Capitalism, in explaining how Chinese government use the combination of its political power and capitalist power to affect CER in China.

According to Ian (2010), State Capitalism is “a form of bureaucratically engineered capitalism particular to each government that practices it. It’s a system in which the state dominates markets primarily for political gain”. State capitalism tries to meld the power of the state with the power of capitalism. It depends on government to pick winners and promote

economic growth. It also uses capitalist tools such as listing state-owned companies on the stock market and embracing globalisation (The Economist, 2012). Instead of eliminating markets, governments try to harness them for their own purposes. Although a state capitalist economy is different from a command economy where the government directly exerts day-to-day control on economy, the government still has considerable direct influence over the economy and companies' strategy (Ian, 2010).

It is argued that a number of governments, particularly in the emerging world, are learning to use the market to promote political ends, and that China is one of the world's most influential practitioners of state capitalism (Ian, 2010). As the special report of The Economist (2012, p2) notes:

The Chinese state is the biggest shareholder in the country's 150 biggest companies and guides and goads thousands more. It shapes the overall market by managing its currency, directing money to favoured industries and working closely with Chinese companies abroad.

The special report of The Economist further argues that the Chinese Communist Party exercises a degree of control over the economy. It states that (The Economist, 2012, p6):

The party has cells in most big companies - in the private as well as the state-owned sector - complete with their own offices and files on employees. It controls the appointment of captains of industry and, in the SOEs, even corporate dogsbodies. It holds meetings that shadow formal board meetings and often trump their decisions, particularly on staff appointments. It often gets involved in business planning and works with management to control workers' pay...There are currently 17 prominent Chinese political leaders who have held senior positions in large SOEs. Conversely, 27 prominent business leaders are serving on the party's Central Committee.

As the government has cells in companies, it can influence the companies' decision making, and therefore is able to shape companies without regulation.

In this study, we argue that, even though China's economy is now moving towards more market orientated, companies' decision making is still largely driven by the Chinese government. As a part of corporate governance strategy, CER is therefore affected by the Chinese government.

This is consistent with the view of State Capitalism that, in a state capitalist economy, the government dominates the market, and tries to use capitalist tools to achieve their political aims. China is one of the largest state capitalist countries in the world. Therefore, in this study, State Capitalism will be drawn upon to examine the role of the State in China, and its influence on CER.

5. RESEARCH METHOD

5.1 SAMPLING

This paper focuses on firms listed on the Shanghai Stock Exchange, as all listing firms' reports are publicly accessible. Previous studies (Situ & Tilt, 2012) found that size is one of the determinants of CER in China, so to mitigate the size effect, this paper uses the SSE 180 as the sampling frame, as "it selects constituents with best representation through scientific and objective method. It is a benchmark index reflecting Shanghai market and serving as a performance benchmark for investment and a basis for financial innovation" and "it selects top ranking stocks within each industry based on number of constituents allocated" (China Securities Index Co., 2012b).

Panel data is a set of data “that follows a given sample of individuals over time, and thus provides multiple observations on each individual in the sample” (Cheng, 2003, p2). Shan (2009, p168) argues that “panel data frequently are useful in situations where the population can be divided into various groups or strata”. Therefore, in this study, panel data is used to test the first research question i.e. the Chinese government’s influences on Chinese CER. The term panel data in this study refers to the same companies for the period 2007 – 2009. In particular, this will help us understand if the MDEI has had any effect on CER among Chinese listed firms.

For research question 2, in order to examine whether SOEs perform better CER than non-SOEs, the SSE 180 companies are divided into two groups, SOE and non-SOE. In this study, SOE refers to central state-owned enterprises only. According to the CSI Central SOEs Index, a central state-owned enterprise is a company that is realistically controlled by the State-owned Assets Supervision and Administration Commission of State Council (SASAC) and the Ministry of Finance (China Securities Index Co., 2012a). All SSE 180 companies that are also in the list of CSI Central SOEs Index are grouped into SOEs, the rest comprises the group of non-SOEs. Then a total of 50 companies are randomly selected from SSE 180 by using stratified proportional random sampling.

5.2 CONTENT ANALYSIS

Content Analysis is defined as “an approach to the analysis of documents and texts that seeks to quantify content in terms of predetermined categories and in a systematic and replicable manner” (Bryman & Bell, 2007, p304). Royse (2008, p.256) summarizes the advantages of content analysis as follows:

- It is unobtrusive. The most important advantage for content analysis is that it can be virtually unobtrusive (Weber, 1985). Content analysis can be used reactively and non-reactively (Berg, 2004).
- It is generally inexpensive to conduct. Generally, the materials necessary for conducting content analysis are easily and inexpensively accessible (Berg, 2004).
- It allows the investigator to mine existing agency documents and databases.
- It can deal with large amounts of data.

Hence, content analysis is used in this study.

Both annual reports and stand-alone social responsibility reports of the observed companies are the data source for conducting Content Analysis, since Situ & Tilt (2012) found that more Chinese companies have started to use stand-alone social responsibility reports as the medium to report environmental information. Moreover, to avoid the ambiguity of translation, only Chinese reports are read.

The basic categories used in this study were obtained from the Global Reporting Initiative guideline 3.1 (G3.1) and the MDEI, but the content that has been disclosed by companies listed on the Shanghai Stock Exchange is also considered. The definitions of each theme are presented in Appendix A.

Coding rules were developed primarily based on prior studies, such as Situ & Tilt (2012) and Hossain *et al.* (2006). The final coding rules are presented in Appendix B.

5.3 MEASUREMENT OF VARIABLES

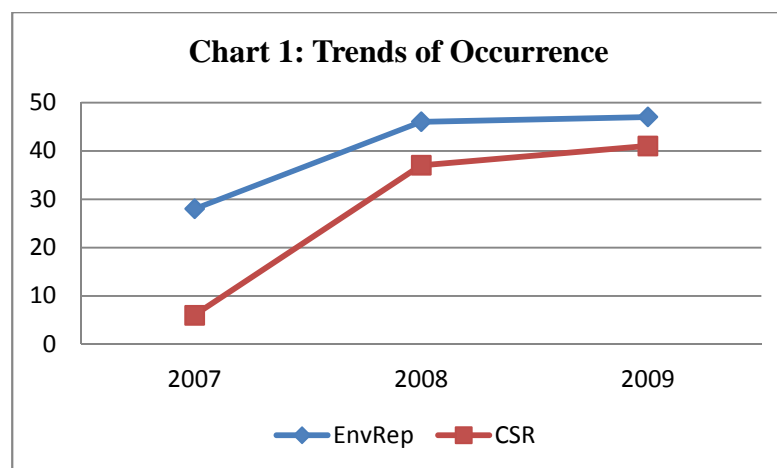
The unit of analysis in this study is words. Krippendorff (1980) argues recording units and context units should be separated. Recording units refer to the units that are to be counted in specific categories, while context units refer to those that are of concern to the process of describing the recording units. Therefore, in this study, sentences are used as context units to capture the environmental disclosure information, and numbers of words are chosen as the recording units to count the amount of environmental disclosures in given categories.

Previous studies on CER have used a score or index to measure disclosure, however, Nurhayati *et al.* (2006) state that ‘volume’ is more appropriate in developing countries as the extent of disclosure is low. Therefore, the number of words related to the environment found in the annual report and stand-alone social responsibility report provides the dependant variable in this study.

6. RESULTS AND DISCUSSION

6.1 TRENDS OVER TIME

The results show that the number of companies that disclose environmental information and the number of companies that have a stand-alone social and environmental reports both increased dramatically in 2008. See Chart 1 below.



Note: 1. EnvRep: the number of companies that disclose environmental information
2. CSR: the number of companies that have a stand-alone social and environmental report

Table 2 shows that the number of companies that disclose environmental information increased from 28 (56%) in 2007 to 46 (92%) in 2008. In 2007, only half of the investigated companies have CER, however, there are only 4 companies that have no CER at all in 2008. In 2009, compared to 2008, there is just one more company that has CER, so the major increase occurred in 2008, after the introduction of the MDEI.

Table 2: The occurrence of CER

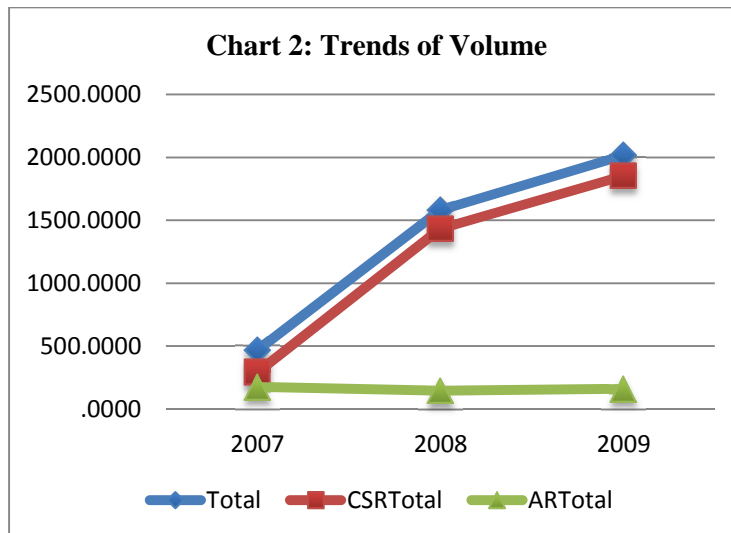
Year			Frequency	Percent	Cumulative Percent
2007	Valid	N	22	44.0	44.0
		Y	28	56.0	100.0
		Total	50	100.0	
2008	Valid	N	4	8.0	8.0
		Y	46	92.0	100.0
		Total	50	100.0	
2009	Valid	N	3	6.0	6.0
		Y	47	94.0	100.0
		Total	50	100.0	

Table 3 shows a more dramatic change between 2007 and 2008. While there are 6 companies that have stand-alone CSR reports in 2007, there are 37 companies in 2008, an increase of 517%. However, from 2008 to 2009, the increase rate is only 11%.

Table 3: The occurrence of stand-alone CSR reports

Year			Frequency	Percent	Cumulative Percent
2007	Valid	N	44	88.0	88.0
		Y	6	12.0	100.0
		Total	50	100.0	
2008	Valid	N	13	26.0	26.0
		Y	37	74.0	100.0
		Total	50	100.0	
2009	Valid	N	9	18.0	18.0
		Y	41	82.0	100.0
		Total	50	100.0	

As shown in Chart 2, we can also see that in 2008 a big jump occurred in the volume of disclosing words in total (CSR reports plus Annual reports) and in the volume of disclosing words in CSR reports only. However, the volume of disclosing words in annual reports slightly decreased from 2007 to 2008, which suggests that more Chinese listed companies are using their CSR report as the medium to communicate environmental information to their stakeholders.



Note: 1. Total: the volume of disclosing words in CSR reports and Annual reports
 2. CSRTotal: the volume of disclosing words in CSR reports only
 3. ARTotal: the volume of disclosing words in Annual reports only

The descriptive analysis in Table 4 shows that the volume of disclosing words increased suddenly in 2008. Before 2008, the mean value of total words on environmental information in both CSR reports plus Annual reports is 467.6, and jumped to 1579.74 in 2008 and 2014.4 in 2009. We can also see that the major contribution of the disclosing words is from the CSR reports, as disclosing words in CSR reports increased from 291.12 in 2007 to 1434.1 and 1853.22 in 2008 and 2009 respectively.

Table 4: The volume of environmental disclosing words

Year		N	Minimum	Maximum	Sum	Mean	Std. Deviation
2007	Total	50	.00	5396.00	23380.00	467.60	1153.97
	CSRTotal	50	.00	4552.00	14556.00	291.12	974.36
	ARTotal	50	.00	1313.00	8824.00	176.48	264.83
	Valid N (listwise)	50					
2008	Total	50	.00	7737.00	78987.00	1579.74	1797.81
	CSRTotal	50	.00	7338.00	71705.00	1434.10	1737.54
	ARTotal	50	.00	748.00	7282.00	145.64	177.53
	Valid N (listwise)	50					
2009	Total	50	.00	10356.00	100720.00	2014.40	1924.59
	CSRTotal	50	.00	9682.00	92661.00	1853.22	1830.51
	ARTotal	50	.00	685.00	8059.00	161.18	189.22
	Valid N (listwise)	50					

Note: 1. Total: the volume of disclosing words in CSR reports and Annual reports.
 2. CSRTotal: the volume of disclosing words in CSR reports only.
 3. ARTotal: the volume of disclosing words in Annual reports only

The above results show that both the number of disclosing companies and the volume of disclosing words is increasing. 2008 is a benchmark year as there is a significant rise in CER.

This suggests that the MDEI did significantly influence CER in China.

6.2 DESCRIPTIVE ANALYSIS BY THEME

The volume of words and the number of companies that disclose environmental information with specific themes is also examined, and the result is represented in Chart 3 and Table 5.

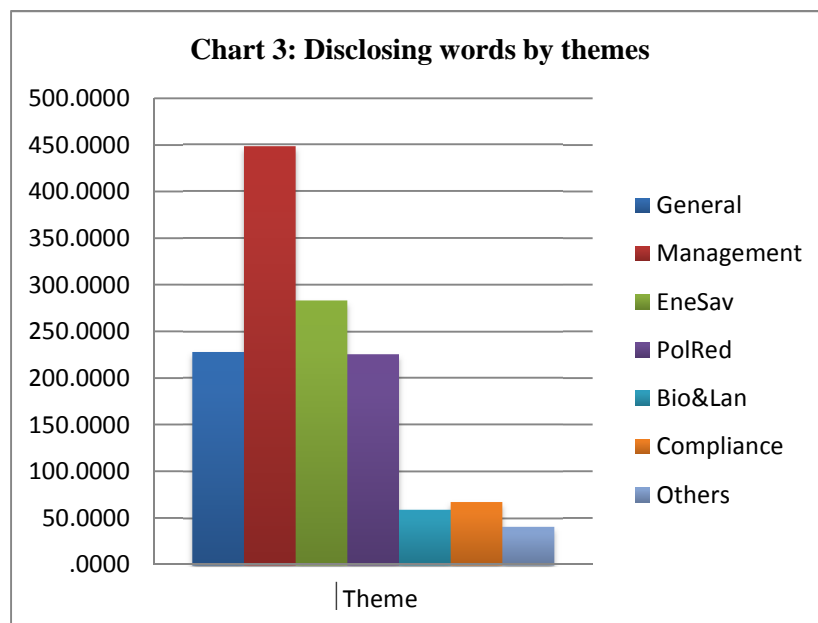


Table 5: Descriptive Statistics

	Frequency		Volume of disclosing words					Std. Deviation
	N	%	Minimum	Maximum	Sum	Mean	%	
General	105	70	.00	1686.00	34281.00	228.54	17	300.04
Management	86	57	.00	3775.00	67171.00	447.80	33	735.93
EneSav	87	58	.00	2958.00	42495.00	283.30	21	461.67
PolRed	60	40	.00	3975.00	33935	226.23	17	514.14
Bio&Lan	27	18	.00	1201.00	8903.00	59.353	4	172.94
Compliance	65	43	.00	502.00	10140.00	67.60	5	106.62
Others	44	29	.00	963.00	6162.00	41.080	3	111.95
Total	150	100	.00	10356.00	203087.00	1353.91	100	1773.71
Valid N (listwise)	150							

Not surprisingly, the volume of disclosing words on their “Environmental management approach” ranks at the top, with a mean value of 447.81(33%). According to the MDEI, Article 19, it encourages companies to voluntarily disclose “Information on their environmental protection investment and environmental technology development” and “Information on the construction and operation of their environmental protection facilities”. Moreover, when reading the reports, it is noticed that Banks disclose a large amount of

information on how they set up criteria for “Green Credit” and implement it to mitigate the environmental impact of their services and match the government’s “Green Policy”, thus, this contributes most to the theme of “Environmental management approach”.

The mean value of disclosing words for the “General Statement” theme is 228.54, which is also high. As previous studies (Gao, 2011; Situ & Tilt, 2012) claim that Chinese CER is in an emerging stage, it is no surprise that companies disclose information about their commitments, goals and policies relevant to the environmental aspects and the environmental risks and opportunities they face rather than disclose specific information about their environmental performance.

“Resources and Energy Saving” and “Pollution and emission reduction” are the other significant themes that appear in the reports. The mean value of the themes are 283.3 and 226.23 respectively, and combined they contribute 38% of the words in total. In addition, 58% of the sample companies disclose in the theme of “Resources and Energy Saving” and 40% of the sample companies disclose in the theme of “Pollution and emission reduction”. This result is well matched to the voluntary requirement of the MDEI, which encourages companies to voluntarily disclose “their total annual resource consumption”, “type, volume and content of pollutants discharged by them and where the pollutants are discharged into”, “information on the handling and disposal of waste generated from their production” and “information on recycling and comprehensive use of waste products”.

The volume of disclosing words by the theme “Biodiversity and Land Rehabilitation” is very low. It contributes only 4% to the total words, and only 27 companies disclosed in this theme, which accounts for 17% of the sample companies. Unsurprisingly, most of the companies ignored this theme, as it is not the theme explicitly encouraged by the MDEI.

Although the mean value of disclosing words of “Compliance” is low, 67.6 only, the number of companies that mention this theme in their reports is over 40%. Most of the companies use one sentence to state that they comply with the nation’s policy, and fulfil the energy saving quota that has been allocated to them.

Regarding “Others”, environmental awards appear frequently, and a few companies disclose their donations related to environment aspects.

In general, the disclosure complies with the Chinese government’s emphasis, energy saving and pollutant emission reduction are the major themes that are disclosed by Chinese companies, while biodiversity and land rehabilitation has been neglected.

6.3 COMPARATIVE ANALYSIS

Before conducting comparative analysis, the normality of the data was tested first by using SPSS. Table 6 presents the results from two well-known tests of normality, namely Kolmogorov-Smirnov and Shapiro-Wilk test. The results show that both significance levels of the Kolmogorov-Smirnov and Shapiro-Wilk test are lower than the 0.01 level, which indicates that the data is not normally distributed. Therefore, to test whether a significant difference appears in the volume of total disclosing words between SOE and non-SOE, non-parametric Mann-Whitney U tests are applied to the data.

Table 6: Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total	.223	150	.000	.757	150	.000

a. Lilliefors Significance Correction

Table 7: Mann-Whitney U Tests

Hypothesis Test Summary				
	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Total is the same across categories of SOE.	Independent-Samples Mann-Whitney U Test	.019	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

The result of the Mann-Whitney U Tests suggests that the null hypothesis should be rejected, which is to say that the distribution of total disclosing words is different between SOE and non-SOE. This indicates that state ownership has significant impact on the volume of CER of sampled companies.

Table 8: Total disclosing words by state-ownership

SOE	N	Minimum	Maximum	Sum	Mean	Std. Deviation
N Total	78	.00	5482.00	79077.00	1013.80	1306.52
Y Total	72	.00	10356.00	124010.00	1722.36	2118.09

Table 8 confirms the result of the Mann-Whitney U Tests. The mean value of total disclosing words by SOE is 1722.36, compared to those by non-SOE it is 69.89% more.

This study examines annual reports and CSR reports of 50 companies that are listed on SSE from 2007 to 2009. The results show that trend of CER in China is increasing, both in terms of the number of disclosing companies and the volume of disclosing words. There is evidence of a leap-frog occurrence in 2008, when the MDEI was enacted. Energy saving and pollutant emission reduction, which are the main themes of Chinese government’s Green Policy, appear to be the main theme that is disclosed by the examined companies. The comparative analysis shows that SOEs perform better CER than non-SOEs, as the results of Mann-Whitney U Tests suggest that the distribution of total disclosing words by SOE is significantly different from those by non-SOE. Finally, the descriptive analysis by state-ownership shows SOEs discloses much more environmental information than non-SOEs. The findings of the study provide evidence that the Chinese government influences Chinese CER considerably.

7. IMPLICATION AND CONCLUSIONS

7.1 IMPLICATIONS

In contrast to free-market capitalism, where it is believed that the invisible hand is sufficient to handle the market, the power of government under state capitalism on the economy is much stronger. However, State Capitalism suggests that instead of using heavy regulation, the government tries to meld its political power with capitalist power. With regards to Chinese CER, the results of this study show that a dramatic increase took place in 2008, the year that the MDEI was enacted. The MDEI encourages companies to disclose a list of environment-related information and, although it is not a mandatory requirement, companies are willing to follow. As discussed previously, state capitalism depends on the government to pick the winner, and the Chinese communist party, the real controller behind the Chinese government, has cells in most big companies - in the private as well as the state-owned sector. This enables them to get involved in business planning and influence the board's decisions. Therefore, it is not a surprise to see that the Chinese government can influence CER without needing to mandate or regulate firm practices.

Our results show that resource and energy saving and pollutant emission reduction are the themes which have been disclosed most by Chinese listed companies. This finding also indicates that the Chinese government's impact on Chinese CER is significant. Within the theory of State Capitalism, although the government does not direct supplies of scarce resources and attach values to goods and services, it has considerable direct influence over companies. For example, the Chinese government can shape the overall market by managing its currency, directing money to favoured industries and working closely with Chinese companies abroad. Obviously, the Chinese government is essential to Chinese companies' survival. In order to gain support and approval from the Chinese government, it is no wonder that Chinese companies disclose environmental information that is desired by the Chinese government.

State Capitalism also argues that listing SOEs on the stock market is one of the capitalist tools they will use to achieve their political goals. The Mann-Whitney U Tests suggest the distribution of total disclosing words is significantly different between SOE and non-SOE companies, and the comparative analysis suggest that SOEs disclose more environmental information than non-SOEs. The Chinese government is the actual controller of SOEs. No doubt, it has stronger influence on SOEs' decision making than that on non-SOEs. As Green Reporting is one of the nation's Green policies, SOEs would perform better CER than non-SOEs. Again, our results indicate that, in a state capitalist country, even without mandatory regulation, government can influence listed companies' CER performance.

7.2 CONCLUSION

As discussed above, we conclude that in a state capitalist country where public environmental awareness is low, government's emphasis on environmental issues can help companies pay more attention to their environmental activities while they are at an emerging stage. However, it also raises doubt that the excessive power of the state on CER may diminish the reliability of CER, as Companies are ultimately responsible to the government not to a variety of stakeholders. As such, government's effort to shift environmental governance to a more democratic approach may never be achieved.

The major contribution of this study is the evidence that the development of CER in a state capitalist country, such as China, does not follow the same course of events as in the West. CER in China is largely driven by state capitalism. In a state capitalist economy, the state's

political power on CER is far stronger than it is in a country where it is under liberal capitalism.

There are limitations for this study. We only conduct the descriptive analysis and examine the different between SOEs and non-SOEs. However, there are other variables, such as industry, size and whether the firms are listed in other exchanges that may have influence on the result. To address the limitations, further research is needed by doing more sophisticated panel data analysis and using a bigger sample (including more sample companies and their reports of longer period). Moreover, research methods other than content analysis can be used to further confirm or refute the result of this study.

REFERENCES:

- Berg, B.L., (2004), *Qualitative Research Methods for the Social Sciences, 5th Edition*, Toronto, Pearson.
- Bina, O., (2010), "Environmental Governance in China: Weakness and Potential from an Environmental Policy Integration Perspective*", *China Review*, Vol. 10 No. 1, pp. 207.
- Bryman, A., and Bell, E., (2007), "Content Analysis", In *Business Research Methods*, New York, Oxford University Press Inc.
- Cheng, H., (2003), "Chapter 1: Introduction", In *Analysis of Panel Data*, Cambridge, United Kingdom, Cambridge University Press.
- China Securities Index Co., L., (2012a), "Csi Central State-Owned Enterprises Composite Index and Csi Central State-Owned Enterprises 100 Index", (Electronic), http://www.csindex.com.cn/sseportal_en/csiportal/xzxx/file/CSI_Central_State-owned_Enterprises_100_Index_Handbook.pdf [Accessed: 11/07/2012].
- China Securities Index Co., L., (2012b), "Sse180 and Sse50 Index Methodology", (Electronic), http://www.sse.com.cn/sseportal/cs/zhs/xxfw/flgz/temp/Index_Methodology_EN_000010n16.pdf [Accessed: 11/07/2012].
- China.com.cn, (2008), "Chinese Ministry of Environmental Protection Resorted to the "Green Securities" Sword: 13 Categories of Industries by Strict Control (环保总局祭出"绿色证券"利剑 13类行业受严管)", (Electronic), http://www.china.com.cn/news/txt/2008-02/26/content_10767368.htm [Accessed: 30/12/2012].
- Chinese Central Government, (2006), "The 11th Five-Year Plans of People's Republic of China (中华人民共和国国民经济和社会发展第十一个五年规划纲要)", (Electronic), http://news.xinhuanet.com/misc/2006-03/16/content_4309517_1.htm [Accessed: 20/08/2011].
- Deegan, C., (2002), "Introduction: The Legitimising Effect of Social and Environmental Disclosures - a Theoretical Foundation", *Accounting, Auditing & Accountability Journal*, Vol. 15 No. 3, pp. 282-311.
- Deegan, C., (2008), "Towards the Implementation of Environmental Costing to Inform Capital Investment Decisions: The Case of Australian Electricity Distributors and Their Choice of Power Poles", *Australian Accounting Review*, Vol. 18 No. 44, pp. 2-15.
- Deegan, C., (2009a), "Extended Systems of Accounting - the Incorporation of Social and Environmental Factors within External Reporting", In *Financial Accounting Theory*, (pp. 378-425), Sydney, McGraw-Hill.
- Deegan, C., (2009b), "Unregulated Corporate Reporting Decisions: Systems-Oriented Theories", In *Financial Accounting Theory*, (pp. 318-377), Sydney, McGraw-Hill.
- Deegan, C., and Blomquist, C., (2001), "Stakeholder Influence on Corporate Reporting: An Exploration of the Interaction between the World Wide Fund for Nature and the Australian Minerals Industry", *3rd Asian Pacific Interdisciplinary Research in Accounting Conference Proceedings, APIRA*, .
- Deegan, C., and Carroll, G., (1993), "An Analysis of Incentives for Australian Firms to Apply for Reporting Excellence Awards", *Accounting and Business Research*, Vol. 23 No. 2, pp. 219-227.
- Deegan, C., Rankin, M., and Voght, P., (2000), "Firms' Disclosure Reactions to Major Social Incidents: Australia Evidence", *Accounting Forum*, Vol. 24 No. 1, pp. 101-130.
- Dobbs, S., and Van Standen, C., (2011), "Motivations for Corporate Social and Environmental Reporting: New Zealand Evidence", *The 10th Australasian Conference on Social and Environmental Accounting Research*.
- Friedman, M., (1962), *Capitalism and Freedom*, Chicago, University of Chicago Press.

- Gao, Y., (2011), "Csr in an Emerging Country: A Content Analysis of Csr Reports of Listed Companies", *Baltic Journal of Management*, Vol. 6 No. 2, pp. 263-291.
- Guo, P., (2005), "Corporate Environmental Reporting and Disclosure in China", (Electronic), <http://www.csr-asia.com/upload/environmentalreporting.pdf> [Accessed: 05/03/2009].
- Hasnas, J., (1998), "The Normative Theories of Business Ethics", *Business Ethics Quarterly*, Vol. 8 No. 1, pp. 19-42.
- Hossain, M., Islam, K., and Andrew, J., (2006), "Corporate Social and Environmental Disclosure in Developing Countries: Evidence from Bangladesh", *the Asian Pacif Conference on International Accounting Issues*, pp. 1-22.
- Hu, j., (2005), "Buiding up a Socialism Harmonious Society", *Provincial Officer Symposium*.
- Hu, j., (2007), "Hold High the Great Banner of Socialism with Chinese Characteristics in Order to Win New Victories in Building a Moderately Prosperous Society in the Struggle", *17th CPC Congress*.
- Ian, B., (2010), "The End of the Free Market: Who Wins the War between States and Corporations", *European View*, Vol. 9 No. 2, pp. 249-252.
- KPMG, (2008a), *Kpmg International Survey of Corporate Responsibility Reporting 2008*.
- KPMG, (2008b), *Sustainable Reporting: A Guide in China*.
- KPMG, (2011), *Kpmg International Survey of Corporate Responsibility Reporting 2011*.
- Krippendorff, K., (1980), *Content Analysis: An Introduction to Its Methodology*, London.
- Mohammad, A., Shaila, A., and Md. Shahidul, I., (2009), "Corporate Social Responsibility Reporting: Illustrations from a Less-Developed Country", *Journal of The Asia- Pacific Centre for Environmental Accountability*, Vol. 15 No. 2, pp. 2-12.
- Nurhayati, R., Brown, A., and Tower, G., (2006), "Understanding the Level of Nutural Environment Disclosures by Indonesian Listed Companies", *Journal of the Asia Pacific Centre for environmental accountability*, Vol. 12 No. 8, pp. 4-11.
- Shan, Y.G., (2009), *Corporate Disclosures of Related-Party Relationships and Transactions in China: Agency, Governance, Legitimacy and Signalling Influences*, University of South Australia, Adelaide.
- Situ, H., and Tilt, C.A., (2012), "Chinese Government as a Determinant of Corporate Environmental Reporting: A Study of Large Chinese Listed Companies", *Journal Asia-Pacific Centre for Environmental Accountability*, Vol. 18 No. 4, pp. 251-286.
- Song, X., and Li, J., (1992), *Accounting for Social Responsibility*, Beijing, China Financial Economics Publisher.
- The Economist, (2012), "State Capitalism", *The Economist*, Vol. January, pp. 1-14.
- van den Burg, S., (2008), "Environmental Information Disclosure in China", *International Sociological Association*.
- Wang, X., (2011), "A Preliminary Discussion on China's Legal Construction of "Green Security" Policy (浅议我国绿色证券政策的法律构建)", (Electronic), <http://www.lunwennet.com/thesis/2011/22434.html> [Accessed: 30/12/2012].
- Weber, R.P., (1985), "Content Classification and Interpretation", In *Basic Content Analysis*.
- Xiao, S.F., and Mi, H.Y., (2004), "Analysis on the Survey of Enterprises' Environmental Protection and Accounting -Views on Necessity and Feasibility of Establishing Environmental Accounting in China", *Green China*, Vol. 22, pp. 51 – 54.
- Zhang, S., (1993), "Relation between Economic Development and Corporate Social Accountability (经济发展与社会责任会计)", *China Agriculture Accounting*, Vol. 2.
- Zissis, C., and Bajoria, J., (2008), "China's Environmental Crisis", (Electronic), <http://www.cfr.org/publication/12608/> [Accessed: 07/04/2009].

APPENDIX A: DEFINITION OF THEMES

General Statement

- Information about overall performance
- An overview of company's philosophy and the background to all of their activities that affect the environment.
- Organization-wide goals regarding performance relevant to the Environment Aspects.
- Brief, organization-wide policy (or policies) that defines the organization's overall commitment related to the environment.
- Any information of company's commitments on future environmental undertakings or improvements.
- Major organizational environmental risks and opportunities

Environmental management approach

- Existence of Department and/or committee for pollution control and/or management positions for environment management
- Any statement about formal management systems regarding environmental risk and performance
- Any strategies and procedures for implementing policies or achieving goals.
- Training and/or education in relation to raising environmental awareness
- Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation
- Existence of mechanism in case of environmental accidents
- Green purchase
- Environmental evaluation of new projects
- Research, development and application of environmental technology and/or equipment
- Total investment in environmental protection

Resources and Energy Saving

- Direct/indirect energy consumption
- Energy saved due to conservation and efficiency improvement
- Any information about renewable energy used
- Reuse rate of energy resources
- Initiatives to reduce indirect energy consumption and reductions achieved
- Water consumption and water conserved
- Percentage and total volume of water recycled and reused
- Materials used by weight or volume
- Percentage of materials used that are recycled input materials

Pollution and emission reduction

- Total direct/indirect emission of greenhouse gases
- Initiatives to reduce green house gases emissions and reductions achieved
- Other air emissions
- Total water discharge by quality and destination
- Total weight of waste by type and disposal method
- Total number and volume of significant spills.
- Control of production noise
- Initiatives and technology used to reduce waste gas emissions, waste water emissions and waste residue emissions.

Biodiversity, land conservation and land rehabilitation

- Any activities and improvements done for the purpose of sustaining biodiversity
- Description of significant impacts of activities, products, and services on biodiversity
- Habitats protected or restored
- Prevention or repair of damage to the land resulting from processing natural resources
- Any information on land care (such as forest reserves and recovery, preventing desertized)

Compliance

- Fines and sanctions for non-compliance with environmental laws and regulations.
- Any information on stewardships, benchmarking and compliance of various environmental acts, regulations, policies or guidelines
- Any information about memberships or relationships with "green" groups including government bodies, NGOs and others.
- Any voluntary agreement signed for the purpose of environmental protection
- Is there any environmental accidents for the year
- Any information about environmental assessment

Others

- Environmental award
- Environmental donation
- Impacts on third party

APPENDIX B: CODING RULES

- Headings are not counted;
- Graphs, charts, tables and pictures are excluded;
- Financial statements and notes below financial statements are not counted;
- Repeated disclosures are counted each time they appear;
- The entire sentence is included in the word count if the sentence is relevant to environmental disclosure;
- Only the statements that specifically describe a company's environmental activities will be recorded into the category: 'environment protection'. General information such as a company's commitment to save energy and reduce emissions is recorded into the category: 'general statements';
- Any information that refers to increasing loans to green industries and decreasing loans to non-green industries is counted as 'Environmental management approach'.