The Impact of Corporate Social Responsibility on Financial Performance:

Evidence from Chinese Listed Companies

Zhe Yang

An abstract

Of a dissertation

Submitted to the Graduate School of Maharishi University of Management

In partial fulfillment of the requirements for the degree of

Doctor of Philosophy

June, 2018

Dissertation Supervisor: Dr. Dennis Heaton

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Abstract

Zhe Yang

The present research aims to explore the empirical relation between corporate social responsibility (CSR) and corporate financial performance (CFP) in China using a sample of 608 firms in 2015. Using data from 2014 to 2016 for these same companies, this study also examines if prior CSR was associated with subsequent CFP and if prior CFP was associated with subsequent CSR. Data from RKS, a Chinese ranking agency, was used to measure CSR. The financial performance measures used were return on assets (ROA) and earning per share (EPS), based on data from the CSMAR database of audited financial statements of companies traded on the Shenzhen and Shanghai stock exchanges.

Sequential regression analysis was used to test the relationship between total CSR rating scores from RKS database and ROA and EPS in the same year, 2015, with control variable of firm size. The results showed that there was a significant relationship between CSR and CFP. Whether a relationship exists between prior social responsibility in 2014 and subsequent financial performance in 2016, and also between prior financial performance in 2014 and subsequent CSR performance in 2016, have also been tested by linear sequential regression analysis. These results found that prior CSR was associated with subsequent ROA and EPS, and also that better prior ROA were associated with greater subsequent CSR. There was no relationship between prior EPS and subsequent CSR. Additionally, Pearson correlation was used

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to examine the correlation between two Chinese CSR agencies, RKS and CASS; the results showed that there is a moderate correlation (r = 39.6) between them. The final chapter of this dissertation presents a theoretical discussion of consciousness-based, authentic vision and values as the foundations of responsible management which can lead to both CSR and CFP.

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Abstract Approved:

Dennis P. Heaton

Dissertation Supervisor

Professor of Management

Title and Department

May 31, 2018

Date

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Zhe Yang

has been approved by the Examining Committee for the dissertation requirement of Doctor of Philosophy degree in Management at the June, 2018 graduation.

Dennis P. Heaton

Dissertation Supervisor

Maxwell V Rainforth

Member

Member

External Member

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Acknowledgments

After an intensive period of five years, I finally come to this thanks page. It has been a period of intense learning for me, not only in the scientific area, but also on a personal level. During this time, I went through the great events of life: get married and give birth to a child. I could not count how many times I wanted to give up, but people below have supported and helped me so much to complete.

This work would not have been possible without my supervisor, Dr. Dennis P. Heaton. I would like to take this opportunity to express my sincere gratitude and deep regards to for his exemplary guidance, monitoring and constant encouragement throughout the course of this Ph.D. process. His continued support and supervision have enthused me to take up the challenging tasks with full enthusiasm to complete the assignment.

I would like to express my gratitude to Dr. Maxwell Rainforth, for agreeing to be my second supervisor and for being so dedicated to guiding me with valuable feedback and suggestions, especially for sharing his expertise in statistics.

Special mention goes to my other committee members: Dr. Devon Almond, Dr. Zhao Jiangning for being my committee members and going far beyond the call of duty.

Finally, thanks to my parents, my husband and my son, for almost unbelievable support. They are the most important people in my world and I dedicate this thesis to them.

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Abstract

The present research aims to explore the empirical relation between corporate social responsibility (CSR) and corporate financial performance (CFP) in China using a sample of 608 firms in 2015. Using data from 2014 to 2016 for these same companies, this stud y also examines if prior CSR was associated with subsequent CFP and if prior CFP was associated with subsequent CSR. Data from RKS, a Chinese ranking agency, was used to measure CSR. The financial performance measures used were return on assets (ROA) and earning per share (EPS), based on data from the CSMAR database of audited financial statements of companies traded on the Shenzhen and Shanghai stock exchanges.

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Additionally, Pearson correlation was used to examine the correlation between two Chinese CSR agencies, RKS and CASS; the results showed that there is a moderate correlation ($r = 39.6$) between them. The final chapter of this dissertation presents a theoretical discussion of

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consciousness-based authentic vision and values as the foundations of responsible management which can lead to both CSR and CFP.

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Chapter 1: Introduction and Overview

The recent growth of Chinese corporate social responsibility (CSR) initiatives motivate research and analysis about CSR in China. The international image of China has been associated with human rights abuses, substandard products, sweatshops, and serious environmental pollution. In fact, the importance and significance of Corporate Social Responsibility (CSR) has gained an increasing amount of attention in the business field over recent decades in China. Chinese enterprises have been gradually engaged in a serious effort to implement CSR and to integrate CSR into all aspects of their businesses. However, as China is in a different stage of its economic and social development compared to developed Western countries, the practice of CSR must be in line with its own political, economic, and cultural conditions. The emergence of CSR initiatives can be seen as a reaction by the government to the negative impacts of economic reform. Different Chinese government bodies have set up Western-based CSR guidelines that highlight CSR principles and standards adopted by business enterprises in China. The government now considers CSR as a way to not only increase business competitiveness with enhanced business reputation and productivity in the global market, but ultimately to achieve a moderately prosperous society (Huang, Peng, Zhong and Zhang, 2013).

In the age of economic globalization, it has become an important business practice for companies globally to fulfill their social responsibilities and to communicate with their stakeholders. One of these strategies is the adoption of corporate social responsibility practices (Mohr, Webb & Harris, 2001). Organizations in China are constantly looking for new strategies to gain a positive advantage over their competitors in order to attract customers and enhance

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their financial performance. Also, promotion of the concept of “Harmonious Society” by the Chinese government has stimulated the preparation and publishing of CSR reports.

A growing body of research has shown that devoting resources to CSR can be an effective marketing tool to create and sustain a competitive advantage. More and more firms realized that they have to evolve from “doing well” to “doing better” by building added societal value to survive and compete in the competitive global market (Margolis & Walsh, 2003). However, in some companies, management believe that additional CSR investment is inconsistent with their efforts to maximize profits (Zhang, 2016). This disagreement has motivated researchers to examine the relationship between CSR and CFP.

The relationship between a firm's corporate social responsibility (CSR) and its financial performance has been the subject of a heated debate over decades. However, researchers have reached no consensus on the relationship between these variables. Some research has indicated that there is a positive relationship between CSR and CFP (Ameer & Othman, 2012; Saleh, Zulkifli & Muhamad, 2010). By contrast, some others have found that there is a negative or no relationship between CSR and CFP (Lech, 2013; Elouidani & Zoubir, 2015; Zhang, 2016).

This dissertation extends prior empirical research in three areas. First, the present study contributes to the literature by providing empirical evidence on the relationship between CSR and financial performance in China. Second, this study examines not only the extent to which social responsibility predicted financial performance, but also whether prior financial performance predicted social responsibility. Third, this study improved on the methodology used in previous studies by using evaluations of social responsibility from a knowledgeable source – Rankins CSR Ratings (RKS).

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Background

The adoption of corporate social responsibility (CSR) reporting activities has grown steadily in recent years. Firms started to report their ethical, social and environmental conduct to satisfy the requirements from stakeholders and to obtain competitive advantages (Waddock, 2004; Ghelli, 2013). Firms are also concerned with corporate financial performance (CFP), creating wealth for owners (Fomukong, 2014). The present study explored if there is a relationship between CSR and CFP, whether prior CSR is associated with subsequent CFP, and if prior CFP is associated with subsequent CSR. To introduce this study, prior related studies are reviewed and from this review, research problems regarding CSR measurement and lagged effects are described.

Research concerning the possible relationship between CSR and CFP has been traced back to the 1950s when scholars began to consider the connection between responsible business, social conduct and profit (Orlitzky, 2013). Previous studies of the relationship between CSR and CFP have produced inconsistent results. Some research has indicated that there is a positive relationship between CSR and CFP (Ameer & Othman, 2012; Saleh et. al, 2010; Wong, 2012). By contrast, some others have found that there is a negative or no relationship between CSR and CFP (Brine, Brown & Hackett, 2007; Chih, Chih, & Chen, 2010).

A reason mentioned for the inconsistent findings is the problems of the variety of methods that previous studies used to measure CSR (Waddock & Graves, 1997; Surroca, Tribó, & Waddock, 2010; Wang, Dou, & Jia, 2016). CSR is a multidimensional construct defined as the integration of the principles, processes, and policies related to social issues (Wartick & Cochran, 1985), and no single measure has been uniformly used.

In empirical studies of relationships between CSR and CFP, there are two generally

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accepted methods of measuring CSR. The first method is the reputation index, in which observers rate the firms on the basis of one or more dimensions of social performance. A main problem is that most reputation indices cover only a relatively small number of firms. Zhang (2016) had tested the relationship between CSR and CFP by using 300 listed Chinese companies in CASS database. Hirigoyen and Poulain-Rehm (2014) examined the lagged relationship between CSR and CFP with a sample size of 329 listed companies from Vigeo's database from the United States, Europe and the Asia-Pacific region, where the total population of companies is much more than the sample in that study. Because of the relatively small sample size, one must be cautious about generalizing from the results of these studies (Jiang & Yang, 2015; Jitaree, 2015).

Two different reputation indices of CSR are used in China. One is from the Chinese Academy of Social Sciences (CASS), and the other is from a non-governmental rating agency called Rankings CSR Ratings (RKS). To date, no research on the relationship between CSR and CFP in China has been conducted using CSR ratings from RKS.

The RKS method of measuring CSR is based upon content analysis, which uses the reporting of CSR activities in various firm publications, especially in the annual report (Cochran & Wood, 1984; Uadiale & Fagbemi, 2012). In China, content analysis measures of CSR have been used in CSR/CFP research by Yang (2012), Ding (2014) and Wong (2012), however, content analysis also has some drawbacks. The choice of variables to measure is subjective. Further, content analysis is only an indication of what firms say they are doing, and this may be very different from what they actually are doing.

Other ways of measuring CSR include performance indicators for social and environmental performance such as in the Global Reporting Initiative Standard (GRI), which is

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supported by an international, independent organization to help businesses, governments and other organizations understand and communicate the impact of business on critical sustainability issues (Chen, 2015; Reddy & Gorden, 2010; Chen, Feldmann, & Tang, 2015). GRI reporting is intended to reflect an organization's economic, environmental, and social performance (Gehman, 2011). Swinkels (2012) has investigated the relation between GRI sustainability reporting by companies and financial performance based upon data of top 250 firms from the Global Fortune 500, but found there was no relationship. Kasbun, Teh, and Ong (2016) found a positive association between sustainability reporting (GRI) and financial performance by examining 200 publicly listed companies in Malaysia. The possible limitations of using GRI sustainability reports are that GRI reports are 1) not sufficient in providing information for the CSR performance assessment at suppliers' level (Lee & Kim, 2014); and 2) with GRI reports being greater than 100 pages long, it is difficult to apply content analysis to collect data from a large sample of companies (Chen et.al, 2015).

Most research has only considered the relationship between CSR and CFP in the same one-year time period. However, there may be a time lag between changes in CSR performance and changes in CFP, firms generating more sales revenue and earning greater profits taking up corporate social initiatives, and it would take more than one year to translate CSR to actual financial benefits (Waddock & Graves, 1997; Palmer, 2012; Wang et.al, 2016). Therefore, it would be useful to determine whether the relationship holds consistently over time (Chen, 2015; Chetty, Naidoo, & Seetharam, 2015). Harrison and Freeman (1999) argued that the true effect of CSR cannot be detected because the benefits are long-term and subtle. A company that invests in a CSR initiative today might not receive a benefit from the program directly, but rather through subtler consumer loyalty derived from the idea that they are buying from a company that is

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socially conscious.

Most studies have examined correlations between CSR and CFP in the same year, without considering whether there are leading or lagging effect that might reflect the relationships between CSR and CFP, or vice versa. Hirigoyen and Poulain-Rehm (2014) found that greater social responsibility does not result in better financial performance and financial performance negatively impacts corporate social responsibility. Wong (2012) reported that prior financial performance is positively associated with CSR disclosure and CSR disclosure has a significant and positive effect on financial performance in the next year.

Statement of the Problem

Previous studies on the relationship between CSR and CFP in China have produced mixed findings. Yang (2012) studied a sample of 839 Chinese listed companies in 2010 and found a positive relationship between CSR and CFP. Yang, Lin and Chang (2010), Wong (2012) and Chen, Wang, Shang, Fosh and Lu (2015) also supported this positive relationship from their research in China using diverse measurements. Jiang and Yang (2015) reported that CSR is positively correlated with accounting-based financial performance but has no correlation with market-based financial performance.

The controversy of the CSR-CFP relationship in China involves two different empirical problems. The first problem concerns whether prior CSR comes before subsequent CFP or whether prior CFP comes before subsequent CSR. The present study explores this problem using CSR scores from RKS ranking data. This research can help inform managers whether improved financial performance is the prerequisite to implementing corporate social responsibility, and whether corporate social responsibility behavior contributes to improved financial performance.

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The second empirical problem is that in the previous research on the relationship between CSR and financial performance in China has been limited by questionable methods of measuring CSR. There are two common methods of measuring CSR regarding the relationship between CSR and CFP in China. The first method of measuring CSR is based upon content analysis, which measures the extent of the reporting of CSR activities in various publications and especially in the annual report (Ding, 2014; Wong, 2012). The problem with using content analysis of annual reports is that the choice of variables used to measure CSR is subjective. Corporate annual reports often have more public relations value than informational value and the relationship between such public statements and actual corporate action is uncertain (McGuire, Sundgren & Schneeweis, 1988). Therefore, there is no way to determine empirically whether the social performance data revealed by corporations are under-reported or over-reported in the content of annual reports. The second method of measuring CSR is based upon the reputation index, where observers rate firms on the basis of one or more dimensions of social performance (Orlitzky, Schmidt, & Rynes, 2003). However, the criteria of each reputation index may vary; and some reputation indices only list certain companies or certain countries and regions, so the sample size may not represent the total population of CSR companies. Small scale or less famous companies' CSR activities may have less visibility (Fombrun, 2007; Valjakka, 2013; Zhang, 2016). Previous studies on CSR measures and the relationship between CSR and CFP in China, have used the CASS (Chinese Academy of Social Science) database as the reputation index (Jiang &Yang, 2015; Zhang, 2016).

To avoid the measurement problem of CSR in China, this study applied another method by using a different ranking agency – RKS to measure CSR. The RKS database has a larger available sample size than the CASS database which has been used in prior research. The CASS-

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CSR database provides data for 600 available companies, and only 300 of these are public companies that have available financial data. RKS ratings and financial data are available for more than 600 companies per year. Second, CASS database is provided by the government, and may be inclined toward state-owned listed companies and not fully represent private enterprises. As a private professional organization, RKS could cover a broad range of enterprises, and their database includes mandatory and voluntary enterprises. The more comprehensive scope of data of RKS provides a stronger external validity compared with CASS. Third, the RKS database provides more recent data than CASS database. The CASS database only provides the CSR data until 2015. As a result, an out-of-date CSR research report may have little or no relevance to the current market situation. The RKS database provides CSR data across 7 years from 2009-2016.

RKS's MCT 2012_1.2 edition rating system refers to the newest international authoritative social responsible standard ISO26000; it considers industry differences by building industry index-I value and dividing listed companies into 22 industries based on CSRC (China Securities Regulatory Commission) industry classification standard. CASS measures CSR based on the traditional triple-bottom-line (TBL) model, which is an accounting framework to incorporate three dimensions of performance (social, environmental and financial), also called people, planet and profit. Lastly, the scoring criteria of RKS and CASS are disparate. RKS has four main elements to measure CSR: Macrocosm (30%), Content (45%), Technique (15%), and Industry (10%) while CASS uses Integrity (25%), Substantiality (30%), Balance (10%), Comparability (10%), Readability (20%), and Innovation (5%). The diverse difference between these two measures of CSR and the lack of prior research using RKS data is providing an opportunity for this study to make an original contribution by measuring CSR with RKS database.

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Research Questions

The specific research questions guiding this study are:

1. Is there a significant relationship between total CSR ratings using the RKS reputation index and financial performance?

2. Does a relationship exist between prior CSR in 2014 and subsequent CFP in 2016, and between prior CFP in 2014 and subsequent CSR in 2016?

3. To what extent do total CSR ratings from two reputation indexes in China (RKS and CASS) produce consistent reputation ratings?

Significance

This study was the first to test the relationship of CSR to CFP using the Rankings CSR ratings (RKS). In addition, the present study explored to what extent CSR scores from RKS correlate with CSR scores from CASS for the same company in the same period; this comparison of two rating systems sheds light on the validity of CSR measures.

This study also asked whether improved financial performance is the prerequisite to implement corporate social responsibility or whether corporate social responsibility behavior contributes to improved financial performance. This study filled a need within the current literature by examining the lagged effects in both directions between CSR (as measured by RKS rating system) and firm performance in China.

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Chapter II: Literature Review

Introduction

The purpose of this chapter is to review the previous studies pertaining to the relationship between corporate social responsibility (CSR) and corporate financial performance (CFP) in China, and identify a gap where this current study can contribute to the literature. The literature review presented here is structured in two parts. The first part focuses on the development of corporate social responsibility (CSR) worldwide. The second part, with three sections, reviews the empirical studies regarding the relationship between social responsibility and financial performance. Finally, it concludes with a summary of the key points of the existing literature and identifies the gap in the literature that the present study seeks to fill.

Strategy for Searching the Literature

The search strategies in this dissertation included: academic databases searching such as EBSCO; keyword searching in Google and Google Scholar; and other source searching from RKS official website and publications, CASS publications, SINA finance website and publications, Shanghai and Shenzhen Stock Exchange website and publications, related management textbooks and publications.

The search of academic databases in EBSCO used the key words “social responsibility of business” and “financial performance” in the Academic Search Premier and Business Source Premier Databases. Using peer reviewed full-text articles with bibliographies, this research included studies from 1999-2018. In total, six articles out of 102 satisfied the requirements about the direct relationship between CSR and CFP of these searches. Besides, the terms "corporate

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social responsibility", "CSR", "financial performance" have been used to search in Google and Google Scholar. First, 35 references used in the literature review were obtained from examining internet sources such as Google Scholar. Second, using peer reviewed full-text articles with bibliographies, this research included studies from the years1973-2016. In total, 10 articles satisfied the requirements about the direct relationship between CSR and CFP from these searches. Third, the remaining 3 references were adopted from reviewing the publications and management textbooks. A total of 54 articles were first sorted according to their content (such as relationship between CSR and CFP), and then regrouped by their results (such as a positive or a negative relationship between CSR and CFP).

Corporate Social Responsibility (CSR) Worldwide

Corporate Social Responsibility (CSR) has received both theoretical and empirical attention since the last century. Davis (1973) defined CSR as a firm's consideration of issues beyond narrow economic, technical, and legal requirements of the firm, in making social-oriented decisions. However, Milton Friedman (2007) argued that management has one responsibility, to maximize their shareholders' profits; social issues are not the concern of businesses. Carroll (1979) has identified a pyramid of CSR which encompasses the economic, legal, ethical, and philanthropic responsibilities with details included in each segment to clarify CSR. Wartick and Cochran (1985) constructed a general model of corporate social performance (CSP), on the basis of Carroll's model, to state the underlying interaction of social responsibility principles. Wood (1991) described CSR as the idea of business and society interwoven. While Mallenbaker (2005) emphasized the responsibility of business production to an overall positive impact on society.

Beyond these CSR concepts in the academic literature, international organizations have

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explained CSR in their own way. The World Business Council for Sustainable Development (WBCSD) (1999) mentioned CSR as business' commitment to contribute to sustainable economic development working with employees, their families, the local communities and society at large to improve their quality of life. The International Organization for Standardization (ISO) 26000 provides guidance on how businesses and organizations can operate in a socially responsible way: organizations in the world should ensure healthy ecosystems, social equity and good organizational governance in their growing process and build healthy world ecosystems for the long run. The Commission of the European Communities explained CSR as companies taking responsibility for their impact on society, which will bring benefits for customer relationships, cost saving, asset to capital, and human resource management. Crane, Matten and Spence (2008) contended that: "There are as many definitions of CSR as there are disagreements over the appropriate role of the corporation in society." Hence, there remains a lack of consensus on a definition for CSR (Lindgreen & Swaen, 2010).

Except for recent developments, organizations in China have been regarded as practicing the opposite of CSR, because of the world-famous sweatshops and environmental pollution problems (Lin, 2009). In fact, the Chinese government and business operators started to realize the issue of CSR since 2004, and the number of CSR reports released by Chinese companies increased from 4 to 130 in four years (Tang, 2012). Scholars worldwide began to research CSR in China in recent years. For the different situation of Chinese society, they came with various definitions of CSR in China. Zhang, Morse, Kambhamptati and Li (2014) applied Chinese traditional Confucian virtue to interpret CSR as being ethical, rather than simply profit-oriented.

Although there is no universal definition of corporate social responsibility, it generally refers to transparent compliance with legal requirements, and respect for people, communities,

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and the environment. Thus, beyond making profits, companies are responsible for the totality of their impact on people and the planet (Werther & Chandler, 2005).

Theoretical framework

Numerous studies have been dedicated to the relation between CSR and CFP, by investigating or assuming there is a positive, negative or no relationship. It has been supported by several theoretical hypotheses. One of them is stakeholder theory, which is widely known from Freeman (1984), which defined stakeholders as “those groups who can affect or are affected by the achievement of an organization’s purpose” (p. 49). Donaldson and Preston (1995) described stakeholder theory by three dimensions: descriptive, instrumental, and normative to explain the structure and operations of corporations. It means corporations have to act in a responsible way for stakeholder interests and to achieve a better society. The instrumental stakeholder theory, as an important strand of stakeholder theory emphasis the positive influence of social behavior on financial performance in an organization, by satisfying a number of constituents who can influence company outcomes, such as employees, customers etc. (Freeman, 1984; McGuire et al., 1988). Besides, this theory considers corporations with social responsibility manage stakeholders to assure corporate revenues, profits and then maximize stakeholder return. Attentions to stakeholders help firms to avoid making inaccurate decisions to save costs and optimize resources, employees in this kind corporations show greater commitment for higher retention, customers may pay for higher price with increased demand because of their positive reputation, and investors will invest in firms who pursuing CSR (Barnett & Salomon, 2006; Graves & Waddock, 1994). Instrumental stakeholder theory also suggests that corporate social responsibility has a positive impact on financial performance (Freeman, 1984). This theory implies that favorable social performance, meeting the needs of various corporate stakeholders,

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will ultimately lead to favorable financial performance, and vice versa (Preston & O'Bannon, 1997; Wang et al., 2016). For example, a firm perceived as high in social responsibility may face relatively few labor problems. When employees are satisfied, and the working conditions are optimal, there will be an increase in productivity and a reduction of error rates (Soloman & Hansen, 1985). Previous scholars explored the potential reasons for this positive relationship. Cornell and Shapiro (1987) considered firms' social behavior as competitive advantage on reputation to improve profitability. Margolis, Elfenbein and Walsh (2009) has done a meta-analysis of 251 studies presented in 214 manuscripts with an overall result of positive relationship between corporate social and financial performance even through it was small (mean r= .13, median r= .09, weight r= .11). Wang et al. (2016) estimated the overall effect of the relationship between CSR and CFP in a meta-analytic framework. Based on 42 studies, the result showed there existed a positive and significant relationship between these two variables.

Good management theory argues that both CSR and CFP are associated with overall management performance. Waddock & Graves (1997) mentioned that attention to CSR improves relationships with stakeholder groups including better employee relations, higher productivity, and improved triple bottom line (social, economic and environmental development). CSR brings out positive customer perception, which can be a competitive advantage for increasing sales and decreasing costs. For example, positive customer perceptions about the quality and nature of a company's products are increasingly becoming bases of competition. Such positive perception of the firm may lead to increased sales or reduced management costs. Good employee relations might also be expected to enhance morale, productivity and satisfaction. Excellent community relations might provide incentive for local government to provide competition enhancing tax breaks, or reduced regulation, thereby reducing costs to the firm and improving the financial

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performance (Tsoutsoura, 2004).

Slack resources theory takes the view that firms with available slack resources and high level financial performance may consider spending those resources on “doing good by doing well”, which means these resources may cause improved CSR (Waddock & Graves, 1997). Previous literatures about the relationship between CSR and CFP provided evidence of this theory (Fauzi, 2009; Surroca et.al, 2010; Godfrey, Merrill & Hansen, 2009). On the contrary, the trade-off hypothesis asserts that CSR has a negative effect on financial performance in that firms incur costs from socially responsible actions which put them at an economic disadvantage compared to other, less responsible firms. These costs may reduce profitability and competitiveness (Aupperle, Carroll & Hatfield, 1985). Moreover, Moore (2001) asserted that the implementation of CSR practices requires businesses to make additional investments in such activities, leading to an increase in costs without corresponding offsetting benefits, thereby hurting financial performance. Table 2.1 summarizes these theoretical perspectives on the relationship between CSR and financial performance:

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Table 2-1

Theoretical Perspectives on the Relationship between CSR and Financial Performance

Theories	Description
Instrumental stakeholder theory (Freeman, 1984; McGuire et al., 1988)	There is a positive relationship between CSR and CFP.
Good management theory (Waddock & Graves, 1997)	There is a high correlation between CSR activities and CFP.
Slack resource theory (Waddock & Graves, 1997)	Better financial performance will cause improved CSR because of "doing good by doing well".
Trade-off hypothesis (Friedman, 1970; Aupperle et al., 1985)	CSR activities will cause higher costs and then reduce profitability (CFP).

Inconsistent Findings on the Relationship between CSR and CFP

The controversy of the CSR-CFP relationship involves two different empirical problems. One of the issues is the direction of the relationship: Are CSR and CFP positively or negatively associated, or not associated at all? Despite a long record of discussion about the theory, the majority of results from previous studies and meta-analyses have pointed to a positive relationship between CSR and CFP (Margolis & Walsh, 2003). In the literature, the measures used to test the relationship between CSR and CFP vary, which bring out the second issues about the measures of CSR and CFP. From previous meta-analysis and other selected articles, reputation index and content analysis are the two common methods have been used to measure CSR (Wong, 2012; Hagberg, Johansson & Karlsson, 2015) while CFP has been measured by various accounting indicators and market indicators. Accounting indicators are mainly based on the company's financial statements data, reflecting the company's operating situation and historical financial performance. Market indicators focus on stock markets and shareholder

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returns associated with anticipated future or long-term financial performance. Most previous research combined both accounting and market indicators (Hirigoyen & Poulain-Rehm, 2014; Jitaree, 2015; Elouidani & Zoubir, 2015).

There are numerous previous studies about the relationship between CSR and CFP from all over the world (Orlitzky et. al, 2003; Ameer & Othman, 2012; Saleh et. al, 2010; Moenna, 2014), however, the results of these studies are diverse. Some of them found a positive association between CSR and CFP. Saleh et. al (2010) explored the relationship between CSR and CFP in Malaysia with positive result, which suggested that local firms can achieve advanced financial performance if they engage in social activities. Ameer and Othman (2012) analyzed the relationship with the results that socially responsible corporations obtain higher profits for the same level of systematic risk and greater sensitivity to market changes, leverage levels and company size. Wong (2012) has tested this current relationship in China and had the same positive result as Saleh et. al., 2010 and Ameer & Othman, 2012.

Meta-analysis has been used to estimate the relationship between CSR and CFP in previous literature. Margolis et.al (2009) conducted a meta-analysis of 251 studies presented in 214 manuscripts from 1972 to 2007. From this study, the measurement of CSR including corporate policies, disclosure, environmental performance, philanthropic donations, revealed misdeeds, self-reported social performance, observers' perceptions, third-party audits and screened mutual funds. The third-party audits are a systematic assessment of data by investigators who evaluate a company along a set of criteria. The most common such audit, in that review, was the Kinder Lydenberg Domini (KLD) index. It evaluates companies on eight dimensions which were developed by the Council on Economic Priorities (CEP). The measurements of CFP are accounting-based measure of financial returns (e.g. Return on Assets,

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Return on Equity) and market-based measure of financial value (e.g., earnings per share, stock returns). In addition, Margolis et.al (2009) reviewed the timing of CSR and CFP measurements according to three main choices: the measure of CSR precedes the measure of CFP; the measure of CFP precedes the measure of CSR; or they are measured concurrently and the most common control variables with this study is industry, firm size and risk. In this most comprehensive review of prior research, the authors concluded that the overall relationship between CSR and CFP is positive but small (mean r= .13, median r= .09, weighted r= .11), and the results showed that companies did not appear to suffer financially for their socially responsible investments.

Wang et.al (2016) has examined the CSR-CFP link in a meta-analytic framework by dividing all the samples into five subgroups based on the operationalizations of CSR (reputation ratings, content analysis, survey, social auditing, proxy variable) and three subgroups based on the operationalizations of CFP (accounting, market-based, perceptual). By conducting a QM test provided by Viechtbauer (2010), which is based on the levels of a categorical moderator, the authors found that the different types of operationalizations of CSR were significantly moderating the relationship between CSR and CFP (p< .0001, df=5). It indicated that different measurement strategies of CSR were significantly different in financial performance. This research found that overall the relationship between CSR (as measured by an independent social auditing database) and CFP is positive across all different kinds of measurement strategies (r= .0405, p< .0001).

Researchers arguing for negative relationship between CSR and CFP mentioned the direct cost to implement CSR and that executives take money and resources for their personal values (doing social good) instead of stakeholders' benefits. The argument on the positive association between CSR and CFP was based on the instrumental stakeholder theory which

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suggests that firms view their stakeholders as part of management. When stakeholders have awareness about implementing CSR in enterprises, they will support CSR with the resources they control. Employees and customers will bring positive results for enterprises too. Wang et.al (2016) also mentioned that the preponderance of results from prior empirical studies and meta-analyses pointed a positive relationship between CSR and CFP. In addition, Wang et al. (2016) concluded that the CSR-CFP relationship is stronger for firms from advanced economies than for firms from developing economies (r= .0404 vs. r= .0175, respectively) because CSR in the developed world has a relatively mature institutional system and efficient market mechanism.

Orlitzky et al. (2003) conducted a meta-analysis of 52 studies yielding a total sample size of 33,878 observations to investigate the relationship between CSR and CFP. Orlitzky et al. (2003) indicated an average observed correlation of .08 and a true-score correlation of .15 to support their hypothesis that corporate social performance and financial performance are generally positively related across a wide variety of industry and study contexts. Regarding the measurement strategy on CSR and CFP, Orlitzky et al. (2003) concluded that the three broad subdivisions of CFP consist of market-based (earning per share, price per share), accounting-based (return on assets-ROA) and perceptual (survey) measures. The indicators of CSR were: CSR disclosures, CSR reputation ratings, social audits, and managerial CSR principles.

Similarly, Margolis and Walsh (2003) reviewed 127 studies on the relationship between CSR and CFP from 1972 to 2002. The findings showed that there is a positive association, and very little evidence of a negative association between CSR and CFP.

In addition, Moenna (2014) examined the possible linkage between CSR and CFP on a sample of the top fifty listed companies from E.U. The result showed that there is a positive association between CSR and CFP on the accounting measure of ROA (return on assets), and no

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relationship between them on the market measure of EPS (earning per share). Lech (2013) inspected the impacts of CSR rules on financial performance of companies listed on Warsaw Stock Exchange by a cross-sectional sample from 2010-2012; the study found no significant results. Jiang and Yang (2015) investigated the relationship with a sample of 223 Chinese heavy-polluting companies and found a positive connection between environmental endeavors of CSR with accounting-based financial performance ($p< .05$), but no connection with market-based financial performance. Return on equity (ROE) and earning per share (EPS) were used to measure CFP while the reputation index (CASS) has been used to measure CSP. The primary data of CSR from the Chinese heavy-polluting companies of the year 2013 were from the CASS-CSR in 2013 and companies' financial reports of 2013 and 2014 from the official websites of Shanghai Stock Exchange (SSE) and Shenzhen Stock Exchange (SZSE). The results of this study also found that firms with higher profitability ($p= .011$) invest more in CSR activities.

Prior studies concerning the relationship between CSR and CFP are shown in Table 2-2 below. The entries in the table are sorted by chronological order of publication year and were selected for the following reasons: All of these studies were about the direct relationship between CSR and CFP in different regions. These studies by Ameer & Othman (2012), Palmer (2012), Lech (2013), Hirigoyen & Poulain-Rehm (2014), Jiang & Yang (2015) provided a model for the present study about the methods to measure the independent variables-CSR (see chapter 3). All of these researches, except Jiang and Yang (2015), provided models for the present study on the methods to measure the dependent variables – CFP (see chapter 3). Jiang and Yang (2015), Wong (2012) contributed to the literature on the relationship between CSR and CFP in China, and Jiang and Yang (2015), which measured CSR by CASS, also served as a model to use RKS database in present study. Other articles on researches reviewed by meta-analysis.

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Table 2-2

Empirical studies about the relationship between CSR and CFP

Author/Date	Country	Measures of CSR and CFP	Findings
Aras, Aybars &Kutlu (2010)	Turkey	CSR: Content analysis CFP: ROA, ROE, ROS (Return on sales)	No relationship
Choi, Kwak and Choe (2010)	South Korea	CSR: Reputation index CFP: ROA, ROE and Tobin's Q	Positive by stakeholder-weighted CSR index No relationship by equal-weighted CSR index
Karagiorgos (2010)	Greece	CSR: Content analysis CFP: Stock returns	Positive
Ameer & Othman (2012)	North America, Europe and Korea	CSR: Reputation index CFP: Sales/revenue growth, Return on Assets, Profit before tax, Cash flows from operating activities.	Positive
Wong (2012)	China	CSR: Content analysis CFP: ROA, market return, percentage of sales, Tobin's Q	Positive
Palmer (2012)	United States	CSR: Reputation index CFP: ROA, Gross margin	Positive
Lech (2013)	Poland	CSR: Reputation index CFP: ROA, ROE	No relationship
Saleh, Zulkifli & Muhamad (2014)	Malaysia	CSR: Content analysis CFP: ROA, Stock market return,	Positive

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		Tobin's Q	
Moenna (2014)	European Union	CSR: GRI (Global Reporting Initiative) CFP: ROA, EPS	Mixed, Positive and no relationship
Hirigoyen & Poulain-Rehm (2014)	The United States, Europe and the Asia-Pacific region	CSR: Reputation index CFP: ROA, ROE, MBR	None and negative
Elouidani & Zoubir (2015)	Africa	CSR: Content analysis CFP: ROA, ROE, Tobin's Q	Negative
Jitaree (2015)	Thailand	CSR: Content analysis CFP: ROA, NPM (net profit margin), EPS, Tobin's Q	Mixed
Jiang & Yang (2015)	China	CSR: Reputation index (CASS) CFP: ROE, EPS	Mixed, Positive and no relationship

Lagged effects between CSR and CFP

The second issue of the CSR-CFP relationship is the lagged effects in both directions between CSR and CFP in China. Two views on these relationships can be tested: 1) prior CSR positively influences subsequent CFP. 2) Prior CFP positively influences subsequent CSR (Wang, et al., 2015). The slack resource theory proposes that better financial performance potentially results in the availability of slack resources that provide the opportunity for companies to invest in social activities, such as community relations, employee relations, or environment (Waddock & Graves, 1997). In contrast, firms that are in financial trouble may have little freedom to invest in CSR activities (Wang et. al, 2016). Godfrey et al. (2009), and Surroca

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et al. (2010) also provide support for the slack resources theory.

Table 2-3 summarizes four empirical studies that investigated the relationship between CSR and financial performance. The entries in the table are sorted by chronological order of publication year and were selected for the following reasons: Wong (2012), Hirigoyen & Poulain-Rehm (2014) contributed to the literatures on lagged effects in the relationship between CSR and CFP while Palmer (2012) and Jitaree (2015) contributed to the literature on the potential lagged effects in the relationship between CSR and CFP in the future. Orlitzky et al., (2003), Margolis et al., (2009) and Wang et al., (2016) provided meta-analyses on this lagged influence between CSR and CFP.

Table 2-3

Empirical Studies of lagged effects in Relationship between CSR and CFP

Authors/ Date	Country	Lagged Effects	Lag time	Results
Karagiorgos （2010）	Greece	Lag： Yes	One year	Better CSP leads to higher financial performance
Aras, Aybars & Furtuna (2010)	Turkey	Lag: Yes	Two years	Better financial performance results in improved CSR, improved CSR leads to better financial performance
Wong (2012)	China	Lag: Yes	One year	Being socially responsible can increase the financial performance of the current year and have significant effects on their financial performance of the next year.
Palmer (2012)	United States	Lag: Yes (suggestion)	One year	CSP and CFP have a significantly positive Relationship in both directions.

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Hirigoyen & Poulain-Rehm (2014)	The United States, Europe and the Asia-Pacific region	Lag: Yes	One year	Greater social responsibility does not result in better financial performance, but also that financial performance negatively impacts corporate social responsibility
Jitaree (2015)	Thailand	Lag: Yes (suggestion)	One year	Positive causal relationship between CSR and ROA (return on assets), NPM (net profit margin), and a negative causal relationship between CSR and EPS (earning per share), TBQ (Tobin's q)

Hirigoyen and Poulain-Rehm (2015) examined the lagged relationship between the various dimensions of CSR and CFP by using a sample of 329 listed companies in three geographical areas (the United States, Europe and the Asia-Pacific region) for the year 2009 and 2010, with the result that greater social responsibility does not result in better financial performance, and also that financial performance negatively impacts corporate social responsibility. Wong (2012), found that CSR behavior improves firm performance in the current year and in subsequent years in China. Jitaree (2015) explored the relationship in Thailand through listed Thai companies with varied results, finding that there is a positive relationship between CSR and ROA (return on assets), NPM (net profit margin), a negative relationship between CSR and EPS (earning per share), TBQ (Tobin's q) and vice versa. Palmer (2012) has explored the relationship between CSR and CFP in United States with 333 firms included in the S&P 500 for the years 2001-2005 and found that there was a significant positive relationship in both directions. Most previous studies have chosen one year as the lag time to test the relationship between CSR and CFP (Palmer, 2012; Hirigoyen & Poulain-Rehm, 2014; Jitaree,

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2015; Wong, 2012). None of them have chosen more than one year as time lag to study the relationship between CSR and CFP. Palmer (2012) suggested the future research could examine lags other than 1-year, to describe how long it takes for firms to reap the full benefits from CSR investment on average. Jitaree (2015) also provided a future research direction about applying a longitudinal method by using one more year's data for high reliability of the results.

In addition to this, a meta-analysis from Wang et al. (2016), who estimated the overall effect size of the CSR and CFP relationship with 119 effect sizes from 42 studies, showed that the CSR-CFP relationship is positive and significant, and subsequent financial performance is associated with prior social responsibility but not in the reverse direction. In review, three views about this relationship has been tested: prior CSR is positively associated with subsequent CFP, prior CFP is positively associated with subsequent CSR, and for both constructs. Wang et al. (2016) concluded that better CSR may lead to improved financial performance and better financial performance may lead to improved CSR.

Similarly, Orlitzky et al. (2003), in their meta-analysis of 52 studies on the relationship between CSR and CFP, found prior CFP is directly associated with subsequent CSR while prior high levels of CFP may provide slack resources to CSR. This study reported that both the prior CFP and subsequent CFP subsets yielded observed correlations of .15, and corrected correlations of .29 with CSR. Concurrent studies yielded observed and corrected correlations with CFP of .22 and .44, which suggested a virtuous cycle with quick cycle times or concurrent bidirectionality. As mentioned before, the meta-analysis by Margolis et al. (2009) highlighted the timing of this relationship in their meta-analyses. The measure of CSR precedes the measure of CFP, the measure of CFP precedes the measure of CSR or concurrently. Alexander and Buchholz (1978) has been explained as an example which measured CSR in 1971-1972 and CFP in 1970-1074.

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Margolis et al. (2009) also mentioned that the lagged influence must be theoretically articulated and empirically assessed since in this meta-analysis, only 37% (92 of 251) of effects about measures of CSR preceded measures of CFP, which is relative low.

Conclusion

To summarize, prior meta-analyses tend to support the positive relationship between CSR and CFP (Wang et al, 2016; Margolis and Walsh, 2003), but other recently individual studies pointed out the mixed, negative or no relationship between CSR and CFP (Lech, 2013; Elouidani & Zoubir, 2015; Jitaree, 2015). Some meta-analysis mentioned the different results of this relationship in developed countries and developing countries (Wang et al. 2016). These findings provide a research gap for the current study to investigate the relationship between CSR and CFP in China. Wang et al. (2016) found various results from different measurements of CSR from reviewing 119 studies published from 2003 to 2012 on the relationship between CSR and CFP, which means the diverse results from literature may be attributed to differing measurements of CSR.

The common measurements of CSR have been reviewed in meta-analysis and other individual studies in table 2-2, including content analysis and reputation index. Content analysis uses the reporting of CSR activities in various firm publications, especially in the annual report (Cochran & Wood, 1984; Uadiale & Fagbemi, 2012). However, there are some drawbacks to using content analysis to measure CSR, including that the choice of variables is subjective. Also, content analysis is more about what firms say they are doing, which may be different from what they actually are doing. Reputation index was widely used to measure CSR in the literature. There are two reputation indices on CSR in China: CASS and RKS. Since CASS has been used to measure CSR in prior studies (Jiang &Yang, 2015; Zhang, 2016), there is a research gap to

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investigate the relationship between CSR and CFP by RKS to measure CSR. That is the reason for this current research to test the hypothesis 7 about the correlation between CASS and RKS. Lagged influence of CSR on CFP has also been mentioned from prior studies, on both meta-analysis and individual studies (Wang et.al, 2016; Orlitzky et al, 2003; Hirigoyen & Poulain-Rehm, 2014; Wong, 2012). Most of them chose a one-year lag and only few of them chose more than one year to test the influence of CSR on CFP (Karagiorgos, 2010; Aras et.al, 2010). Palmer (2012) and Jitaree (2015) recommended future research about lag influence to examine the relationship between CSR and CFP. The literature emphasized the importance of lag influence of CSR on CFP and contributed the direct relationship between prior CSR and subsequent CFP, prior CFP and subsequent, as well as the timing to test the relationship (Wang et.al, 2016; Orlitzky et al, 2003, Margolis et al, 2009). However, few studies talked about this lag influence of CSR on CFP in China. Wong (2012) investigated the lag influence between CSR and CFP in China for a one-year period. These provide an opportunity for current research to examine the lag influence of CSR on CFP in China for a two-year period.

Based on the literature review above, this dissertation tests the hypotheses as follows:

Null Hypothesis 1: There is no relationship between total RKS CSR rating and ROA controlling for firm size in the same year, 2015.

Alternative Hypothesis 1: There is a relationship between total RKS CSR rating scores and ROA controlling for firm size in the same year, 2015.

Null Hypothesis 2: There is no relationship between total RKS CSR rating and EPS controlling for firm size in the same year, 2015.

Alternative Hypothesis 2: There is a relationship between total RKS CSR rating scores

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and EPS controlling for firm size in the same year, 2015.

Null Hypothesis 3: There is no relationship between prior CSR in year 2014 and subsequent ROA in year 2016 controlling for firm size.

Alternative Hypothesis 3: There is a relationship between prior CSR in year 2014 and subsequent ROA in year 2016 controlling for firm size.

Null Hypothesis 4: There is no relationship between prior ROA in year 2014 and subsequent CSR in year 2016 controlling for firm size.

Alternative Hypothesis 4: There is a relationship between prior ROA in year 2014 and subsequent CSR in year 2016 controlling for firm size.

Null Hypothesis 5: There is no relationship between prior CSR in year 2014 and subsequent EPS in year 2016 controlling for firm size.

Alternative Hypothesis 5: There is a relationship between prior CSR in year 2014 and subsequent EPS in year 2016 controlling for firm size.

Null Hypothesis 6: There is no relationship between prior EPS in year 2014 and subsequent CSR in year 2016 controlling for firm size.

Alternative Hypothesis 6: There is a relationship between prior EPS in year 2014 and subsequent CSR in year 2016 controlling for firm size.

Null Hypothesis 7: There is no correlation between RKS and CASS in the same year, 2015

Alternative Hypothesis 7: There is a positive correlation between RKS and CASS in the same year, 2015

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Chapter III: Methodology

Introduction

This chapter is comprised of sections which present the sample, measures, data collection, and data analysis. Given the limitations of the prior research, the design of the present study provides an opportunity to investigate the relationship between CSR and CFP using a different measure of CSR in China. Also, the present study includes companies ranked by RKS from 2014-2016 to examine whether there is time lag existing of prior CSR on subsequent CFP. Data analysis is described for each of the three research questions:

1. Is there a significant relationship between total CSR ratings using the RKS reputation index and financial performance?
2. Does a relationship exist between prior CSR in 2014 and subsequent CFP in 2016, and between prior CFP in 2014 and subsequent CSR in 2016?
3. To what extent do total CSR ratings from two reputation indexes in China (RKS and CASS) produce consistent reputation ratings?

Sample

In order to achieve a more significant inquiry and to reduce bias in the results, the sample companies were based on the following identification:

1. The firms have been listed on the Shanghai and Shenzhen stock exchange market for more than one year.
2. The firms must be ranked and evaluated by the RKS database.

The sample of companies for each of the three research questions is the total population

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of 608 Chinese companies meeting both criteria. For each company, financial data was retrieved from the CSMAR database, which is available for the years January 2014 to December 2016.

Measures

Measuring CSR. This study used total CSR rating scores from the RKS reputation index. RKS is the authoritative ranking organization of Chinese CSR, responsible for providing objective ranking information to social responsible investors, responsible consumers and the public. A total CSR rating score from RKS includes environment, social responsibility, and governance (ESG) ratings. RKS scoring has four dimensions: Macrocosm, Content, Technique, and Industry.

Measuring CFP. ROA (return on assets) and EPS (Earning per share) were used to measure a firm's CFP. Data on ROA and EPS were derived from the CSMAR database of audited financial statements of companies traded on the Shenzhen and Shanghai stock exchanges. ROA is an accounting indicator of how profitable a company is relative to its total assets and how efficiently the company converts its money into net income (McGuire et. Al., 1988; Waddock & Graves, 1997; Griffin and Mahon, 1997). ROA has frequently been used to measure CFP in prior studies of the relationship between CSR and CFP (Wong, 2012; Hirigoyen & Poulain-Rehn, 2014; Elouidani & Zoubir, 2015). EPS is a market indicator of the portion of a company's profit allocated to each outstanding share of common stock; it is a measure of how much profit a company has generated in market field. It can be calculated simply by dividing net income earned in a given reporting period (quarterly or annually) by the total number of shares outstanding during the same term. EPS has commonly been used as an indicator to measure CFP in previous studies to test the relationship between CSR and CFP (Moenna, 2014; Jiang & Yang, 2015).

Control variables. Some difference in CSR and CFP may result from firm size, so firm size was included as a control variable in this study (Mahoney & Roberts, 2007; Waddock &

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Graves, 1997). Researchers mentioned that large and profitable firms are more likely to disclose CSR activities with more onsite resources, and their shareholders are more interested in CSR activities (Wong, 2012; Moenna, 2014).

Data Collection

Chinese Rankings CSR ratings (RKS), SINA Corporation (SINA) and China Stock Market & Accounting Research (CSMAR) database are the main sources for this study's data. CSR data in this study were collected from RKS (Ranking CSR Ratings), which is a private third social responsible rating agency. All year's data reports are available on its official website. If needed, people could get the integrated annual report by paying for it. That is how data about CSR from 2014-2016 were collected. Additionally, CSR data in 2015 from CASS (Chinese Academy of Social Science) has been collected for research question three from the Blue Book of Corporate Social Responsibility ten years research report about Chinese enterprises social responsibility, which has the complete CSR scores for 300 Chinese listed companies. CASS only has 300 companies in its ranking.

Validity and Reliability

Validity. Construct validity refers to the degree to which inferences can legitimately be made from the operationalizations in the study to the theoretical constructs on which those operationalizations were based. Construct validity involves generalizing from the measures to the concept of the measures (Cook & Campbell, 1979). Therefore, it is important to examine how to operationalize the constructs used in this study to test the true effect of the treatment.

The dependent variables, ROA and EPS, are standardized by the CSMAR and SINA database and used as parameters for the measure of CFP. ROA has also been validated as a measure of companies' financial performance (Jiang & Li, 2008; Narcisa, 2016)

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The independent variable, CSR data, is standardized and provided by RKS database. However, since RKS is a private company and the registration is a voluntary process, companies may be motivated to register for variety of reasons. Therefore, it is possible that RKS registrations may not adequately represent the construct of the CSR measurement. To solve this problem, the total CSR ratings scores on the RKS database can be gauged by correlating its scores with CASS measures (Chatterji, Levine & Toffel, 2009). The result of Pearson correlations between CASS and RKS was .396, a moderate correlation, which provided evidence of validity of the measures of CSR in RKS.

Reliability. Financial performance, the dependent variable in this study, was collected from the third-party agency, CSMAR database. Sampled companies needed to provide complete financial data for a three-year period in order to be qualified for the study. Also, SINA Financial was used to check the financial data, so the reliability of the dependent variable is not an issue.

Data Analysis

Research Question 1. Is there a relationship between total CSR ratings using the RKS reputation index and financial performance?

Data was analyzed using SPSS 19. Linear sequential regression was employed to analyze the data on the relationship between the total CSR rating scores from RKS and each of the measures of financial performance (ROA, EPS) while controlling for firm size. A $p<.05$ level of significance was used to determine if the null hypotheses can be rejected.

Research Question 2. Does a relationship exist between prior CSR in 2014 and subsequent CFP in 2016, and between prior CFP in 2014 and subsequent CSR in 2016? Linear sequential regression analysis was used to investigate the hypotheses on the relationship between two variables. The data included CSR and CFP measures for the years 2014, 2015, and 2016.

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Research Question 3. To what extent do total CSR ratings from two reputation indexes in China (RKS and CASS) produce consistent reputation ratings?

This current study also tested the correlation between CASS (Chinese Academy of Social Science) and RKS (Ranking CSR ratings) database. Both of these measures purport to give a CSR rating to a firm, therefore it is vital to research to what extent there is agreement between these two ratings for the same Chinese firms. This correlation has not previously been researched and testing this correlation is a means of exploring the construct validity of these measures of CSR in Chinese companies. Correlation between RKS and CASS scores was computed for the year 2015 for all 300 companies which have been rated by both systems. The magnitude of the correlation coefficient indicates the strength of the association between RKS and CASS. If both systems are validly measuring the same construct – CSR – then there should be a higher correlation. The null hypotheses can be rejected if the r value of the correlation is >.10, at least a weak correlation (Cohen, 1988; Hemphill, 2003).

Conclusion

To test the current hypotheses, RKS database and CSMAR database was selected to represent CSR and financial performance (ROA and EPS), while firm size was used as the control variable. The sample size is 608 listed Chinese companies in RKS from 2014 to 2016. CSMAR database provides completed financial data each year on Chinese listed companies for investors and researchers in China, which is commonly accepted and authorized. Linear sequential regression was used to test hypotheses 1-6. A $p<.05$ level of significance was used to determine if the null hypotheses can be rejected.

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Chapter IV: Statistical Analysis of Data

Introduction

This chapter is organized in five sections. The first section focuses on the characteristics of the sample companies, including descriptive statistics. The second section focuses on the correlations between variables and reports the results of the correlation between CSR and ROA, EPS from 2014 to 2016. The third section reports the results from tests of statistical assumptions for the sequential regression analysis and linear regression model. The fourth section reports the results of the statistical analysis for the fourth hypotheses. The last section is a summary of this chapter.

Descriptive Statistics

Table 4-1 presents the descriptive statistics for each variable in this study. The final sample size was 608 Chinese companies, and there was no missing data on any of the variables. For CSR variables, RKS CSR ratings for the sample in 2015 had the highest mean of 43.45 and the widest range from 19.97 to 89.29 compared with the sample in 2014 and 2016. For the ROA variables, ROA in 2014 had the highest mean of 2.62, ranging from 28.29 to -10.5, while ROA in 2015 had the lowest mean of 2.06, ranging from 14.34 to -18.9. For the EPS variables, EPS in 2014 had the highest mean of .48, ranging from 4.93 to -2.28, while EPS in 2015 had the lowest mean of .39, ranging from 3.56 to -3.68.

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Table 4-1:

Descriptive Statistics (N=608)

Variable	Mean	Standard Deviation	Min.	Max.	Skewness	Kurtosis
RKS-CSR Scales						
CSR (2014) (Point)	40.85	12.54	19.70	88.84	1.50	2.27
CSR (2015) (Point)	43.45	12.39	19.97	89.29	1.21	1.27
CSR (2016) (Point)	43.28	12.5	20.62	87.04	1.05	0.98
Financial Performance						
Accounting Measure						
ROA (2014) (%)	2.62	3.09	-10.5	28.29	1.67	10.12
ROA (2015) (%)	2.06	3.32	-18.9	14.34	11.08	5.34
ROA (2016) (%)	2.34	7.66	-18.4	176.34	58.82	437.9
Market Measure						
EPS (2014) (%)	.48	.63	-2.28	4.93	1.99	10.44
EPS (2015) (%)	.39	.69	-3.68	3.56	.318	4.98
EPS (2016) (%)	.42	.59	-2.56	3.87	1.17	7.04
Control Variable						
Firm Size (2014) (%)	10.15	.76	8.49	13.31	1.13	2.02
Firm Size (2015) (%)	10.20	.76	8.82	13.35	1.17	2.00
Firm Size (2016) (%)	10.25	.77	8.34	13.38	1.11	1.94

Note. The three CSR variables were measured on a 0-100 scale from RKS. The value of 0 indicates the lowest level for CSR, and the value of 100 indicates the highest level for CSR. ROA and EPS are expressed as percentage in Chinese currency with 1 unit equalling 1 percentage point. Firm sizes are expressed using natural log of a firm's total assets in Chinese currency.

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As can be seen in Table 4-1, the values of kurtosis and skewness were inspected to identify potential violations of the normality assumption. For the CSR variables and firm size control variables from 2014-2016, the value of skewness did not differ markedly from that expected for a variable drawn from a normal distribution. This means the CSR data and firm size are approximately roughly distributed; it can be further examined from the histogram graph in the following sections.

Correlations between Model Variables

The correlation of univariate analysis is used to examine the correlation between CSR and ROA, EPS from 2014 to 2016 (Table 4-2). Each correlation section provides the values of the corresponding correlation tests, shown with Pearson's r in this table. Each row represents one variable in a given year, as does each column. The significance of this high correlation is that the correlation is due to chance factors instead of actual relation.

The results in Table 4-2 indicate that the CSR (2014) variable had a significant ($P< .01$) correlation with CSR (2015), (2016) and EPS (2014), (2015) and (2016) at the .01 significance level; but had no significant correlation with ROA (2014), ROA (2015), and ROA (2016). Besides, when financial performance variables ROA and EPS are treated as the dependent variable, CSR (2014), CSR (2015) and CSR (2016) are considered as the independent variable. The results showed that ROA (2014) had a significant ($P< .01$) correlation with ROA (2015) and ROA (2016) at the .01 significance level; but had no significant correlation with CSR (2014), CSR (2015), and CSR (2016). However, the three-year market measures of EPS from 2014-2016 all had a significant ($p<.01$) correlation with ROA (2014-2016) and CSR (2014-2016). Firm size had a significant ($p< .01$) correlation with CSR (2014-2016), EPS (2014-2016) and ROA (2014 and 2015).

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Table 4-2:

Correlation between study variables (N=608)

	CSR (2014)	CSR (2014)	CSR (2014)	ROA (2014)	ROA (2015)	ROA (2016)	EPS (2014)	EPS (2015)	EPS (2016)	Firm size (2014)	Firm size (2015)	Firm size (2016)
CSR (2014)	1	.94**	.91**	-.042	.001	.002	.24**	.25**	.24**	.58**	.58**	.57**
CSR (2015)	.94**	1	.96**	-.022	.018	-.023	.25**	.25**	.22**	.57**	.56**	.56**
CSR (2016)	.91**	.96**	1	-.026	.010	-.020	.24**	.24**	.22	.55**	.55**	.55**
ROA (2014)	-.04	-.022	-.026	1	.783**	.179**	.58**	.44**	.40**	-.16**	-.13**	-.08**
ROA (2015)	.001	.018	.010	.78**	1	.077	.50**	.65**	.43**	-.11**	-.08**	-.03**
ROA (2016)	.002	-.023	-.020	.17**	.077	1	.09*	.059	.19**	-.06	-.06	-.12**
EPS (2014)	.247**	.25**	.24**	.58**	.50**	.090*	1	.74**	.75**	.32**	.34**	.36**
EPS (2015)	.25**	.25**	.245**	.44**	.65**	.059	.74**	1	.73**	.29**	.33**	.36**
EPS (2016)	.24**	.22**	.22**	.40**	.43**	.19**	.75**	.73**	1	.28**	.30**	.33**
Firm size (2014)	.58**	.57**	.55**	-.16**	-.11**	-.061	.32**	.29**	.28**	1	.98**	.97**
Firm size	.58**	.56**	.55**	-.13**	-.08*	-.066	.34**	.33**	.30**	.98**	1	.98**

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(2015)												
Firm size (2016)	.57**	.56**	.55**	-.08*	-.03	-.12**	.36**	.36**	.33**	.97**	.98**	1

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Tests of Statistical Assumptions

Statistical assumptions have been evaluated to assure the validity of the statistical analyses, including: linear relationships between the independent and dependent variables, normally distributed residuals from the regression models, homogeneity of variance, independence of observations and lack of multicollinearity.

Linearity

Linear relationships between the independent and dependent variables is the first assumption in this study, which can be examined in the scatter plots of the ROA and EPS versus RKS-CSR (Figure 4-1 to Figure 4-3), The loess curves on the scatter plots indicate that there are no clear curvature in the relationships between the independent and dependent variables, so the linearity assumption is satisfied.

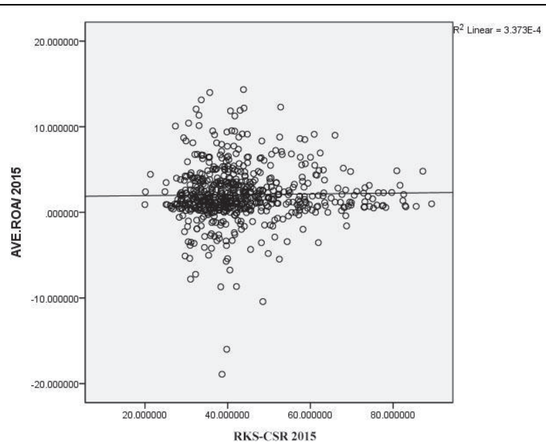
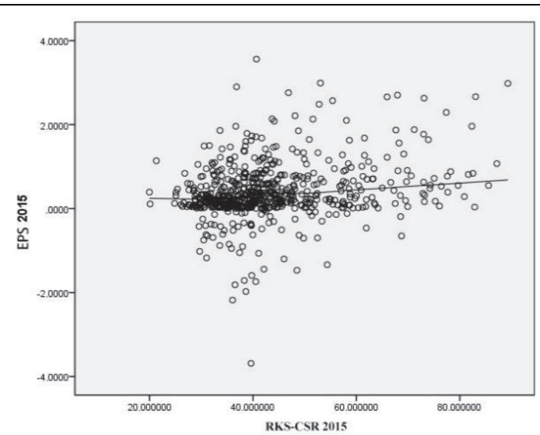
ROA VS RKS-CSR in 2015	EPS VS RKS-CSR in 2015
	

Figure 4-1. Scatter plot for ROA and EPS versus RKS-CSR in 2015

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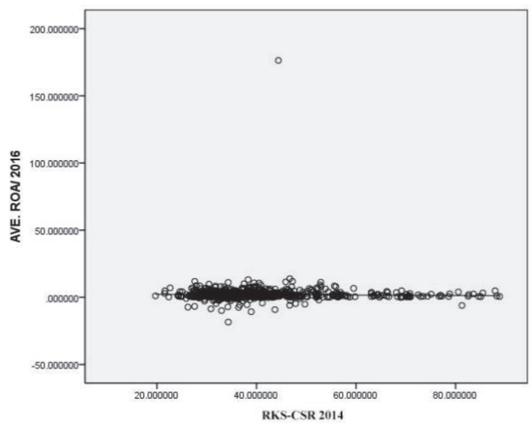
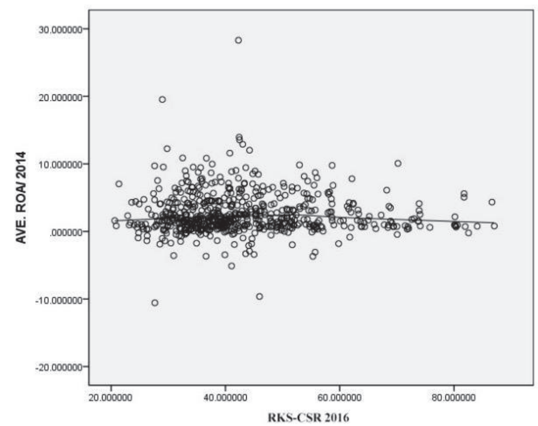
ROA (2016) VS RKS-CSR (2014)	ROA (2014) VS RKS-CSR (2016)
	

Figure 4-2. Scatter plot ROA (2016, 2014) versus RKS-CSR (2014, 2016)

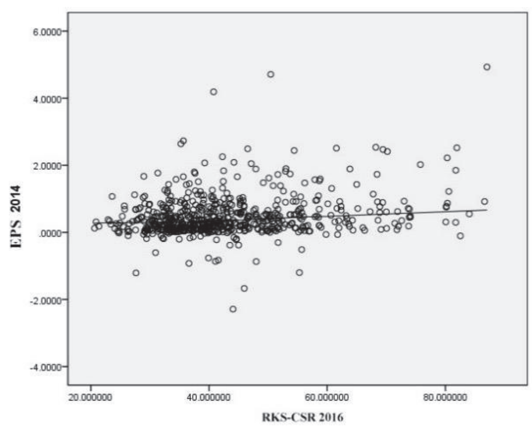
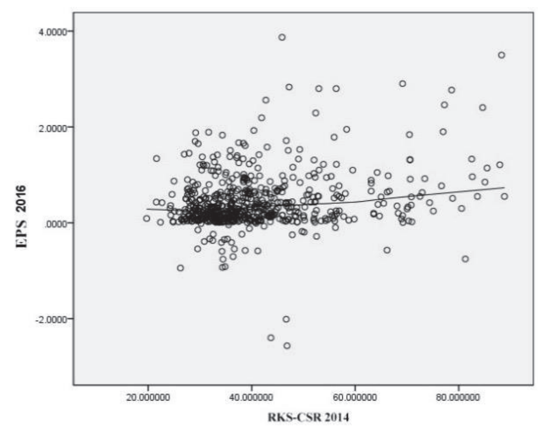
EPS (2016) VS RKS-CSR (2014)	EPS (2014) VS RKS-CSR (2016)
	

Figure 4-3. Scatter plot for EPS (2016, 2014) versus RKS-CSR (2014, 2016)

Normally distributed CFP data

Second, the normal population assumption supposes that the chosen data is normally distributed symmetrically, and histogram graph of residuals is used to explain it. The residual scatter plot indicates whether relationships are linear and whether the variance of the residuals is

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constant across different levels of the explanatory variables.

To test the first two hypotheses, whether there is a relationship between the total CSR rating scores from RKS and ROA, EPS in 2015, the residual scatter plot for ROA, EPS and CSR in 2015 showed that there is no a significant pattern or evident trends, so the explanatory variables are valuable to predict the response variable (see Figure 4-4 and 4-5). To test research hypotheses three to six, whether there is a significant relationship between prior CSR in year 2014 and subsequent ROA and EPS in year 2016, the residual scatter plot for ROA, EPS in 2016 and CSR in 2014 must be no a significant pattern or evident trends (see Figure 4-6 and 4-7).

Unstandardized Residual of ROA and RKS-CSR in 2015

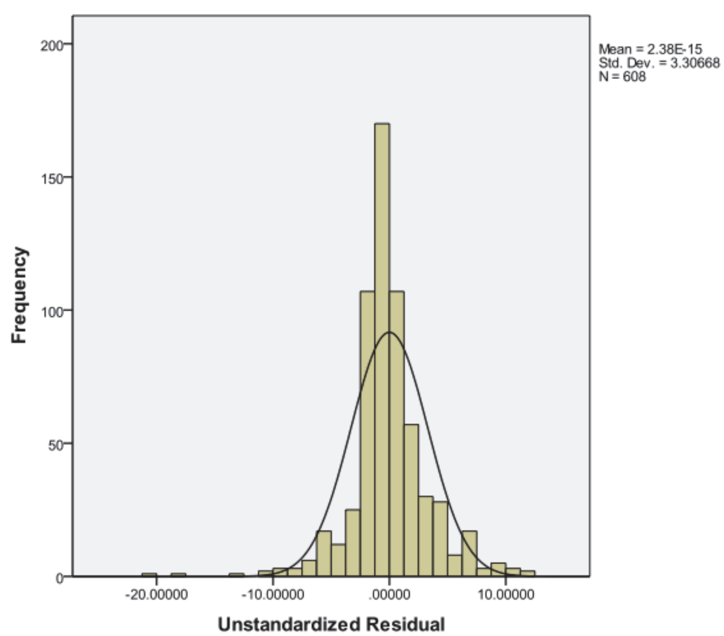

Figure 4-4. Histogram for residuals of ROA and RKS-CSR in 2015

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Unstandardized Residual of EPS and RKS-CSR in 2015

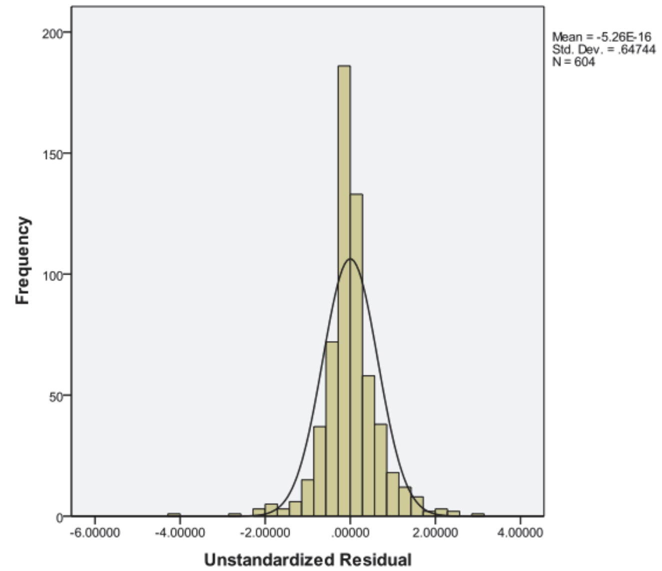

Figure 4-5. Histogram for residuals of EPS and RKS-CSR in 2015

Unstandardized Residual of ROA in 2016 and RKS-CSR in 2014

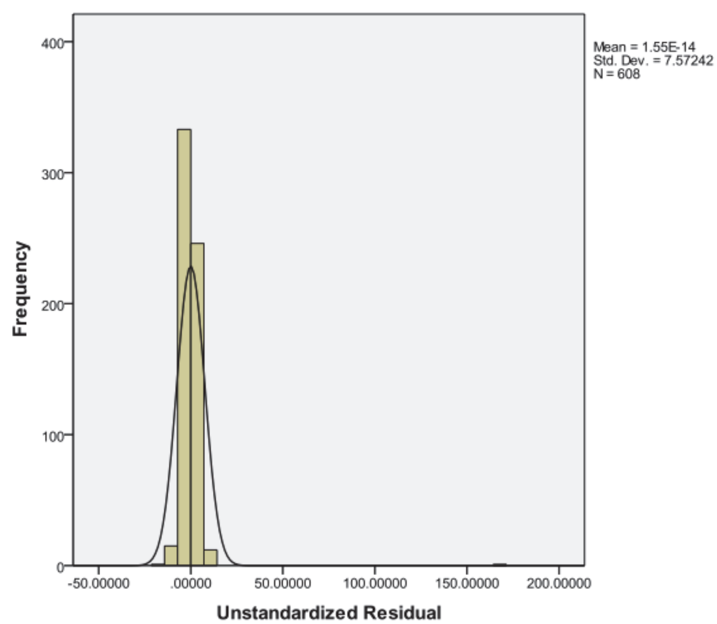

Figure 4-6. Histogram for residuals of ROA in 2016 and RKS-CSR in 2014

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Unstandardized Residual of EPS in 2016 and RKS-CSR in 2014

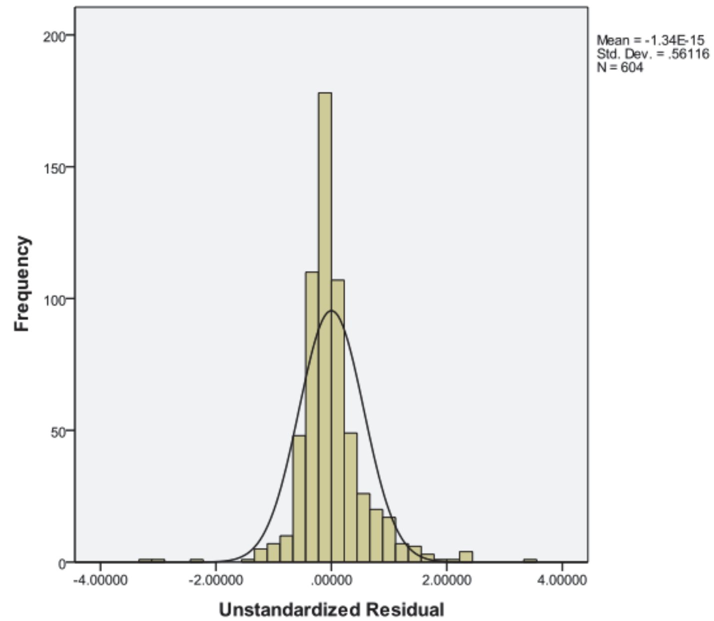

Figure 4-7. Histogram for residuals of EPS in 2016 and RKS-CSR in 2014.

Figure 4-4 to Figure 4-7 showed all the histograms for residuals, where the histogram graphs of all residuals are unimodal, nearly symmetric; only several outliers appear in the histogram but should not influence the whole distribution curve. Since this study included a large enough sample size (608), several outliers should not influence the whole distribution curve, so the regression model is appropriate.

Kurtosis and skewness have been used to find the potential violations of the normality assumptions with the reasonable range for skewness is +1 to -1 and +2 to -2 for kurtosis. In this model, the skewness was .099 and .198. Both of them are consistent with a normal distribution of the residuals from the regression model (see Table 4-3)

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Table 4-3

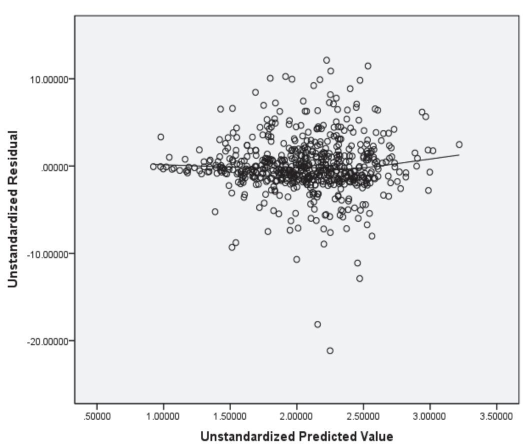
Skewness and Kurtosis of the Residuals

	N	Skewness		Kurtosis	
		Statistic	Std.Error	Statistic	Std.Error
Residual	608	-.279	.099	5.33	.198

Homogeneity of Variance (Equal Variance Assumption)

The homogeneity assumption assumes that the dispersion of response variables around the regression line is fairly constant for all values of explanatory variables, which is satisfied in this regression model (see Figure 4-8, 4-9).

Unstandardized Predicted value VS Residual of ROA and RKS-CSR in 2015	Unstandardized Predicted value VS Residual of EPS and RKS-CSR in 2015



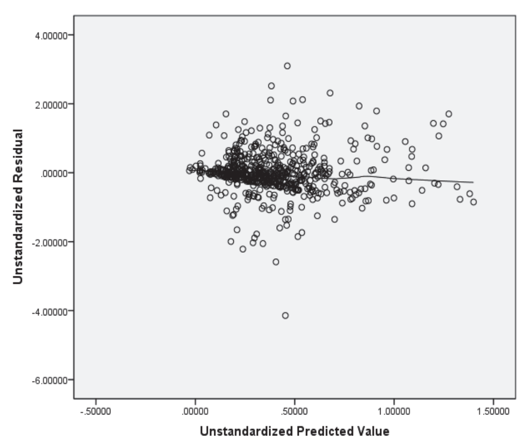


Figure 4-8 Scatter plot for predicted value and residuals of CFP and RKS-CSR in 2015

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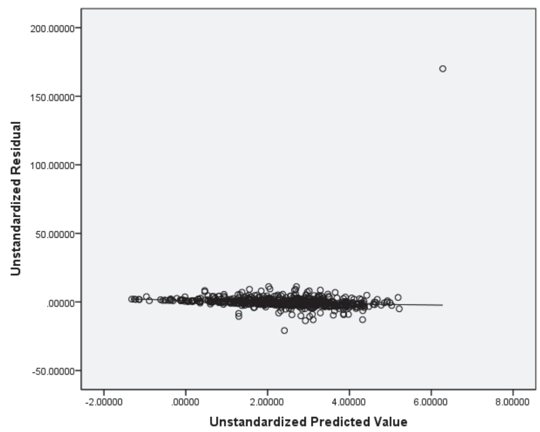
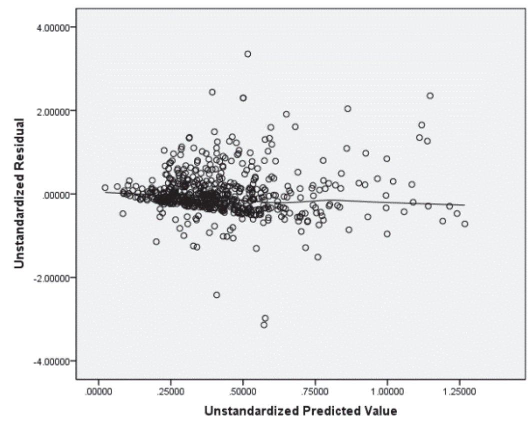
Unstandardized Predicted value VS Residual of ROA in 2016 and RKS-CSR in 2014	Unstandardized Predicted value VS Residual of EPS in 2016 and RKS-CSR in 2014
	

Figure 4-9 Scatter plot for predicted value and residuals of CFP (2016) and RKS-CSR (2014)

Statistical independence of the errors

This research assumes that the independence assumption is satisfied because there is no reason to think that the ROA or EPS from one company influences the ROA or EPS of another company.

Lack of Multicollinearity

Multicollinearity can be tested by variance inflation factor (VIF). If the value of VIF is less than 10, this indicates an absence of Multicollinearity. As can be seen in Table 4-4, all the values of VIF were less than 10, so the lack of multicollinearity assumption was satisfied.

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Table 4-4

Collinearity Diagnostics for all independent variables

CSR	Tolerance	VIF
Research Hypothesis One *RKS CSR 2015 vs ROA 2015* Independent variables		
CSR (2015)	.676	1.479
Research Hypothesis Two *RKS CSR 2015 vs EPS 2015* Independent variables		
CSR (2015)	.678	1.474
Research Hypothesis Three *RKS CSR 2014 vs ROA2016* Independent variables		
CSR (2014)	.666	1.501
Research Hypothesis Four *ROA 2014 vs RKS CSR 2016* Independent variables		
ROA (2014)	.974	1.026
Research Hypothesis Five *RKS CSR 2014 vs EPS 2016* Independent variables		
CSR (2014)	.662	1.511
Research Hypothesis Six *EPS 2014 vs RKS CSR 2016* Independent variables		
EPS (2014)	.894	1.118

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Testing the Research Hypotheses

Research Hypothesis One

Null Hypothesis 1: *There is no relationship between total RKS CSR rating and ROA controlling for firm size in the same year, 2015.*

Hypothesis 1: *There is a relationship between total RKS CSR rating scores and ROA controlling for firm size in the same year, 2015.*

Linear sequential regression analysis was conducted to identity if a statistically significant relationship existed between CSR and ROA in 2015. The first hypothesis examined the relationship between the total CSR rating scores from RKS and ROA. The analysis was performed in two stages. First, a regression model was constructed which included firm size in 2015 to control for the confounding effect of the relationship, as well as a constant term. The CSR (2015) variable was entered at stage two.

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Table 4-5:

Results of Sequential Regression Analysis Testing for CSR 2015 predicting ROA 2015

	Unstandardized coefficients		Standardized coefficients		
Model Term	b	Std. Error	Beta	t	P-value
<u>Stage 1</u>					
(Constant)	5.743	1.793		3.203	.001
Firm size (2015)	-.360	.175	-.083	-2.056	.040
<u>Stage 2</u>					
(Constant)	7.052	1.907		3.698	< .001
Firm size (2015)	-.600	.213	-.139	-2.821	.005
RKS-CSR (2015)	.026	.013	.097	1.980	.048

<u>Stage 1:</u>

R^2 = .007, F (1, 606) =4.227, p = .040.

<u>Stage 2:</u>

R^2 = .013, F (1, 605) = 4.083, p = .017.

<u>Stage 2 vs Stage 1:</u>

ΔR^2 =.006, ΔF=3.919, P= .048

The results of the two stages of the regression analysis for the first hypothesis are shown in Table 4-5. When firm size was included as the only predictor variable (without including RKS-CSR-2015), the regression model explained 0.7% of the variance in ROA (2015) (R^2 = .007, p =.040). When the CSR (2015) was added in stage two of the regression model, the

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percentage of variance in ROA (2015) explained by the regression model was 1.3% (R^2 = .013, *p* = .017). Hence the firm size accounted for an additional 0.6% of variance in the dependent variable (ΔR^2 =.006), and this change in R^2 was statistically significant in the regression model from stage 1 to stage 2 (ΔF= 3.919, *p* = .048). Therefore, we reject the null hypothesis one and conclude that there is a statistically significant relationship between CSR and ROA in 2015. Moreover, as can be seen in the model, the unstandardized regression coefficient (B) for CSR (2015) is .026 (t(605)= 1.980, *p*= .048), meaning that every additional point of CSR in 2015 will cause an extra 2.6% increase on ROA in 2015.

Research Hypothesis Two

Null Hypothesis 2: *There is no relationship between total RKS CSR rating and EPS controlling for firm size in the same year, 2015.*

Hypothesis 2: *There is a relationship between total RKS CSR rating scores and EPS controlling for firm size in the same year, 2015.*

Linear sequential regression analysis was conducted to identity if a statistically significant relationship existed between CSR and EPS in 2015. The second hypothesis examined the relationship between the total CSR rating scores from RKS and EPS in 2015. The analysis was performed in two stages. First, a regression model was constructed which included firm size in 2015 to control for the confounding effect regarding the relationship, as well as a constant term. The CSR (2015) variable was entered at stage two.

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Table 4-6:

Results of Sequential Regression Analysis Testing for CSR 2015 predicting EPS 2015

Model Term	Unstandardized coefficients b	Unstandardized coefficients Std. Error	Standardized coefficients Beta	t	P-value
Stage 1					
(Constant)	-2.704	.352		-7.678	< .001
Firm size (2015)	.304	.034	.339	8.832	< .001
Stage 2					
(Constant)	-2.432	.374		-6.503	< .001
Firm size (2015)	.254	.042	.283	6.091	< .001
RKS-CSR (2015)	.005	.003	.098	2.121	.034

Stage 1:

R^2 = .115, F (1, 602) =78.008, p < .001.

Stage 2:

R^2 = .121, F (1, 601) = 41.481, p < .001.

Stage 2 vs Stage 1:

ΔR^2 =.007, *ΔF=4.501, p=.034*

The results of the two stages of the regression analysis for the second hypothesis are shown in Table 4-6. When the firm size was included as the only predictor variable (without including RKS-CSR-2015), the regression model explained 11.5% of the variance in EPS (2015) (R^2 = .115, p < .001). When the CSR (2015) was added in stage two of the regression model, the

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percentage of variance in EPS (2015) explained by the regression model was 12.1% (R^2 = .121, p < .001). Hence the firm size accounted for an additional 0.7% of variance in the dependent variable (ΔR^2 =.007), and this change in R^2 was statistically significant in the regression model from stage 1 to stage 2 (ΔF=4.501, p = .034).

Therefore, we reject the null hypothesis two and conclude that there is a statistically significant relationship between CSR and EPS in 2015. Moreover, as can be seen in the model, the unstandardized regression coefficient (B) for CSR (2015) is .005 ($t(601)$= 2.121, p= .034), meaning that for every additional point of CSR in 2015 will cause an extra 0.5% increase on EPS in 2015.

Research Hypothesis Three

Null Hypothesis 3: *There is no relationship between prior CSR in year 2014 and subsequent ROA in year 2016 controlling for firm size.*

Hypothesis 3: *There is a relationship between prior CSR in year 2014 and subsequent ROA in year 2016 controlling for firm size.*

Linear sequential regression analysis was conducted to identity if CSR in 2014 had a statistically significant lag effect on ROA in 2016, controlling for firm size. The third hypothesis examined the relationship between prior CSR in year 2014 and subsequent ROA in year 2016, controlling for firm size. The analysis was performed in two stages. First, a regression model was constructed which included firm size in 2016 to control for the confounding effect regarding the relationship, as well as a constant term. The CSR (2014) variable was entered at stage two.

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Table 4-7:

Results of Sequential Regression Analysis Testing for CSR 2014 predicting ROA 2016

Model Term	Unstandardized coefficients b	Std. Error	Standardized coefficients Beta	t	P-value
Stage 1					
(Constant)	15.340	4.090		3.750	< .001
Firm size (2014)	-1.267	.398	-.128	-3.186	.002
Stage 2					
(Constant)	19.191	4.396		4.366	< .001
Firm size (2014)	-1.923	.485	-.195	-3.961	< .001
RKS-CSR (2014)	.070	.030	.115	2.338	.020

Stage 1:

R^2 = .016, F (1, 606) =10.150, p = .002.

Stage 2:

R^2 = .025, F (1, 605) = 7.846, p < .001.

Stage 2 vs Stage 1:

ΔR^2 =.009, ΔF=5.467, p= .020

The results of the two stages of the regression analysis for the third hypothesis are shown in Table 4-7. When the firm size (2016) was included as the only predictor variable (without including RKS-CSR-2014), the regression model explained 1.6% of the variance in ROA (2016) (R^2 = .016, p = .002). When the CSR (2014) was added in stage two of the regression model, the

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percentage of variance in ROA (2016) explained by the regression model was 2.5% (R^2 = .025, p < .001). Hence the firm size accounted for an additional 0.9% of variance in the dependent variable (ΔR^2 =.009), and this change in R^2 was statistically significant in the regression model from stage 1 to stage 2. (*ΔF=5.467, p* = .020).

Therefore, we conclude that there is a significant relationship between prior CSR in year 2014 and subsequent ROA in year 2016, controlling for firm size. Moreover, as can be seen in the model, the unstandardized regression coefficient (B) for CSR (2014) is .070 (t(605)= 2.338, p= .020), meaning that for every additional point of CSR in 2014 will cause an extra 7% increase on ROA in 2016.

Research Hypothesis Four

Null Hypothesis 4: *There is no relationship between prior ROA in year 2014 and subsequent CSR in year 2016 controlling for firm size.*

Hypothesis 4: *There is a relationship between prior ROA in year 2014 and subsequent CSR in year 2016 controlling for firm size.*

Linear sequential regression analysis was conducted to identity if ROA in 2014 had a statistically significant lag effect on CSR in 2016 controlling for firm size in 2014. The fourth hypothesis examined the relationship between prior ROA in year 2014 and subsequent CSR in year 2016 controlling for firm size. The analysis was performed in two stages. First, a regression model was constructed which included firm size in 2014 to control for the confounding effect regarding the relationship, as well as a constant term. The ROA (2014) variable was entered at stage two.

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Table 4-8:

Results of Sequential Regression Analysis Testing for ROA 2014 predicting CSR 2016

Model Term	Unstandardized coefficients b	Unstandardized coefficients Std. Error	Standardized coefficients Beta	t	P-value
Stage 1					
(Constant)	48.772	5.580		-8.741	< .001
Firm size (2014)	9.069	.548	.558	16.547	< .001
Stage 2					
(Constant)	51.252	5.709		-8.978	< .001
Firm size (2014)	9.243	.554	.569	16.686	< .001
ROA (2014)	.270	.138	.067	1.962	.050

Stage 1:

R^2 = .312, F (1, 606) =273.819, p < .001.

Stage 2:

R^2 = .316, F (1, 605) = 139.479, p < .001.

Stage 2 vs Stage 1:

ΔR^2 =.004, $\Delta F=3.850$, $p= .050$

The results of the two stages of the regression analysis for the fourth hypothesis are shown in Table 4-8. When firm size (2014) was included as the only predictor variables (without including ROA-2014), the regression model explained 31.2% of the variance in CSR (2016) (R^2 = .312, p < .001). When the ROA (2014) was added in stage two of the regression model, the

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percentage of variance in CSR (2016) explained by the regression model was 31.6% (R^2 = .316, p < .001). Hence, the firm size accounted for an additional 0.4% of variance in the dependent variable (ΔR^2 =.004), and this change in R^2 was statistically significant in the regression model from stage 1 to stage 2 (*ΔF=3.850, p* = .050).

Therefore, we conclude that there is a significant relationship between prior ROA in year 2014 and subsequent CSR in year 2016, controlling for firm size. Moreover, as can be seen in the model, the unstandardized regression coefficient (B) for ROA (2014) is .270 (t(605)= 1.962, p= .050), meaning that for every additional percentage of ROA in 2014 will cause an extra .27 point increase on CSR in 2016.

Research Hypothesis Five

Null Hypothesis 5: *There is no relationship between prior CSR in year 2014 and subsequent EPS in year 2016 controlling for firm size.*

Hypothesis 5: *There is a relationship between prior CSR in year 2014 and subsequent EPS in year 2016 controlling for firm size.*

Linear sequential regression analysis was conducted to identity if CSR in 2014 had a statistically significant lag effect on EPS in 2016, controlling for firm size in 2014. The fifth hypothesis examined the relationship between prior *CSR* in year 2014 and subsequent EPS in year 2016, controlling for firm size in 2014. The analysis was performed in two stages. First, a regression model was constructed which included firm size in 2014 to control for the confounding effect regarding the relationship, as well as a constant term. The CSR (2014) variable was entered at stage two.

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Table 4-9:

Results of Linear Sequential Regression Analysis for CSR 2014 predicting EPS 2016

Model Term	Unstandardized coefficients b	Unstandardized coefficients Std. Error	Standardized coefficients Beta	t	P-value
Stage 1					
(Constant)	-1.80	.309		-5.864	< .001
Firm size (2014)	.220	.030	.284	7.265	< .001
Stage 2					
(Constant)	-1.499	.332		-4.511	< .001
Firm size (2014)	.167	.037	.215	4.498	< .001
RKS-CSR (2014)	.006	.002	.118	2.474	.014

Stage 1:

R^2 = .081, F (1, 601) =17.282, p < .001.

Stage 2:

R^2 = .090, F (1, 600) = 9.634, p < .001.

Stage 2 vs Stage 1:

ΔR^2 =.009, ΔF=6.122, p= .014

The results of the two stages of the regression analysis for the fifth hypothesis are shown in Table 4-9. When firm size (2014) was included as the only predictor variable (without including RKS-CSR-2014), the regression model explained 8.1% of the variance in EPS (2016)

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(R^2 = .081, $p < .001$). When the CSR (2014) was added in stage two of the regression model, the percentage of variance in EPS (2016) explained by the regression model was 9.0% (R^2 = .090, $p < .001$). Hence the firm size accounted for an additional 0.9% of variance in the dependent variable (ΔR^2 =.009), and this change in R^2 was statistically significant in the regression model from stage 1 to stage 2 (*ΔF=6.122,* p = .014).

Therefore, we conclude that there is a significant relationship between prior CSR in year 2014 and subsequent EPS in year 2016, controlling for firm size in 2014. Moreover, as can be seen in the model, the unstandardized regression coefficient (B) for CSR (2014) is .009 (t(600)=2.47, p=.014), meaning every additional point of CSR in 2014 will cause an extra 0.9% increase on EPS in 2016.

Research Hypothesis Six

Null Hypothesis 6: *There is no relationship between prior EPS in year 2014 and subsequent CSR in year 2016 controlling for firm size.*

Hypothesis 6: *There is a relationship between prior EPS in year 2014 and subsequent CSR in year 2016 controlling for firm size.*

The sixth hypothesis examined the relationship between prior *EPS* in year 2014 and subsequent CSR in year 2016. Linear sequential regression analysis was conducted to identity if EPS in 2014 had a statistically significant lag effect on CSR in 2016, controlling for firm size in 2014. The analysis was performed in two stages. First, a regression model was constructed which included firm size in 2014 to control for the confounding effect regarding the relationship, as well as a constant term. The EPS (2014) variable was entered at stage two.

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Table 4-10:

Results of Linear Sequential Regression Analysis for EPS 2014 predicting CSR 2016

	Unstandardized coefficients		Standardized coefficients		
Model Term	b	Std. Error	Beta	t	P-value
Stage 1					
(Constant)	-48.203	5.602		-8.605	< .001
Firm size (2014)	9.019	.550	.556	16.399	< .001
Stage 2					
(Constant)	-45.182	5.806		-7.782	< .001
Firm size (2014)	8.656	.580	.534	14.920	< .001
EPS (2014)	1.356	.705	.069	1.923	.055

Stage 1:

R^2 = .309, F (1, 601) =268.937, $p < .001$.

Stage 2:

R^2 = .313, F (1, 600) = 136.922, $p < .001$.

Stage 2 vs Stage 1:

ΔR^2 =.004, $\Delta F=3.699$, $p= .055$

The results of the two stages of the regression analysis for the sixth hypothesis are shown in Table 4-10. When firm size (2014) was included as the only predictor variable (without including EPS-2014), the regression model explained 30.9% of the variance in CSR (2014) (R^2 = .309, $p < .001$). When the EPS (2014) was added in stage two of the regression model, the

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percentage of variance in CSR (2016) explained by the regression model was 31.3% (R^2 = .313, p < .001). Hence the firm size accounted for an additional 0.4% of variance in the dependent variable (ΔR^2 =.004), and this change in R^2 was statistically insignificant in the regression model from stage 1 to stage 2 (ΔF=3.699, p = .055).

Therefore, we fail to reject the null hypothesis six and conclude that there is no relationship between prior EPS in year 2014 and subsequent CSR in year 2016, controlling for firm size in 2014.

Moreover, as can be seen in the model, the unstandardized regression coefficient (B) for CSR (2014) is 1.356 (t (600)=1.923, p=.055), meaning every additional percentage of EPS in 2014 will cause an extra 1.3 point increase on CSR in 2016.

Research Hypothesis Seven

Null Hypothesis 7: *There is no correlation between RKS and CASS in the same year, 2015*

Hypothesis 7: *There is a correlation between RKS and CASS in the same year, 2015*

The seventh hypotheses evaluated the correlation between RKS and CASS in 2015. Pearson correlation coefficient was used to examine whether a statistically significant correlation existed between RKS and CASS in 2015.Table 4-11 presented the correlation between evaluation of RKS and CASS.

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Table 4-11:

Results of Correlation between RKS 2015 and CASS 2015

	CASS 2015
RKS2015	
Pearson Correlation	.396
Sig. （2-tailed）	P<.001**
Number of companies	74

Note: ** means correlation is significant at the 0.01 level.

Pearson correlation is a measure of the linear correlation of average CSR ranking scores between RKS and CASS. As can be seen in the Table, the correlation is significant (r= 39.6, P< .001), suggesting that there is a moderate correlation between RKS and CASS in 2015. Therefore, we reject the null hypothesis 7, and conclude that there is a moderate correlation between RKS and CASS in the same year, 2015.

Conclusion

This chapter provides empirical tests of the seven research hypotheses of this study. Results from the research hypothesis one revealed that there was a statistically significant relationship between CSR and ROA in 2015. Results from the research hypothesis two indicated that there was a statistically significant relationship between CSR and EPS in 2015.

Results from the research hypotheses three and five revealed that there is a significant relationship between prior CSR in year 2014 and subsequent ROA and EPS in year 2016. Similarly, results from the research hypothesis four showed that there is a significant relationship between prior ROA in year 2014 and subsequent CSR in year 2016. However, the result from

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research hypothesis six showed that there is no relationship between prior EPS in year 2014 and subsequent CSR in year 2016 controlling for firm size in 2014. Results from the research hypothesis seven indicated that there is a moderate correlation existing between RKS and CASS in 2015.

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Chapter V: Discussion and Conclusions

Introduction

Chapter 5 consists of 1) a summary of the study; 2) discussion of the findings; 3) limitations; 4) implications for practice; 5) recommendations for further research, and 6) conclusion. This chapter begins with a summary of the purpose and structure of the study and is followed by the major findings. Finally, implications for practice and recommendations for further research are presented and discussed.

Summary of the Study Findings

Using CSR data of total ratings scores obtained from the RKS database, along with financial data that was obtained from scores on the SINA and CSMAR databases, this study aimed to examine the relationship between CSR and financial performance in China. The main finding is that a relationship exists between total RKS-CSR rating scores and ROA, EPS in 2015. Additionally, the findings showed that there was a relationship between prior CSR in year 2014 and subsequent ROA and EPS in year 2016. In addition, the findings showed that there was a significant relationship between prior ROA in year 2014 and subsequent CSR in year 2016. However, there is no relationship between prior EPS in year 2014 and subsequent CSR in year 2016. Finally, the findings indicated that there was a moderate correlation existing between RKS and CASS in 2015.

Discussion of the Findings

This study has attempted to explore the relationship between CSR and CFP, and examine the lagged effects between CSR and CFP in China. This section discusses the findings for each

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of three research questions:

1. *Is there a significant relationship between total CSR ratings using the RKS reputation index and financial performance, controlling for firm size?*

The findings in regard to research question one indicate that there was a significant positive relationship between total RKS-CSR ratings scores in 2015 and financial performance in the same year, 2015, with firm size as the control variable. This is consistent with findings of previous studies that use data from other countries (Saleh et. al, 2010; Ameer, R. & Othman, R. 2012; Wong, 2012). RKS-CSR scores were found to be positively associated with both short-term financial performance (ROA) and anticipated future profitability (indicated by EPS) for the Chinese listed companies. This suggests that CSR practices and disclosure brought benefits to companies and contributed to their sustainable development. By contrast, research by Zhang (2016), employing the CASS measure of CSR, did not find an association between CSR scores and financial performance for Chinese companies using data from the year 2013.

The findings regarding research question one suggest that it is beneficial for the firm to engage in CSR activities, because meeting the expectations and needs of various corporate stakeholders will ultimately improve the performance of the company (Freeman, 1984). Stakeholder theory also predicts that if a firm attempts to lower its implicit costs by socially irresponsible actions, it will lead to higher explicit costs resulting in competitive disadvantage. On the other hand, if a firm serves the implicit claims of major stakeholders (e.g., employees, customers), this may enhance a company's reputation in a way that has positive impact on its financial performance (Preston & O'Bannon, 1997). For example, customer perceptions about product quality and safety leads to increased sales or decreased costs associated with stakeholder relationships (Waddock & Graves, 1997). Also, companies which are high in social

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responsibility may benefit from socially responsible actions in terms of employee morale and productivity (Tsoutsoura, 2004), and they may face fewer labor problems. This is because when employees are satisfied, they will work more effectively and efficiently (Berman, Wicks & Jones, 1999) and contribute to higher levels of organizational effectiveness (Koys, 2001).

2. *Does a relationship exist between prior CSR in 2014 and subsequent CFP in 2016, and between prior CFP in 2014 and subsequent CSR in 2016?*

The finding in regard to research question two revealed that there was a significant relationship existing between total RKS-CSR ratings scores in 2014 and CFP (ROA and EPS) in 2016, ROA in 2014 and total RKS-CSR rating scores in 2016, with firm size as the control variable. Evidence was insufficiently strong to conclude that there is a relationship between EPS in 2014 and total RKS-CSR ratings scores in 2016, but a trend towards to show statistical significance. The results showed that prior CSR had a significant relationship with subsequent CFP (ROA) when firm size was taken into account. This supports the good management theory that attention to CSR improves relationships with stakeholder groups, resulting in better overall performance, such as customer perceptions, employee productivity and satisfaction (Waddock & Graves, 1997). By establishing a responsible organization, a corporation can both reduce the negative effect and also benefit from supportive and long-lasting relationships with a wide array of stakeholders (Delmas & Pekovic, 2013). Firms can satisfy their employees, enhance their job performance, and improve financial performance (Inoue & Lee, 2011). Additionally, by reducing the amount of materials and energy used in industrial activity, corporations become both greener and leaner, reducing their production costs and thereby increasing profitability (King & Lenox, 2001). Similarly, by reducing emissions and wastes, firms reduce both waste management costs and fines that result from noncompliance with regulations. In doing so, firms also reduce the

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exposure they will face if and when future regulations come into effect (Reinhardt, 1999, Zhang, 2016).

The results also indicated that prior ROA in 2014 had a significant relationship with subsequent CSR scores in 2016 when firm size was taken into account, which supported the slack resource theory (Waddock & Graves, 1997). Slack resource theory holds that better financial performance potentially results in the availability of resources that provide the opportunity for companies to invest in social and environmental performance. It is evident that firms with available resources may choose to spend those resources on doing well by doing good (DWDG), and if resources are available, then social performance would result from the allocation of these resources into social actions, which would in turn increase the financial performance overall (Waddock & Graves, 1997). Firms may wish to embed CSR into their core strategy at all times, but their actual behavior may depend on the resources available. Hence, profitability in one-time period may increase a firm's ability to invest in socially responsible activities.

Third, results from this study found there was not an insufficiently strong relationship existing between prior EPS in 2014 and subsequent CSR in 2016 controlling by firm size. Unlike ROA, an accounting indicator related to the earnings in hand, EPS is a market indicator, which merely suggests investors' expectations of future value. Gentry and Shen (2010) reviewed the literature about the relationship between accounting and market measures of firm financial performance and found that accounting profitability and market performance did not load on a higher-order factor ($r>.50$) in most related literatures.

1. *To what extent do total CSR ratings from two reputation indexes in China (RKS and CASS) produce consistent reputation ratings?*

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The findings for research question three revealed significant correlation between RKS and CASS scores for the same 300 companies in the year 2015. The strength of this correlation (r=0.396) was a moderate correlation between total CSR ratings from RKS and CASS reputation indexes in China. Cohen (1988) has given heuristic criteria for interpreting the magnitude of a correlation coefficient. According to Cohen (1988), a correlation between 0.3 and 0.5 would be considered “medium” to “large”. Comparing the RKS and CASS measures of CSR provides some assessment of the construct validity for these measures of corporate social responsibility. Convergent validity takes two measures that are supposed to be measuring the same construct and shows that they are related. It is usually recommended that convergent validity should be above .70; and convergent validity scores below .50 should be avoided (Carlson & Herdman, 2012). The actual measured convergence of .396 indicates that the two measures of CSR are correlated, but not so strongly that one can conclude that either is validated by these findings about convergent validity.

Limitations

The goal of this study was to investigate the effect of CSR on financial performance of Chinese listed companies in China. The collected data was studied and the findings, although significant, do have some limitations.

First, despite the wide use of reputation index to measure CSR, it still suffers from limited construct validity. Although previous literature suggests that reputation index uses a comprehensive practice to measure CSR, especially when compared to other methods like content analysis of company reports, an inaccurate weight problem may still exist because the evaluation practice of some indicators may not accurately reflect the notion that CSR encompasses a firm’s voluntary activities beyond their interest (Mcwilliams & Siegel, 2001). In

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other words, it is difficult to measure the concept of CSR, so subjectivity of CSR raters may limit the reliability of those ratings. Further development of the measure of CSR in China may help reduce the measurement bias in future research about the relationship between CSR and CFP.

A small sample size is still an issue that may affect the results, and the sample of this study includes only companies from the RKS database. Thus, the conclusions of this study may not generalize to the population of Chinese companies that had not voluntarily participated in RKS ratings. The sample was also limited to large firms, which potentially limits its application to small firms or other businesses.

Implications for Practice

The findings of this study have several important implications. Consistent with the Stakeholder theory (Freeman, 1984), the findings suggest that it can be beneficial for the firm to engage in CSR activities. From this study it appears that such investment might be beneficial for improving ROA and EPS. Socially responsible companies have an enhanced brand image and a positive reputation toward consumers, employees and business partners. Companies that adopt CSR are also more transparent and have less risk of corruption, and negative social events, which could help them to build brand image and reduce the cost in advertising campaigns or litigation.

Recommendations for Further Research

First, even though this study collected longitudinal data from 2014-2016, the sample size is still relatively small, including only companies from the Shanghai and Shenzhen stock exchange indices. If a larger sample size becomes available in the future, it is important to investigate how long it takes to see the effect of CSR on CFP, using a long time period. With respect to the sample of this study, we did not take into account the effect caused by the mergers of sample companies during the study period. The present research did control for firm size but

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not for industry differences, so future research with a larger sample could also control for industry.

Second, although the CSR data from RKS has provided a measure of CSR in China, the validity and reliability of this measure needs further investigation. The development of new measures of CSR may help to reduce measurement bias.

Conclusion

Over the last three decades, the pressure on firms to engage in CSR has increased. Many managers have responded to these pressures, but many have resisted. Those who resist typically have invoked the trade-off between socially responsible behavior and profitability. Management researchers have responded to this by attempting to demonstrate the effect of CSR on profitability. Simultaneously, the development of CSR in China is later than in some other countries but has become quicker recently because of the clipping progress of the Chinese economy. Chinese enterprise and researchers have started to explore the relationship between CSR and corporate profitability.

The current study was the first research to use Rankins CSR ratings (RKS) in order to explore the relationship between CSR and financial performance in Chinese listed companies. This study also tested the correlation between RKS and Chinese Academy of Social Sciences (CASS) – another common measure of CSR in China – to explore construct validity in this study.

Data of financial performance measured by return on assets (ROA) and earnings per share (EPS) has been collected from SINA Corporation (SINA) and China Stock Market & Accounting Research (CSMAR) database, while data about CSR was collected from RKS database. The research period was from 2014-2016. Sequential regression has been applied in

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this study to test most of the hypotheses about the relationship between CSR and financial performance, and Pearson correlation has been applied to investigate the correlation between CASS and RKS database. The findings on these research questions suggest that there was a significant relationship between total RKS-CSR ratings scores and financial performance controlling with firm size in 2015.

This study also examined if relationships exist between CSR and financial performance, because of inconsistent results brought out in previous research even through the good management theory and slack resource theory support the positive possibility of CSR and financial performance (Palmer, 2012; Jitaree, 2015). A relation between CSR in 2014 and ROA in 2016, between ROA in 2014 and CSR in 2016 was found, but no significant effects were found between EPS in 2014 and ROA in 2016. The study has concluded with suggestions for further research with more companies, more years, and more consideration of how to validly measure CSR.

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Chapter VI: The Relationship Between Corporate Social Responsibility and Financial Performance in Light of Maharishi Vedic Science

Introduction

The purpose of this chapter is to connect the parts of knowledge about CSR and subsequent financial performance to the total knowledge of pure consciousness from Maharishi Vedic Science[1]. This chapter covers: Maharishi Vedic Science on Management, Transcendental Meditation and TM-Sidhi Programs, other research about consciousness development and responsible management, Unified Field Chart, Richo Akshare Chart and conclusion.

Maharishi Vedic Science Concepts on Management

Maharishi Vedic Science was founded by Maharishi Mahesh Yogi from ancient Vedic knowledge and technologies. It is to be understood as a reliable method to gain knowledge that is not experienced through senses but experienced when consciousness has become completely quiet and self-referral, that is, awake to itself. This self-referral ocean of consciousness has been likened by Maharishi to the unified field of all laws of nature.

Maharishi Vedic Science provides complete knowledge of the three elements of self-referral consciousness: the knower, process of knowing and known in a unified state (Chandler, 1987). It is the science of individual's pure consciousness, the unified field of all the laws of nature, and the basis of all creation. Maharishi Vedic Science explains that pure consciousness is the seat of natural law, and according to Maharishi Vedic Science, consciousness, and therefore

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law, is present everywhere:

> This field is omnipresent, present all over, everywhere, at all times, and in all places. The field of natural law is wherever creation is; wherever nature is, it is on the basis of that law. What is that law? That life on that level is profound, perfect, infinite, unbounded, self-sufficient. In its full dignity it is self-sufficient and infinite perfect orderliness. (Maharishi Mahesh Yogi, 1977, p. 23)

Application of Maharishi Vedic Science to the discipline of management has been explicitly addressed by Maharishi in his 1995 book *Maharishi University of Management*: *Wholeness on the Move*. In that book, Maharishi (1995a, p. 10) explains that the fully awake, fully alert creative potential of natural law in the self-referral awareness of the manager governs the comprehensive success and achievement. Maharishi (1995a, p. 8) explains that natural law is responsible for the orderly management of the evolving, ever-progressive universe with perfect precision and order: “The organizing power of Natural Law is that infinite organizing power which sustains existence and promotes the evolution of everything in the universe, automatically maintaining the well-coordinated relationship of everything with everything else” (Maharishi, 1995a, p. 8).

The key to successful management is to align the intelligence of the manager with this intelligence of natural law – “Engaging the Managing Intelligence of Natural Law” (Maharishi Mahesh Yogi, 1995a, p. 8). In this process of aligning, specific values of natural law spontaneously remain lively in the manager’s emotions, his thoughts, his logic, his decisions and his behavior. The natural law spontaneously permeates all the different areas of managers’ concern for a complete and effective management.

Maharishi Master Management (MMM) is the supreme system of management by

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introducing the organizing power of natural law into every aspect of management (Maharishi Mahesh Yogi, 1995a). The approach of MMM is to align the managing intelligence of managers with the supreme managing intelligence of the universe for "automatic, problem-free, ever-progressive and ever-evolutionary administration through Natural Law" (Maharishi Mahesh Yogi, 1995a, p. 8). MMM trains managers in the science and art of management through natural law so that the manager "enjoys the constant growth of the company, fulfilling the supreme goal of management-prosperity, progress, fulfillment, success and peace-for himself and for all concerned" (Maharishi Mahesh Yogi, 1995a, p. 10).

The infinite organizing power of natural law mentioned in Maharishi's Master Management (MMM) is going to promote the evolution of organizations and automatically maintaining the well-coordinated relationship inside and outside of an organization. Maharishi explains that "It shields the manager from going out of BALANCE" (1995a, p.10). An expression of this balance in management is the wholeness of triple-bottom line (TBL), which is a tool for measuring organizational performance based on stakeholder theory. TBL reveals that a firm's responsibilities are much wider than the economic field, or profitability, it also covers social and environmental measures for performance.

Transcendental Meditation and TM-Sidhi Programs

According to MVS, the key to achieving the ideal of responsible management is development of the consciousness of the manager. The Transcendental Meditation and TM-Sidhi Programs, founded by Maharishi Mahesh Yogi, are technologies to develop the individual's consciousness and then influence the whole society. The TM technique provides a simple, natural, effortless ride to the source of thought, the settled state of mind (Maharishi, 1995a). The process of the TM technique has been described by Maharishi:

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> Transcendental Meditation is practiced for 15 to 20 minutes in the morning and evening, while sitting comfortably with the eyes closed. During this technique the individual's awareness settles down and experiences a unique state of restful alertness; as the body becomes deeply relaxed, the mind transcends all mental activity to experience the simplest form of awareness-Transcendental Consciousness-where consciousness is open to itself. This is the self-referral state of consciousness. (1995a, p. 174)

The TM-Sidhi program is an advanced aspect of Transcendental Meditation, which trains the individual to think and act from the level of Transcendental Consciousness in order to enhance the co-ordination between mind and body and further enliven natural law (Maharishi,1995a). When groups of people practice the TM Technique and the TM-Sidhi Program this not only enlivens natural law in the individual, but also brings alliance with natural law to the national law and the collective consciousness of the whole society (Maharishi, 1985, p. 73-74).

Maharishi also explained:

> The experience of Transcendental Consciousness develops the individual's latent creative potential while dissolving accumulated stress and fatigue through the deep rest gained during the practice of Transcendental Meditation. This experience enlivens within one's awareness creativity, dynamism, orderliness, and organizing power, which results in increasing effectiveness and success in daily life. (1994, p. 261)

The TM technique helps individuals to bring their awareness to the pure consciousness deep within and then spontaneously follow the laws of nature. Besides, Maharishi (1977, p. 123)

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has mentioned that TM technique is an effortless procedure for minds to gradually settle down to the least excited state of mind where the inner wakefulness has no object of thought or perception, only pure consciousness, aware of its own unbounded nature. The TM technique, as explained before, can help individuals to experience pure consciousness and explore the total potential of natural law. This automatically develops the individual in the direction of the ideal man. Maharishi (1976) emphasized an ideal society is comprise by ideal men who act in accordance with the laws of nature.

Through the organizing power of natural law, “all aspects of the physiology fully reflect the self-referral nature of the unified field and thereby function in accordance with the total potential of natural law-giving rise to perfect health” (Maharishi, 1985, p.67). Perfect health, well-being for all, is certainly one of the ideal aims of responsible management.

The organizing power of natural law is very important for implementing sustainability, which focuses on environment, economy and society. Indeed, Maharishi used the word “sustains” in his explanation of natural law which sustains existence and promotes the evolution of everything. The power of natural law promotes the protection of environment, the evolution of the economy and well-coordinated relationship of all elements of society.”

The TM technique does not involve control or effort because it uses the natural tendency of the mind:

> To go to a field of greater happiness is the natural tendency of the mind. Because in the practice of Transcendental Meditation the conscious mind is set on the way to experience transcendental, absolute being [unchanging pure consciousness], whose nature is bliss-consciousness, the mind finds the way increasingly attractive as it advances in the direction of bliss. (Maharishi Mahesh Yogi, 1966, pp. 32-33)

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> The experience of pure consciousness connects the conscious mind with the unified field: Spontaneously the conscious mind identifies itself with the self-referral unified field, the fountainhead of all the streams of activity in Nature. As we gain more and more familiarity with that self-referral performance, our thoughts and actions spontaneously begin to be as orderly and evolutionary as all the activity of Nature. (Maharishi Mahesh Yogi, 1986, p. 97)

The unified field has been defined by Maharishi (1977) as a field of all possibilities, where all creative potentialities exist together, a state of perfect order, the matrix from which all the laws of nature emerge, and the source of creative intelligence. Maharishi's (1986) book *Life Supported by Natural Law* has mentioned that when the total potential of natural law is enlivened in the awareness of the individual, individual thoughts and actions will automatically be in harmony with the full range of natural law and spontaneously move in an evolutionary direction. Thus, the actions of the individual will be of maximum benefit to oneself and one's environment (Maharishi Mahesh Yogi, 1986, p. 169).

Over 500 scientific studies on the Transcendental Meditation program have been conducted during the past few years by more than 214 independent research institutions around 27 countries (Maharishi, 1995a, p. 200). Documented results include increased intelligence and creativity, clarity of innovation thinking and perception, efficiency, job satisfaction, the growth of personal integration and fulfillment, improved health and the increased city, national, and international prosperity. The TM technique has been found to promote advances in cognitive, moral, and emotional development as spontaneous outcomes of the repeated experience of transcending. Graduates of Maharishi University of Management experienced unprecedented changes in levels of self-development, while most adults cannot fully unfold their potential (Chandler, Alexander & Heaton, 2005). These developmental changes provide the grounds for

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responsible management.

The benefits of regular practice of the Transcendental Meditation technique in the field of management were reviewed by Schmidt-Wilk, Alexander and Swanson (1996). Retrospective, prospective and case research on the TM technique in the workplace found that the TM technique tends to improve employee health, well-being, job satisfaction, efficiency and productivity, as well as influence the organizational climate, absenteeism and financial performance. Alexander, Swanson, Rainforth, Carlisle, Todd and Oates (1993) have done a three-month prospective study to evaluate the effects of TM technique on stress reduction, health and employee development with one group of people to practice TM regularly and another group not. From their research, regular TM meditators have decreased trait anxiety and job tension, enhanced employee effectiveness, job satisfaction and work/personal relationships.

The effect of TM on measures of well-being for the whole society has been verified by research studies. The phenomenon of the rise of coherence in collective consciousness of any community when one percent of the population practiced TM has been explained as the Maharishi Effect (Maharishi, 1995a). The book *Creating an Ideal Society* (Maharishi, 1976), has predicted that 1% of a population practicing the Transcendental Meditation technique will create an influence of harmony throughout the entire society. Evidence of the Maharishi Effect on positive trends in society have been reported in research studies, including Borland and Landrith (1976). In *Maharishi University of Management, Wholeness on the Move*, Maharishi explained that: “The Maharishi Effect in itself proves the existence of the unified field of natural law and man’s ability to operate from the level of the field producing the ‘Field Effect’” (1995a, pp. 195-196).

Davis and Alexander (2005) analyzed the effects of seven large assemblies of individuals

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practicing TM-Sidhi program in US and Europe between 1983 and 1985 on the Lebanese civil war. Findings included a 66% increase in co-operation between countries in the middle East, a 71% drop in war deaths, and a 68% fall in war injuries. The idea that Maharishi Effect creates a profound, life-supporting influence in the whole society was researched by Orme-Johnson, Alexander, Davis, Chandler & Larimore (1988). In that study, the size of the group practicing the TM and TM-Sidhi program was found to be closely related with reduced conflict and improvement in the quality of life. The findings are consistent with the explanation of the phenomenon of Maharishi Effect by Maharishi (1995a):

> The phenomenon of the Maharishi Effect (like the phenomenon of the Meissner Effect in physics) discovered by scientists has repeatedly verified that coherence in collective consciousness and positively and harmony in national consciousness is produced by the group practice of my Transcendental Meditation. This has proved to be a formula to create irreversible world peace and Heaven on Earth-all good to everyone and non-good to no one-the basis of a coherent, integrated society and a perfect government. (Maharishi Mahesh Yogi, 1995a, p. 190-192)

The effects of the TM and TM-Sidhi program to bring world peace, all good to everyone, and a coherent, integrated society, fulfill the definition of sustainability and requirements of an ideal society. The role of consciousness development for responsible management has also been discussed by some other scholars in the management field, as discussed in the following section.

Consciousness Development and Responsible Management

Consciousness development has been discussed by psychology researchers in terms of stages of ego development, which are individual differences in how one makes sense, experiences and acts upon reality (Kegan & Lahey, 2009; Bushe & Gibbs, 1990). Borial, Baron

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and Gunnlaugson (2014) refer to these stages as differences in consciousness development. Consciousness development stages have three main levels: pre-conventional, conventional and post-conventional; only about 15% of adults are at post-conventional stages (Cook-Greuter, 2000; Rooke & Torbert, 2005).

Boiral et al. (2014) found that developmental differences are related to differences in how managers perceive and act regarding environmental responsibility. Their research found that small and medium-sized companies recognized for environmental leadership tended to have leaders who were measured at post-conventional levels of development; but post-conventional leaders were not found in comparison companies that were not engaged in sustainability concerns. Boiral et al. (2014) explained that post-conventional stages of consciousness development "include a broader and systemic perspective, long-range focus, integration of conflicting goals, collaboration with stakeholders, complexity management, collaborative learning" (p. 363).

Brown (2011) has conducted research which showed the association of consciousness development and sustainability leadership. Brown's research assessed 32 sustainability leaders and change agents. The findings showed that leaders on post-conventional development stage may contribute to the effectiveness of responsible management. Brown explained that post-conventional development entails capacities for critical thinking, systemic worldview, and comprehensive transformation of organization and society.

Waddock and Rasche (2012) also associate responsible management with consciousness development. They argue that responsible enterprises have visionary leaders with high levels of ego development, moral development, and emotional intelligence. "They are more aware of their impacts and can think through and develop better relationships, all skills critical to responsible

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enterprise" (p. 60). Visionary leaders can instill the values and practices that enhance work, contribute to society, and respect the natural environment.

According to Waddock and Rasche (2012) responsible management means "a company undertakes systemic efforts to manage it relationship with key stakeholders and the natural environment" (p. 171). By this definition, responsible enterprise includes environmental responsibility which goes beyond polluting and social responsibility which preserves individual civil rights and respects political rights. Responsible management is an integrated system which enables corporations to sustain their own well-being and competitive advantage by changing their perspective on corporate sustainability.

A model of responsible management by Waddock and Bodwell (2007) depicts a process through which enterprises can make strategies and business practices to maximize sustainability with a responsible, transparent and accountable impact to the society. According to Waddock and Bodwell (2007), there are three elements to responsible management: inspiration, integration and innovation. Inspiration focuses on vision setting and leadership systems, covering corporate core values and stakeholder engagement. Responsible managers have clear constructive visions and core values about respecting the environment and treating stakeholders well. Through their leadership, these visions and values permeate into business operation. Integration focuses on the changes in strategies and management practices for responsible management; while innovation consists of responsibility measurement systems, transparency, accountability and improvement.

From the perspective for Maharishi Vedic Science, the practical foundation for Waddock and Bodwell's model of responsible management is the experience of the wholeness of natural law at the level of the unified field. This experience is available through the Transcendental Meditation technique. From consciousness of the unified field comes forth the inspiration, which

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gets enacted through integration, leading to the innovative systems of accountability for holistic impacts for society.

Scharmer and Kaufer (2013) are among other scholars who have explained how social and environmental responsibility are related to the development of consciousness. They have argued that sustainability will be realized through a:

> … shift from *ego*-system awareness that cares about the well-being of oneself to an *eco*-system awareness that cares about the well-being of all, including onself . ... When operating with eco-system awareness, we are driven by the concerns and intentions of our emerging or essential self – that is, by a concern that is informed by the well-being of the whole. (Scharmer & Kaufer, 2013, p. 2).

Scharmer and Kaufer explain the process of consciousness development in their Theory U. The left side of the U depicts the process through which one goes down to the bottom of the U by opening one' mind, heart and will to experience what they call the Source, or Presencing. From this Source at the bottom of the U, the process goes up through imagining and enacting a new reality on the right side of the U. This U process parallels the Transcendental Meditation technique which takes awareness inward to the still source of creative intelligence as a preparation for activity in which creative intelligence manifests in progressive and holistic thinking and performance.

Unified Field Chart for Responsible Management

The unified field of natural law has been explained by the ancient Vedic tradition and modern quantum physics (Hagelin, 1986). Maharishi's concepts about the unified field are a highly coherent theoretical framework about what consciousness is and how it relates to the objective field. The Vedic tradition states that consciousness is not only a product of matter

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existing in the human nervous system but is fundamental to all manifest phenomena. (Maharishi Mahesh Yogi, 1966). Maharishi (1985) described the unified field as the state of pure, self-interacting consciousness, the unified home of all the laws of nature.

Both the objective approach to gain knowledge and the subjective approach of Vedic Science has presented the unified field of natural law as a self-interacting, self-sufficient and infinitely dynamic field at the foundation of the orderly and creative evolution of the universe (Maharishi, 1986). Maharishi (1986) has defined that the self-referral state of the unified field is the state of pure awareness which is open to itself. He further explains it with "because the awareness knows itself, it is the knower, it is the known, and it is the process of knowing. This is the state of pure intelligence, wide awake in its own nature and completely self-referral" (p. 29). That is the reason that the relationship between the fundamental and holistic level of the unified field of natural law in Unified Field Charts is structured by knower, process of knowing and known.

The Unified Field Chart structure can be applied to any particular discipline, it depicts the flow of intelligence and consciousness from wholeness to diversity, from the most abstract level to the most concrete level. The upper right section of each Unified Field Chart is the holistic integration of that discipline. It includes several levels from the subtlest level (the unified field) to superficial levels, and three columns which are knower, process of knowing and known. The right side of the Unified Field Chart depicts that the practice of the TM and TM-Sidhi programs provides experience of the unified field and brings to individuals or groups the enlightening influence of natural law for national law and the whole society.

Figure 6-1 presents the Unified Field Chart for Responsible Management. The unified field in the bottom of this chart is pure consciousness, pure intelligence, the source of thoughts

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and also the home of all knowledge. The discipline of Responsible Management is shown in the upper right part of Figure 6.1 and in detail in Figure 6-2.

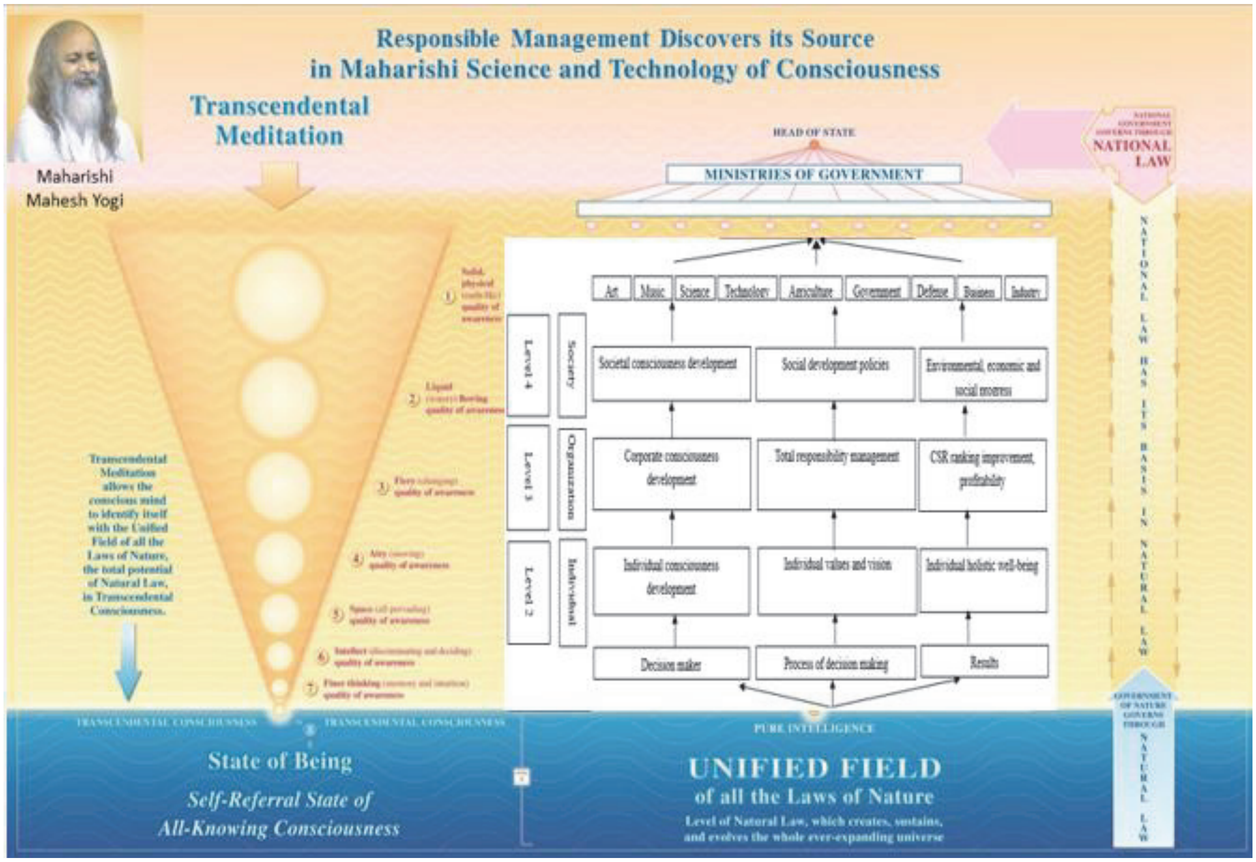

Figure 6-1. Unified Field Chart for responsible management

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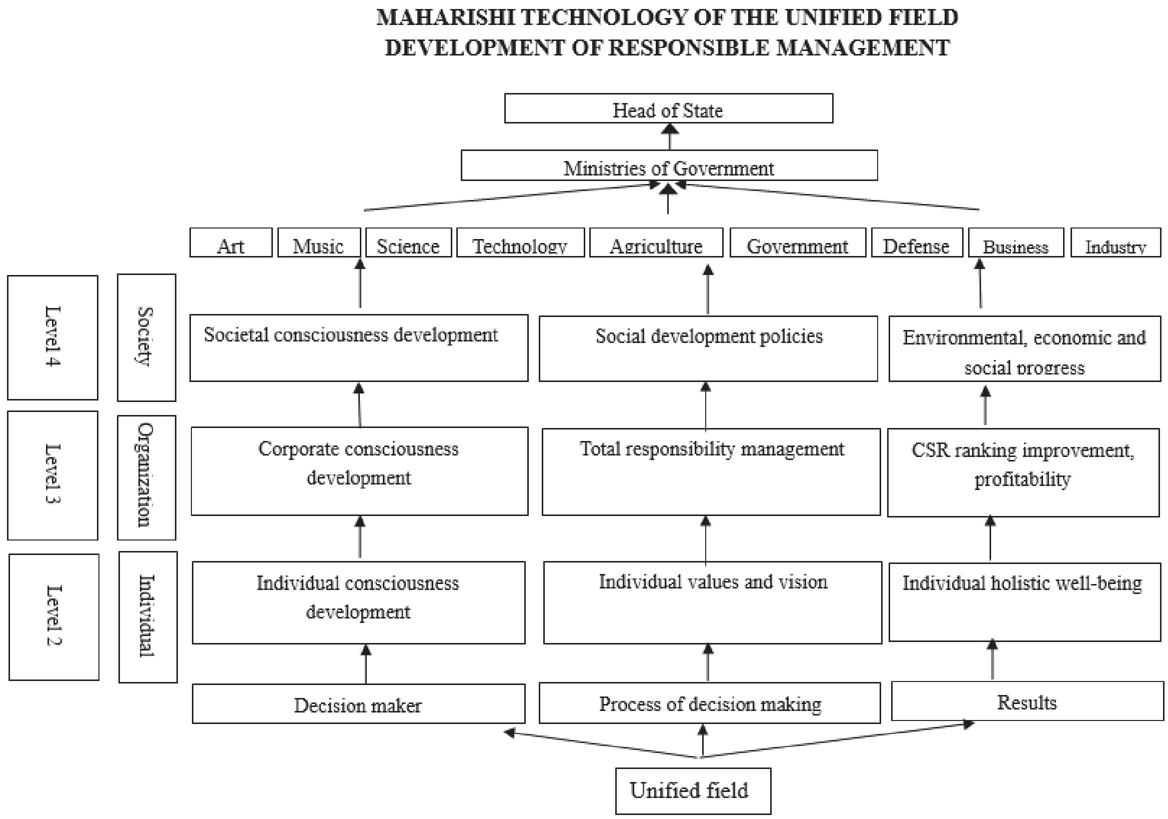

Figure 6-2. Unified Field Chart for responsible management – upper right section.

Figure 6-2 is the upper right section of Figure 6-1. On the foundation of the unified field (Level 1) are three levels of responsible management: individual (Level 2), organization (Level 3) and society (Level 4). Horizontally, the Unified Field Chart for Responsible Management is organized in three columns from left to right, representing the three-in-one structure of knowledge-the unity of knower, knowing and known-subject, object and the relationship between subject and object. At the level of the Unified Field, these three are together in the nature of Pure Consciousness. Pure Consciousness, being awake to itself is the knower and at the same time is the known and the process of knowing. In this Unified Field Chart of Responsible Management, the knower is the decision maker of responsible management, the process of

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knowing is the process of decision making for responsible management and the known is the holistic range of results of responsible management.

At Level 2, development of individual consciousness for the decision-maker grounds decision-making in values and vision, and results in individual holistic well-being. At Level 3, development of organizational consciousness enables the organization to carry out comprehensive responsible management practices which result in both CSR ranking improvement and profitability. At Level 4, the society level, the knower is societal consciousness development, the process of knowing is social development policies and the known is environmental, economic and social progress.

According to the research in this dissertation, corporate social responsibility and corporate financial performance have a positive relationship with each other. These outcomes are located in the Unified Field Chart in the result column at the organizational level, in the box "CSR ranking improvement and profitability". When an organization develops its organizational consciousness, it can execute responsible management strategies resulting in higher CSR ranking and higher profitability. A higher-level of consciousness for the organization comes with caring about well-being of the whole, a better relationship with stakeholders, and responsible, transparent and accountable impact to the society, which is responsible management.

The right side of Figure 6.1 shows the technologies of Maharishi Vedic Science for the development of consciousness through experience of the total potential of natural law at the level of the unified field. TM and TM-Sidhi Programs will enlighten individuals and society, and bring the national law into harmony with natural law.

Maharishi writes:

Through the regular alternation of Transcendental Meditation with activity, this

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> state of inner wakefulness becomes stabilized; the nervous system gains the ability to maintain unbounded awareness even during activity of daily life. The perfect orderliness, the infinite correlation, the freedom and stability that characterize consciousness in its least excited state begin to shine through every thought and action. All thinking and activity become spontaneously orderly and evolutionary, supported by the full potential of creative intelligence and moving in full accord with all the laws of nature. (1976, p.124)

In brief, the Unified Field Chart on Responsible Management shows how corporate social responsibility and financial performance, the topics of the present research study, have their source in the unified field. Through practice of the TM and TM-Sidhi Programs, these values can grow together and bring economic, social, and environmental well-being to the whole society.

Richo Akshare Chart

The Richo Akshare verse of Rik-Veda locates the source of all the laws of nature and the fundamental level of all the creation in pure consciousness, the source of thoughts, and the unified field. The verse is presented in Sanskrit, following with Maharishi's translation:

RICHO AK-KSHARE PARAME VYOMAN YASMIN DEVA ADHI VISHWE NISHEDUH

> The Verses of the Veda exist in the collapse of fullness (the 'kshara' of 'A') in the transcendental field, the Self, in which reside all the Devas, the impulses of Creative intelligence, the Laws of Nature responsible for the whole manifest universe.

YASTANNA VEDA KIMRICHA KARISHYATI YA IT TAD VIDUS TA IME SAMASATE

> He whose awareness is not open to this field, what can the verses accomplish for him?

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> Those who know this level of reality are established in evenness, wholeness of life. (Maharishi Mahesh Yogi, 1997, pp. 52-53)

Maharishi explains the first half of the verse as:

> The Richas (verses) of RK Veda – Laws of Nature, structures of intelligence, frequencies of consciousness-are sustained in the AK-kshar – the dynamics of (A), the dynamics of totality, the kshar, the collapse of (AK) – the collapse of infinity represented by (A), onto its own point, represented by (K)-(AK), the collapse of the unbounded field of intelligence onto its own point. (1995b, pp. 171-172)

In the chart in Figure 6-3, Visionary Leadership for Responsible Management, the principles of corporate social responsibility (*richas*) guide a corporation to make decisions (*kshare* of *a*) which consider its various stakeholders, including owners, communities, and the environment. In this interpretation of responsible management, in the light of the Richo Akshare verse, consideration of various stakeholders is the fullness or "*A*" value. The point ("*K*"), to which fullness collapses, is management decisions, and these decisions are grounded in genuine values and vision for responsible management. Thus, the values of visionary leaders are the transcendental basis for responsible management. According to their higher states of consciousness and moral development, corporation leaders express their values and vision about CSR. These visions and values of CSR will inspire employees and other stakeholders, and manifest in practices of greater transparency, accountability, innovation and organizational learning.

The second half of the Richo Akshare Chart starts from *yastanna veda kim richa karishyati*. In the chart for responsible management, this part of the verse means that if corporations aim to comply with CSR principles but are not inspired by genuine vision and values from their leaders, the consequence will be that those corporations can go through the

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efforts of compiling CSR reports and competing in CSR rankings but not achieve higher financial performance. On the other hand (*ya it tad vidus to imesamasate*), when corporations aim to comply with CSR principles and are inspired by genuine vision and values from their leaders, they will align their organizations with CSR principles and achieve both CSR and CFP; the organization will grow and prosper, and the society will flourish.

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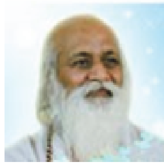

All Theories of CSR and CFP
In One Verse of Rik Veda—Rik Veda 1.164.39
Visionary Leadership for Responsible Management

RICHO AKSHARE The verses of the Veda exist in the collapse of fullness (the kshare of 'A')	PARAME VYOMAN ...in the transcendental field, self-referral consciousness, the Self	YASMIN DEVA In which reside all the devas, the impulses of creative intelligence, the Laws of Nature	ADHIVISHVE NISHEDUH ...responsible for the whole manifest universe
The principles of corporate social responsibility (richas) guide a corporation to consider its various stakeholders, including owners, communities, and the environment, in making decisions (kshare of a).	…which are grounded in genuine values and vision for responsible management	This vision and values about CSR implementing into corporation operations will inspire employees, other stakeholders	…and manifest in practices of greater transparency, accountability, innovation and organizational learning.

YASTANNA VEDA He whose awareness is not open to this field...	KIMRICHA KARISHYATI ...what can the verses accomplish for him?	YA ITTADVIDUS Those who know this level of reality...	TA IME SAMASATE ...are established in evenness, wholeness of life.
If Corporations aim to comply with CSR principles but are not inspired by genuine vision and values from their leaders…	…then they can go through the efforts of compiling CSR reports and competing in CSR rankings but not achieve higher financial performance.	On the other hand, when corporations aim to comply with CSR principles and are inspired by genuine vision and values from their leaders…	…they will align their organizations with CSR principles and achieve both CSR and CFP, the organization will grow and prosper, and the society will flourish.

Figure 6-3. Richo Akshare Chart for Responsible Management

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APPENDIX

MCTI social responsible report ranking evaluation system by Rankins CSR Ratings, RKS

1.2 RKS MCTI 2012 edition rating system

1.2.1 Rating system overview

MCT 2012_1.2 edition rating system is the latest evaluation system of RKS, which refer to the newest international authoritative social responsible standard ISO26000. This edition considers the industry difference by building industry index-I value, and divide listed companies into 22 industries based on CSRC (China Securities Regulatory Commission) industry classification standard.

MCT 2012_1.2 edition rating system starts from Macrocosm, Content, Technique, and Industry indexes, with first grade indexes (15) and second grade indexes (63) to evaluate CSR report in all directions.

MCT rating system use structured expert scoring method, the total score is 100, M-value (macrocosm) is weighted 30%, total score is 30; C-value (content) is 45%, score 45; T-value (technique) is 15%, score 15. I-value (industry) is 10%, score 10.

1.2.2 Macrocosm

- Strategies

M1 Information for overall responsible strategies: includes social responsible strategic target, the path to achieve social responsibility, risk identification etc.

M2 Sustainable development adoption and response: climate change, social problem, macro

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environment change etc.

M3 Responsible strategies and corporate related information: the influence of corporate main products and service to society and environment

M4 Corporate managers consider social responsibility in strategic level: declaration about CSR from Chairman of the board or other representatives of the company.

M5 CSR goal setting and achieving: long-term and short-term CSR plan, specific and quantized information.

- Governance

M6 Company basic information: company and industry information, social and environmental background.

M7 Value, principle and criterion: enterprises' understanding about CSR, values and behavior criterion to drive sustainable development

M8 CSR management institution: institutions setting about CSR supervision, CSR department and manager settings

M10 Governance transparency: information disclosure

M11 Risk management information: assess and manage risk, especially risks about CSR.

M12 Business ethic governance information: commercial bribery specification, and relevant measures.

M13 Internal practice information: CSR and sustainable development related department, multi-level participation, group company, parent company and subsidiary company's CSR system and mechanism.

- Stakeholders

M14 Stakeholder definition and identification: specific stakeholders and the degree of

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importance.

M15 Stakeholder communication: two-way communication mechanism with stakeholders and interaction with stakeholders' expectation

M16 Stakeholder suggestions: comments from different stakeholders

1.2.3 Content

- Economic performance

C1 Profit and return information: annual income, profit, and profit distribution

C2 Year-on-year economic information: income, profit distribution year-on-year ratio

C3 Main products and service information: market share, sales, innovation

- Labor and rights

C4 Employ and employment relationship: basic structure of employees, employment regulations, different employment relationships.

C5 Employee career growth information: enterprise investment on employee individual improvement on knowledge and ability and development of employee career.

C6 Occupational health and safety: enterprise recognize and control occupational health and safety risk, making regulations on employee health and safety, and providing safety production facility.

C7 Protection of human rights: equal pay for equal work, refused to child labor and forced labor, complaint settlement.

C8 Working condition and social security: information disclosure on employee salary, holiday, welfare and special employee care.

C9 Social dialogue and care: enterprise union, attention to employee happiness (recreational activities, family care, employee satisfaction etc.)

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C10 Responsibility education: introduction about sustainable development knowledge, training about sustainable development.

- Environment

C11 Overall environmental management information: environmental management system for enterprise operation, annual certification and validation, annual insurance investment etc.

C12 Pollution prevention: recognize pollution and waste; measure, record and report the source of pollution, adopt control solution

C13 Sustainable resource utilization: recognize the source of energy, water and materials; measure, record and report their use (resource consumption), resource effectiveness method (energy saving), seek for the opportunity to replace non-renewable resources.

C14 Retard and adopt climate change: recognize the source of greenhouse gas emission; measure, record and report greenhouse gas emission, adopt mitigation measures; avoid or reduce harmful effect from climate change; consider climate change information during the process of production and other business.

- Fair operation

C15 Anti-corruption management: implement and improvement anti-corruption policy and practice; support employee and agent to wipeout corruption, encourage reporting etc.

C16 Promote CSR in sphere of influence: covers ethic, social environment, occupational safety and health, gender equality principles in polices of purchasing and selling; encourage other organizations to adopt same method; research and monitor related organizations' activities about CSR, and promote and improve their reorganization about CSR.

- Consumers

C17 Provide quality assurance of products and service: quality management system of main

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products and service, technique innovation etc.

C18 Consumer (customers) management: customer relationship management system and customer satisfaction results etc.

C19 Protect customer safety and health: qualification rate and safety of main products and service; related evaluating regulations, standards and qualification, reduce risk from product design, avoid using carcinogenic, harmful and toxic materials, prior risk assessment, normal product index and prevent misuse and measure to deal with misuse, defective product recycle etc.

C20 Consumer (customers) service information: acquisition channel of information; complaint rate; dispute resolution etc.

C21 Protect consumer (customer) data and privacy: management setting of customer personal information; delete application etc.

C22 Consumer education information: knowledge education to customers on product safety and harm, related regulations, product label, package and product disposal information

- Community participation and development

C23 Charitable donations: includes enterprise social charitable donations

C24 Voluntary service: employee voluntary service scope, activities, and performance etc.

C25 Political participation: enterprise participate in district and industry organization, and the conversation or participate degree about related regulations and standards.

C26 Job creation: annual new employment

C27 Technology development: participate to local and country's scientific and technological development projects, do scientific research cooperation with local university or research institute, admit technology transfer and diffusion.

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C28 Wealth and income creation: obtain consent of local community before exploit natural resources, support community enterprises, develop potential local knowledge and technology

C29 Promote of health: promote healthy life, improve disease awareness, cut down the negative influence of organizational products or service to health.

C30 Social investment: integrate environment, social and government into investment analysis and decision.

1.2.4 Technology

- Content balance

T1 Integrity: integrity of enterprise stakeholder covering

T2 Pertinent: information disclosure extent he situation of performing CSR negative information or facing challenge and barrier.

- Information content comparability

T3 Consistency: consistency with prior reports (compiled forms, method, explanation to hypothesis, data calculation)

T4 Statistically: CSR performance disclosure extent on total data or ratio data.

- Report innovation

T5 Innovation: statement structure, compile and format innovation etc.

T6 Innovation validity: the degree of innovation validity to enterprise and the possibility to promote in the whole industry.

- Reliability and Transparency

T7 Stakeholder advice disclosure degree

T8 The third party's compliance degree

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T9 The third party's authority

T10 Suggestion of report reader and the validity to build feedback mechanism

- Normalization

T11 Normative of report policy: information normative degree of report time range, cover scope, release cycle, authenticity, participator and producer.

T12 Report standard: choosing of report standard, or the degree to contrast with standard sample.

T13 Report seriousness: report wrongly written etc.

- Information available and transmit efficiently

T14 Full extent of language version

T15 Available channel of getting report and the channel for people with special needs

T16 Art design, composing of report

T17 report data and information diagrammatized and graphicalization degree

1.2.5 Industry

- Extractive industry
- Communication and culture industry
- Electric power, gas and water industry
- Electron industry
- Real estate industry
- Spinning, clothing and fur manufacturing industry
- Machinery, facility, and instrument manufacturing industry
- Construction industry
- Finance and insurance industry

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- Transportation and warehousing industry
- Metal and nonmetal manufacturing industry
- Wood processing and furniture manufacturing industry
- Agriculture, forestry, animal husbandry and fishery industry
- Wholesale, retail, and trade industry
- Social service industry
- Petroleum, chemistry and plastic industry
- Food and beverage industry
- Information technology industry
- Medicine, biological products manufacturing industry
- Papermaking industry

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