Erasmus University Rotterdam

Erasmus School of Economics

Bachelor Thesis

International Bachelor Economics and Business Economics

Returns to Corporate Social Responsibility: Effects of Corporate Social Responsibility on Firm Credit Ratings

Name Student: Jaewoo Park

Student Number: 383654

Supervisor: Professor Aernoudts

Second Assessor:

Date of Final Version: July 13, 2018

Abstract

This study attempts to address the question whether corporate social responsibility (CSR) has positive impact on firm credit ratings as part of financial returns. The CSR performance of North American firms is observed for periods from 2008 to 2012. The empirical analysis of fixed-effect panel regression with firm size and leverage as control variables denotes that there is no supporting evidence for relationship between CSR and firm credit ratings. This result suggests that firms with better CSR do not benefit from higher credit rating, and thus lower financing costs.

Table of Contents

Chapter 1 Introduction 1
1.1. Research Question 2
1.2. Practical and Scientific Relevance 3
1.3. Research Method 3
1.4. Thesis Outline 3
Chapter 2 Literature Review 5
2.1. Evolution and Definition of CSR 5
2.2. Returns to CSR 7
2.3. CSR and Credit Ratings 9
Chapter 3 Data and Methodology 12
3.1. Sample Selection 12
3.2. Firm Credit Rating 13
3.3. Corporate Social Responsibility 14
3.4. Control Variables 15
3.5. Regression Model 16
Chapter 4 Main Findings 17
Chapter 5 Conclusion 21
Appendix 23
References 26

Chapter 1 Introduction

A concept of corporate social responsibility (CSR) has been gathering increasing attention since its introduction by Bowen in 1953 in his book, *Social Responsibilities of Businessman*, where he describes CSR as "…obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (Bowen, 1953). This leads to consider CSR as responsibilities that business enterprises have for the society with respect to its economic, social, environmental and ethical aspects, apart from their core objective of making profits.

In fact, according to KPMG's 2017 report on Survey of Corporate Responsibility Reporting, 93 percent of world's 250 largest firms by revenue participate in Corporate Responsibility reporting, which is 10 percent point increase from the result in the year of 2008. In other words, increasing number of firms worldwide disclose their CSR activities in annual financial reports. Furthermore, a number of third-party research institutions, such as Kinder, Lydenberg, Domini (KLD) Research and Analytics Inc., provide investors with information on annual CSR performance of firms worldwide (Hsu and Chen, 2015).

On the other hand, the concept of CSR has evolved since its introduction, and academia and practitioners have attempted to define the idea of CSR in the last decades. Although the ambiguity of CSR led to ongoing debate and lack of consensus on what its idea really meant, Carroll (1979) came up with and employed four different categories of CSR to set out its concrete definition, which is stated as follows: "The social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time". From the perspective of its definitional construct, CSR activities enable firms to engage and interact with their stakeholders in attempts to deal with possible conflicts of interest between them, surpassing their traditional responsibility of making profits for shareholders (Cheng et al. 2014).

Above mentioned discussion on components and definitional construct of CSR leads to a question as to what could possibly motivate firms to be engaged in CSR activities, which incur costs. With respect to this point of view, Friedman (1970) brings a perspective where he states that "there is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud". Differently put, firms engaging in CSR may not be considered desirable, as this would be against their only responsibility of increasing profits.

1.1 Research Question

In fact, despite increasing importance and attention on CSR, whether CSR improves financial returns for firms is arguable to a greater extent (Attig et al. 2013). Furthermore, in spite of continuous attempts to examine the effect of CSR on firm performance in the academic literatures, the empirical results and the effects remain highly debatable with contrasting views (Margolis and Walsh, 2001). Subsequently, such largely contradicting empirical results lead this paper to examine whether firms engaging in CSR activities benefit from improved credit ratings as part of financial return by answering the main research question:

Do firms with higher CSR performance benefit from higher firm credit ratings?

Focusing on financial benefits that CSR brings to firms, this study aims to examine the effect of CSR on firms' credit ratings, which indicate their overall creditworthiness and degree to which they are capable of satisfying their financial obligations (Ashbaugh-Skaife et al. 2006). This study's focus on the relation between CSR and credit ratings as part of its financial return is largely motivated by a number of research on the relevant field of studies (Ashbaugh-Skaife et al. 2006; Weber et al. 2010; Attig et al. 2013; and Jiraporn et al. 2014).

1.2 Practical and Scientific Relevance

In terms of the relevance of this study to practice, managers will likely be better informed regarding the rationale to invest in CSR engagements (Attig et al. 2013). A positive relationship that results from an empirical analysis of financial returns to CSR can provide managers with incentives to increase investments in CSR, while a non-positive relationship would trigger further research on the field of CSR. On the other hand, examining the effect of CSR on firm credit ratings is practically relevant from the perspective of investors, because whether firms benefit from CSR engagement can affect financial markets' perception on socially responsible firms. For example, mutual fund managers who invest in socially responsible firms can increase investments in firms that achieve high CSR scores, given that better CSR engagement is associated with higher financial performance.

The scientific relevance of this study, on the other hand, is that examining the effect of CSR on firm credit ratings as a type of financial return will contribute to support a particular side of contradicting opinions on CSR studies that are largely unanswered with mixed results.

1.3 Research Method

In attempts to answer the main research question, this paper hypothesizes that CSR has positive impact on firm credit ratings. In testing the hypothesis, 2,923 North American firms are observed from 2008 to 2012 for collecting CSR, credit ratings, and other accounting-related data, which results in a panel of 10,896 sample observations. Considering the panel data and taking the fact that firms differ from each other in nature into account, fixed-effect panel regression is performed to test the hypothesis. With the statistical results, the main research question is ultimately answered.

1.4 Thesis Outline

The remainder paper consists of the following sections: Literature Review; Data and Methodology; Main Findings; and Conclusion. In the "Literature Review" section,

the evolution of CSR definitions are discussed, which proceeds further to discuss both financial and non-financial returns to CSR. “Data and Methodology” section follows with explanations on sample selection process, dependent, independent and control variables, and regression model. The regression results are carefully analyzed and discussed in “Main Findings” section, after which “Conclusion” follows.

Chapter 2 Literature Review

The purpose of this chapter is to provide in-depth theoretical framework that is necessary to draw the main topic on the relationship between CSR and firm credit ratings. In order to achieve this aim, Chapter 2 is subdivided in to three sections. In 2.1, definitional construct of CSR is discussed, including where the concept of CSR stands in current periods. In 2.2, both financial and non-financial returns to CSR are discussed, and the financial returns to CSR further expand in 2.3 to provide thorough framework for examining impact of CSR on credit ratings as part of financial returns.

2.1. Evolution and Definition of CSR

Because the concept and idea of CSR has changed and evolved since its introduction to the modern period by Howard R. Bowen (1953), it is important to discuss how far the definitional construct of CSR has evolved and what the most relevant definition is for the current period of time.

Bowen's (1953) book, *Social Responsibilities for Businessman*, is considered to have provided the groundwork for CSR, defining it as "obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society". Bowen's study in the field of CSR was relevant to the social phenomena where large corporations were powerful and influential that their decision-making and actions had great impact on lives of citizens (Carroll, 1999). Studying the evolution of definitional construct of CSR, Carroll (1999) called Bowen "father of corporate social responsibility".

Largely affected by social movements in the US in the 1960s, such as civil rights, women's rights, consumers' rights and the environmental movement, the concept of CSR was further developed and became concrete, though the exact meaning of CSR was not completely identical as what firms perceive nowadays (Carroll and Shabana, 2010). Although the foundation of CSR achieved concrete advancement to some extents, Carroll and Shabana (2010) state that not everyone welcomed the idea of CSR, such as Professor

Theodore Levitt who argued that businesses were not responsible for social concerns and general welfare, but the government would be. Nevertheless, Carroll and Shabana (2010) argue 1960s was the period when the significant progress on the field of CSR was achieved, focusing on defining the true meaning of CSR and exploring its importance to business and society. During this time, Keith Davis, William C. Frederick, Joseph McGuire, and Patrick Murphy led studies on CSR in attempts to provide concrete definitions for CSR (Carroll, 1999).

The meaning of CSR became formally defined in the 1970s when Carroll (1979) describes CSR as 'the social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time'. This definitional construct of CSR by Carroll has been widely accepted by the academia and successfully applied in CSR research for over 25 years (Carroll and Shabana, 2010). Regarding definitional construct of CSR, Woods (1991) summarizes the basic idea of CSR by arguing that society expects business to behavior in an appropriate way and generate ideal outcomes because the relationship of business and society is interrelated rather than separate.

Next, the 1980s and 1990s can be summarized as fewer definitions for CSR, more empirical research, and development of alternative themes, such as corporate public policy, business ethics, corporate social performance (CSP) and stakeholder theory (Carroll, 1991). Lastly, in the early 2000s, firms' attention on sustainability grew rapidly, a theme that was developed within the field of CSR (Carroll and Shabana, 2010). To sum up, in modern literatures, the idea of CSR can be summarized as that CSR refers to voluntary actions that benefit not only shareholders, but also stakeholders and ultimately the society to which firms belong, in attempts to efficiently manage possible conflicts of interest among stakeholders regarding economic, environmental, social and ethical matters (Cheung et al. 2010). Specifically, such CSR activities include environmental compliance, product safety, promotion of human rights, firm reputation, social engagement, and support for local businesses (Jiraporn et al. 2014),

2.2. Returns to CSR

Having explored the evolution of definitional construct of CSR, this section further expands to examine possible returns to CSR, both financial and non-financial, with contrasting views regarding the idea of CSR. Since its introduction to the business world, the idea of CSR has accompanied conflicting arguments, both for and against CSR. When it comes to returns to CSR, Margolis and Walsh (2003) documented that out of 109 studies where corporate social performance was treated as an independent variable in predicting firms' financial performance, 54 results showed a positive relationship, 7 studies reported a negative relationship, 28 results reported non-significant relationships, and 28 studies showed mixed results. Although this result shows that almost half of studies reported a positive relationship between firms' corporate social performance and their financial performance, examining whether CSR results in positive effect on financial performance still requires more empirical studies.

Arguments that are against the idea of CSR include Theodore Levitt's view (1958) where he argued that it is the government that should resolve social concerns and general welfare, not businesses. This is consistent with Milton Friedman's (1970) articulation where he insists that the one and only responsibility of business is to maximize profits of shareholders. Friedman argues that social problems are not what businesses are responsible for, but they should be dealt with in the free market. Even in the case when the free market does not function in resolving those problems, Friedman believes that government and legislation would be responsible for them (Friedman, 1970).

On the other hand, it also holds that shareholders who seek for profit maximization have no incentive to bear costs incurred by CSR activities, unless it contributes to maximizing profits as Friedman objects; otherwise CSR is costly (Baron, 2007). Furthermore, investors of socially responsible investing (SRI) funds, which invest in firms with high CSR performance, expect to earn lower returns, implying that CSR engagement is not desirable for profit maximization as it incurs costs (Riedl and Smeets, 2017). Other arguments against the idea of CSR include that business will likely lose its competitiveness in markets and that business managers have expertise in finance or

operations that are irrelevant to socially oriented issues, all of which imply negative effect of CSR on firms' financial and non-financial performances (Carroll and Shabana, 2010).

In contrast to the previous discussions on arguments against CSR, arguments that are in favor of CSR focus on firms' long-term self-interested orientation towards social responsibility. In other words, engaging in CSR in present time benefits firms for their future survival, which is in line with their long-term interests (Carroll and Shabana, 2010). Moreover, Carroll and Shabana (2010) argue that public also strongly supports engagements of firms in CSR in the belief that they should be responsible for stakeholders as well as pursuing profits, despite cost incurrences. Carroll and Shabana (2010) continue with positive returns to CSR by arguing that it enables firms to defend or improve their reputations and legitimacy.

Furthermore, based on a review of 588 journal articles and 102 books, Aguinis and Glavas (2012) documented both financial and non-financial returns to CSR. According to the literature's institutional, organizational, and individual levels of analysis, CSR contributes to firms' improvement in competitive advantage and attractiveness to institutional investors. In addition, firms engaging in CSR benefit from improved operational efficiencies, product quality, loyalty and demographic diversity of gender and races. Lastly, CSR brings a positive impact on individual levels for it leads to improved employee engagement, employee commitment, employee relations, and firm attractiveness to prospective (Aguinis and Glavas, 2012).

Lastly, many research have been conducted on examining positive effects of CSR on firms' financial performance. For instance, Peloza (2009) documented that 59% of 128 reviewed studies reported a positive relationship, while only 14% showed a negative relationship. On the other hand, Cheung et al. (2010) expanded the application of CSR to Asia and examined whether CSR matters in Asian Emerging Markets, where they documented a significantly positive relationship between CSR and market valuation of firms. Debates on whether there are positive or negative returns to CSR have existed

since its advent decades ago. To some extents, demonstrating a positive relation between CSR and firm performance could reverse Friedman's argument that firms should only consider maximizing profits (Carroll and Shabana, 2010).

2.3. CSR and Credit Ratings

As part of CSR's financial performance, many studies examined the effect of CSR on firms' creditworthiness where they reported a positive relationship between the two variables (Ashbaugh-Skaife et al. 2006; Weber, 2006; Weber et al. 2010; Attig et al. 2013; Jiraporn et al. 2014; and Hsu and Chen, 2015).

To start off, rating agencies, such as Standard & Poor's, Fitch Ratings and Moody's, produce firms' credit ratings by assessing their ability to fulfill bondholders, which is dependent on their future cash flows. In other words, firm ratings are related to whether a firm is capable of covering interests as well as principal payments for its bondholders, thus an increase in variance of the future cash flow will likely lead to an increased likelihood of default, hence decline of the firm's credit rating (Ashbaugh-Skaife et al. 2006). As a result of the rating agencies' assessment of risks, investors in the financial market benefit by reduced effort and become ready to assess risks of a large number of firms (Jiraporn et al. 2014). Thus, credit ratings provide lenders with additional values (Hsu and Chen, 2015).

When it comes to the relation of CSR to credit ratings, Attig et al. (2013), who documented that firms with good social performance are rewarded with higher credit ratings, state that S&P, one of the major rating agencies, assesses business risk and financial risk of firms with criteria that fall on CSR activities. In fact, the primary purpose of rating agencies is to assess a firm's risk from a broad set of perspectives, and it is reasonable to posit that the firm's engagement in CSR activities, such as the management's handling of employees and unions so that the firm's operations are not severely affected by a possible strike, presumably lead to a positive assessment of the firm's risk. Attig et al. (2013) argue that credit rating agencies analyze CSR information in their assessment of firms' creditworthiness for CSR affects their both financial and

non-financial aspects, such as strength of management control and sustainability. Furthermore, CSR activities contribute to improve relations with stakeholders and sustainability in the long run, signal efficient use of resources, and decrease costs that incur due to any involvement in socially irresponsible behavior (Attig et al. 2013).

The view on the positive effect of CSR on firm credit rating is in line with Jiraporn et al. (2014), who reported a positive relationship between a degree of firms' social responsibility and their credit ratings, where they argue that CSR engagement is associated with reduced degree of risk as it "helps firms build positive moral capital that insulates them from adverse events in the future". It also holds that the elimination of risk from CSR activities has positive impact on credit ratings, for the primary concern of bondholders and rating agencies is the assessment of default risk (Jiraporn et al. 2014).

On the other hand, Ashbaugh-Skaife et al. (2006) approach returns to CSR by focusing on a particular element of CSR, corporate governance, and show that firms with strong governance are rewarded with higher credit ratings than those with weaker governance. In relation to agency theory, strong corporate governance can reduce conflicts between managers and stakeholders, such as bondholders and shareholders, by promoting "effective managerial decision making that increases firm value and guard against opportunistic management behavior that decreases firm value" (Ashbaugh-Skaife et al. 2006). Firms that strengthen their corporate governance as part of CSR engagement will likely be equipped with better decision-making capability and limited opportunistic behavior of managers, benefiting their stakeholders. Thus, by reducing agency costs arising from the conflict of interests, firms benefit from higher credit ratings. On the other hand, weaker corporate governance increases conflict of interests and negatively affects the firm's future cash flows, which in turn increases chance to default and thus lowers credit ratings (Ashbaugh-Skaife et al. 2006).

In short, previous arguments and discussions can be summarized as that CSR is considered to reduce perceived risk of financial distress (Attig et al. 2013). Such a positive effect of CSR, in turn, is taken into consideration by credit rating agencies, thus reflected in the assessment of firms' creditworthiness (Jiraporn et al. 2014). Following

the broad set of arguments discussed so far, this paper hypothesizes that CSR engagement has positive impact on firms' credit ratings. By testing the hypothesis whether CSR positively affects credit ratings, this paper aims to answer the main research question.

Chapter 3 Data and Methodology

In this chapter, data and research design are thoroughly discussed, which include subsections for sample selection, dependent variables, independent variables, control variables, and methodology, that are necessary for testing the hypothesis whether CSR has positive impact on firm credit ratings, and for ultimately answering the research question of this paper.

3.1. Sample Selection

To examine the effect of CSR on firms' credit ratings, relevant data are obtained from the following sources: (1) *MSCI ESG KLD STATS* (formerly KLD and GMI) for firms' CSR scores, and (2) *Compustat* for firms' credit ratings and financial statement data such as total assets and long-term debt. In order to control certain variables in a regression model, firms contain information on their total assets and long-term debt in *Compustat*. The sample selection concerns 2,923 firms based in North America, which are observed for periods from 2008 to 2012. Merging relevant variables based on firms' unique Ticker Symbol yields a panel of 10,896 observations that are adequate for an analysis. The following table (Table 1) presents the sample breakdown by industry according to the Global Industry Classification Standard (GICS).

Table 1 Sample breakdown by industry

Industry	Observations	Percentage
Energy	632	5.80
Materials	567	5.20
Capital Goods	1,024	9.40
Commercial & Professional Services	350	3.21
Transportation	217	1.99
Automobiles & Components	105	0.96
Consumer Durables & Apparel	370	3.40
Consumer Services	373	3.42
Media	240	2.20
Retailing	501	4.60

Food & Staples Retailing	98	0.90
Food, Beverage & Tobacco	257	2.36
Household & Personal Products	89	0.82
Health Care Equipment & Services	767	7.04
Pharmaceuticals, Biotechnology & Life Sciences	638	5.86
Banks	938	8.61
Diversified Financials	384	3.52
Insurance	438	4.02
Software & Services	719	6.60
Technology Hardware & Equipment	653	5.99
Semiconductors & Semiconductor Equipment	424	3.89
Telecommunication Services	155	1.42
Utilities	379	3.48
Real Estate	578	5.31
Total	**10,896**	**100**

3.2. Firm Credit Ratings

Following previous research on returns to CSR in terms of improvements in firms' credit ratings (e.g., Ashbaugh-Skaife et al. 2006; Attig et al. 2013), S&P's long-term issuer credit ratings are obtained in *Compustat*'s annual update for North American firms to evaluate firms' credit ratings. The S&P ratings range from AAA to SD (selective default), which are converted into an ordinal scale so that credit ratings (*CreditRating*) are expressed in numerical values; the highest score of 22 is assigned to AAA while the lowest 1 is assigned to SD. The full conversion table is presented in "Appendix A". In addition, the following Table 2 shows the mean and standard deviation of firms' credit ratings in the ordinal scale.

Table 2 Descriptive statistics for credit ratings by year

Years	Mean	Standard Deviation
2008	5.1794207	6.5760306
2009	5.1433008	6.5375665
2010	5.4482918	6.6324734
2011	5.7276322	6.7117759

2012	5.8863753	6.7605233
Total	**5.4583684**	**6.6441929**

3.3. Corporate Social Responsibility

In measuring firms' CSR, data are obtained from *MSCI ESG KLD STATS* (formerly known as KLD and GMI). Initiated in 1991, *MSCI ESG KLD STATS* publishes data set of firms' performances regarding positive and negative environmental, social, and governance (ESG) aspects on annual basis[1]. The data set is widely used in research on CSR (Chatterji et al. 2009).

The data set measures a firm's ESG performance for both positive and negative aspects, focusing on multi-dimension qualitative criteria such as diversity, environment, employee relations, human rights, community, corporate governance and product. For instance, a firm is evaluated upon whether it addresses environmental issues in which it operates, and a positive evaluation would be added as "Strength" as part of the firm's CSR assessment. For each positive and negative indicator, a simple binary scoring model is applied where "1" is assigned if a firm satisfies the assessment criteria while "0" is assigned if a firm does not satisfy the assessment criteria. As a result, each of the seven qualitative indicators consists of "Strengths" and "Concerns". Detailed construction of the qualitative indicators including the criteria for "Strengths" and "Concerns" assessments are illustrated in "Appendix B".

For each qualitative focus, the total number of "Concerns" is subtracted from the total number of "Strengths", and the net results from the seven qualitative indicators are summed up to present firms' overall CSR scores (*CSRSum*). Table 3 below provides the mean and standard deviation of overall CSR scores for the periods of concern.

[1] More information details are available in MSCI's report "MSCI KLD STATS: 1991-2014 DATA SETS" published in June 2015.

Table 3 Descriptive Statistics for overall CSR scores by year

Years	Mean	Standard Deviation
2008	-0.63188505	2.251922
2009	-0.62262038	2.2927516
2010	-0.68584071	2.8022441
2011	-0.98397575	3.3387857
2012	0.89066918	2.4249834
Total	**-0.44747983**	**2.7020851**

3.4. Control Variables

To prevent omitted variable bias in relation with the CSR variable (*CSRSum*), the independent variable, a number of variables are added as control variables. First, a firm's leverage (*Leverage*) is taken into account, which is calculated by dividing long-term debt by total assets measured in millions of US dollars, because firms that have higher leverages face greater risk of default (Ashbaugh-Skaife et al. 2006).

Next, a firm's size (LnAssets) is controlled, which is calculated as the natural logarithm of a firm's total assets. Firms that are large in size are more likely to receive attention from the public, pressuring them for corporate social responsibility disclosures (Cowen et al. 1987). On the other hand, it is argued that a firm size also affects firm credit ratings, the dependent variable of this study, because firms that are large in size are less likely to default and more likely to achieve higher credit ratings as a result (Blume et al. 1998).

Table 4 below provides summary statistics for the dependent, independent, and control variables. The following Table 5 presents correlations between the regression variables where values with star (*) are significant at 5% level.

Table 4 Summary statistics for regression variables

Variable	Mean	Std. Dev.	Min	Max
CreditRating	5.458368	6.644193	0	22

CSRSum	-0.4474798	2.702085	-11	19
LnAssets	7.474982	1.7766	-3.816713	14.67381
Leverage	0.1942776	0.2207261	0	3.675002

Table 5 Correlation matrix

	CreditRating	*CSRSum*	*LnAssets*	*Leverage*
CreditRating	1.0000			
CSRSum	0.2411*	1.0000		
LnAssets	0.6840*	0.2863*	1.0000	
Leverage	0.2380*	-0.0373*	0.1578*	1.0000

3.5. Regression Model

To test whether CSR has positive impact on firm credit ratings, the null and alternative hypothesis are generated as follows:

H_0: CSR has no impact on firm credit ratings

H_1: CSR has positive impact on firm credit ratings.

Given that the cross-sectional relationship of the same firms are observed for five different time periods, and that firms are different from each other in nature, fixed effect panel model is used to test the hypothesis with the following equation:

$$CreditRating_{i,t} = \beta_1 * CSRSum_{i,t} + \beta_2 * LnAssets_{i,t} + \beta_3 * Leverage_{i,t} + \alpha_i + \varepsilon_{i,t}$$

$CreditRating_{i,t}$: firm i's credit rating at time t

$CSRSum_{i,t}$: firm i's CSR score at time t

$LnAssets_{i,t}$: firm i's natural logarithm of total assets at time t

$Leverage_{i,t}$: firm i's leverage measured as ratio of the long-term debt to total assets at time t

$\varepsilon_{i,t}$: error term

Chapter 4 Main Findings

In this section, the empirical results are presented and carefully analyzed. Given the fact that the cross-sectional relationship of the same firms are observed over periods of five years, from 2008 to 2012, and that different nature between firms need controlling, fixed effects panel regression is used. With the empirical results, whether the models are statistically significant in explaining the effect of CSR on firm credit ratings is discussed. Also, reliability and validity of the regression analysis are discussed.

All models regress firm credit rating (*CreditRating*) on CSR (*CSRSum*) where *CreditRating* is the key dependent variable and *CSRSum* is the independent variable, while control variables *LnAssets* and *Leverage* vary with models. The fixed effect panel regression results for different models are summarized in Table 6.

Table 6 Results of fixed effect panel data regression analysis

Dependent variable: Firm credit rating (*CreditRating*)				
Regressor	Estimated coefficient			
	Model (1)	Model (2)	Model (3)	Model (4)
Constant	-3.861881***	-3.995343***	5.04988***	5.467207***
	(1.16432)	(-1.191493)	(0.0862238)	(0.0043072)
CSRSum	0.0083137	0.0078625	0.0216873**	0.0217624**
	(0.0103194)	(0.0103041)	(0.0105883)	(0.0106055)
LnAssets	1.19855***	1.262283***		
	(0.1522641)	(0.1589164)		
Leverage	1.760132***		2.163264***	
	(0.3922971)		(0.4424797)	
Observations	10,665	10,665	10,665	10,701
Adj. R-squared	0.4864	0.4684	0.0714	0.0581
F statistics	(22.99***)	(32.05***)	(13.08***)	(4.21**)

Model (1): $CreditRating_{i,t} = \beta_1 * CSRSum_{i,t} + \beta_2 * LnAssets_{i,t} + \beta_3 * Leverage_{i,t} + \alpha_i + \varepsilon_{i,t}$

Model (2): $CreditRating_{i,t} = \beta_1 * CSRSum_{i,t} + \beta_2 * LnAssets_{i,t} + \alpha_i + \varepsilon_{i,t}$

Model (3): $CreditRating_{i,t} = \beta_1 * CSRSum_{i,t} + \beta_2 * Leverage_{i,t} + \alpha_i + \varepsilon_{i,t}$

Model (4): $CreditRating_{i,t} = \beta_1 * CSRSum_{i,t} + \alpha_i + \varepsilon_{i,t}$

Robust standard errors are provided in parentheses below coefficients.

Individual coefficient is significant at the ***1%, **5%, or *10%.

To begin with, Model (4), which regresses firm credit rating on CSR scores without controlling for firm size and leverage, verifies a positive relationship between the two variables as previously assumed. The *CSRSum*'s positive coefficient of 0.0217624 indicates that positive CSR contributes to improvement of firm credit rating, and the result is statistically significant at 5% level.

When leverage (*Leverage*), calculated as a ratio of the long-term debt to total assets, is added as a control variable in Model (3), a positive coefficient of *CSRSum* is observed (0.0216873) that is significant at 5%, denoting that firms with better CSR benefit from higher credit ratings. The added control variable, *Leverage*, is also statistically significant at 1% level with a positive coefficient of 2.163264. However, the positive sign is not in line with previous assumption that firm leverage, or debt, is negatively associated with credit ratings. By adding the control variable, the adjusted R-squared, which measures the extent to which the independent variable has explanatory power over the change of the dependent variable, improves from 5.81% to 7.14% compared with Model (3).

In Model (2), on the other hand, presents the regression analysis when firm size (*LnAssets*), measured as the natural logarithm of total assets, is added as a control variable instead of *Leverage*. Although the positive coefficient of *LnAssets* (1.262283), which is significant at 1%, is in line with previous attention that firms that are bigger in size consider CSR to greater extents due to public attention, the independent variable *CSRSum* is not statistically significant with the positive value of 0.0078625. Hence, according to Model (2), not enough evidence is observed to reject the null hypothesis that there is no positive relationship between CSR and firm credit ratings.

Finally, both *LnAssets* and *Leverage* are included as control variables in Model (1) that regresses *CreditRating* on *CSRSum*. Coefficients of both *LnAssets* and *Leverage* are significant at 1% with values 1.l9855 and 1.760132 respectively. The positive values

indicate that firms that are bigger in size and with higher debt benefit from higher firm credit ratings. Positive value of 0.0083137 is observed for the coefficient of *CSRSum*, however, as with Model (2), the independent variable turns out to be statistically non-significant. As a result, Model (1) does not provide enough evidence to reject the null hypothesis that there is no positive relationship between CSR and firm credit ratings. This result is not in line with previous research that documented a positive relationship between CSR and firm credit ratings (e.g., Ashbaugh-Skaife et al. 2006; Attig et al. 2013).

All four models are significant when it comes to F-test results; Model (1), Model (2), Model (3) are significant at 1% and Model (4) is significant at 5%. Also, the adjusted R-squared constantly improves as more variables are added as control variables in the models. However, the regression analysis denotes that the independent variable *CSRSum* is not statistically significant in Model (1) and Model (2). Considering Model (1), result is drawn that not enough evidence is found to reject the null hypothesis that CSR has no impact on firm credit ratings when firm size and leverage are taken into account as control variables. More specifically, there is no evidence that North American firms with better CSR do not benefit from higher credit ratings for observed periods from 2008 to 2012.

A number of implications are worth being discussed in assessing reliability and validity of the empirical results. The first discussion point is in relation with possibility of omitted variable bias, which is associated with the error term ε containing variables that are correlated with the independent variable while partially determine the dependent variable. Although Model (1) takes *LnAssets* and *Leverage* into account as control variables in an attempt to get rid of omitted variable bias, other factors that could lead to omitted variable bias might have been excluded. For instance, accounting-based ratios such as return-on-assets and interest coverage can in part determine the dependent variable *CreditRating* as lower value of return-on-assets or interest coverage implies greater default risk, hence affects a firm's credit rating (Ashbaugh-Skaife et al. 2006). Furthermore, because performance, level of R&D investment and default risk vary across

industries, not controlling for industry variable can lead to omitted variable bias (Waddock and Graves, 1997). Also, it is reasonable to assume that certain industries consider CSR engagement to a greater extent due to their operating nature and impact on society, such as oil and energy industry.

On the other hand, different methodology such as ordered probit model or ordered logit model can examine the relationship between CSR and firm credit ratings more accurately than the fixed effect panel regressions did. Firstly, compared with the fixed effect panel regression, ordered probit model can result in more adequate analysis by taking the ordinal, or discrete, characteristic of the dependent variable *CreditRating* into account (Attig et al. 2013). Next, also in relation with the nature of firm credit ratings, ordered logit model overcomes the fact that the twenty-two categories in credit ratings are prone to ordinal risk assessment; that is, benefits among the categories are not guaranteed to be uniform (Ashbaugh-Skaife et al. 2006).

Chapter 5 Conclusion

Apart from traditional objective of maximizing profits for shareholders, firms nowadays highly engage in CSR, the concept that is understood as voluntary actions that benefit stakeholders by efficiently managing possible conflicts of interest concerning environmental, social, economic and ethical issues. Despite costs that arise from enhancing CSR, on the one hand, firms benefit from CSR engagements, such as, among others, improved attractiveness to institutional investors, operational efficiencies, product quality, loyalty and demographic diversity of gender and races.

In terms of financial returns to CSR, on the other hand, whether firms that engage in CSR activities benefit from improved financial performance is largely unanswered with mixed results, including positive, negative, U-shaped and inverse-U shaped relations (Cheng, 2014). Amid such contradicting empirical results on returns to CSR, this paper attempts to examine whether firms with better CSR benefit from higher credit ratings by observing firms in North America for periods from 2008 to 2012.

The fixed effect panel regression analysis from hypothesis test of whether CSR engagement has positive impact on firm credit ratings documents that CSR is not statistically significant to explain its positive impact on firm credit ratings. In other words, the non-rejection of the hypothesis indicates supporting evidence that firms with better CSR benefits from higher credit ratings. Therefore, regarding the answer to the main research question of this paper, firms with higher CSR performance do not benefit from higher firm credit ratings, according to the empirical results. Furthermore, the finding also suggests that the rating agencies such as S&P do not consider factors related to CSR to a significant extent in assessing creditworthiness of firms. This concluding remark is in line with arguments that are against the concept of CSR, including Friedman who considers investing in CSR activities to be "fraud" as long as it does not contribute to profit increases.

On the other hand, it is worth discussing implications of this study with respect to the research design. Also as discussed in "Main Findings" section, different outcome can

result with different research designs, such as adopting ordered logit or probit model, which is considered more appropriate in terms of methodology and better manages omitted variable bias. Furthermore, incorporating control variables other than firm size and leverage can strengthen the adequacy and validity of the regression model, further preventing omitted variable bias.

In spite of rather challenging and contradicting results, CSR studies should continue in future research for the following reasons. First, not only do firms consider CSR important, but also investors, such as asset managers, evaluate firms in CSR aspects with focuses on environmental, social and governance factors in their investment decision-making processes. The moral implications with respect to environmental, social, and governance matters have led socially responsible investments (SRIs) to grow tremendously, especially in Europe and the United States, which explicitly invest in firms with better CSR (Riedl and Smeets, 2017). Furthermore, the idea of CSR has recently started gathering attention in Asia, and it may be interesting to explore the returns to CSR with application to Asian markets that are not analogous to those of Western countries. Asian firms are characterized by lower transparency while higher family ownership, and it may be interesting to examine to what extent CSR is applicable in Asian markets concerning returns to CSR (Cheung et al. 2009).

Appendix

Appendix A: Conversion of S&P credit ratings to an ordinal scale

Rating	Conversion scale
AAA	22
AA+	21
AA	20
AA-	19
A+	18
A	17
A-	16
BBB+	15
BBB	14
BBB-	13
BB+	12
BB	11
BB-	10
B+	9
B	8
B-	7
CCC+	6
CCC	5
CCC-	4
CC	3
D	2
SD	1

Appendix B: Qualitative focuses of CSR assessment by *MSCI ESG KLD STATS*

Qualitative focuses	**Strengths**	**Concerns**
Community	Charitable giving Innovative giving Support for housing Support for education Non-US charitable giving Volunteer programs	Investment controversies Community impact Tax disputes Other concerns

	Community engagement	
	Other strengths	
Corporate Governance	Limited compensation	High compensation
	Ownership strength	Ownership concern
	Reporting quality	Accounting concern
	Political accountability strength	Reporting quality
	Public policy strength	Political accountability concern
	Corruption & political instability	Public policy concern
	Financial system instability	Governance structures
	Other strengths	Controversial investments
		Business Ethics
		Other concerns
Diversity	CEO	Workforce diversity
	Promotion	Non-representation
	Board of Directors – Gender	Board of directors gender
	Work-life benefits	Board of directors – minorities
	Women and Minority Contracting	Other concerns
	Employment of the Disabled	
	Gay and lesbian policies	
	Employment of underrepresented groups	
	Other strengths	
Employee relations	Union relations	Union relations
	No-layoff policy	Employee health & safety
	Cash profit sharing	Workforce reductions
	Employee Involvement	Retirement benefits concern
	Retirement benefits strength	Supply chain
	Employee health and safety	Child labor
	Supply chain labor standards	Labor-management relations
	Compensation & benefits	
	Employee relations	
	Professional development	
	Human capital management	
	Other strength	
Environment	Environmental opportunities	Hazardous waste
	Waste management	Regulatory compliance
	Packaging materials & waste	Ozone depleting chemicals
	Climate change	Toxic spills & releases
	Property, plant, equipment	Agriculture chemicals
	Environmental management systems	Climate change
	Water stress	Impact of products & services
	Biodiversity & land use	Biodiversity & land use
	Raw material sourcing	Operational waste
	Other strengths	Supply chain management
		Water management
		Other concerns
Human rights	Positive record in South Africa	South Africa
	Indigenous peoples relations strength	Northern Ireland

	Labor rights strength	Support for controversial regimes
	Human rights policies & initiatives	Mexico
		Labor rights concern
		Indigenous peoples relations concern
		Operations in Sudan
		Freedom of expression & censorship
		Human rights violations
		Other concerns
Product	Quality	Product quality & safety
	R & D, innovation	Marketing & advertising
	Social opportunities	Anticompetitive practices
	Access to Finance	Customer relations
	Other strenghts	Other concerns

References

Aguinis, H., & Glavas, A. (2012). What We Know and Don't Know About Corporate Social Responsibility: A Review and Research Agenda. *Journal of Management,38*, 932-968. doi:10.1177/0149206311436079

Ashbaugh-Skaife, H., Collins, D. W., & Lafond, R. (2006). The Effects of Corporate Governance on Firms Credit Ratings. *Journal of Accounting and Economics*. doi:10.2139/ssrn.511902

Attig, N., Ghoul, S. E., Guedhami, O., & Suh, J. (2013). Corporate Social Responsibility and Credit Ratings. *Journal of Business Ethics*. doi:10.2139/ssrn.2081942

Baron, D. P. (2007). Corporate Social Responsibility and Social Entrepreneurship. *Journal of Economics & Management Strategy,16*, 683-717.

Blasco, J. L., & King, A. (n.d.). *The KPMG Survey of Corporate Responsibility Reporting 2017*(Rep.). KPMG.

Blume, M. E., Lim, F., & Mackinlay, A. C. (1998). The Declining Credit Quality of U.S. Corporate Debt: Myth or Reality? *The Journal of Finance,53*(4), 1389-1413. doi:10.1111/0022-1082.00057

Bowen, H. R. (2013). *Social responsibilities of the businessman*. IA City, IA: University of Iowa Press.

Carroll, A. B. (1979). A Three-Dimensional Conceptual Model of Corporate Performance. *The Academy of Management Review,4*(4), 497. doi:10.2307/257850

Carroll, A. B. (1999). Corporate Social Responsibility. *Business & Society,38*(3), 268-295. doi:10.1177/000765039903800303

Carroll, A. B., & Shabana, K. M. (2010). The Business Case for Corporate Social Responsibility: A Review of Concepts, Research and Practice. *International Journal of Management Reviews*.

Chatterji, A., Levine, D. I., & Toffel, M. W. (2009). How Well Do Social Ratings Actually Measure Corporate Social Responsibility? *Journal of Economics & Management Strategy,18*, 125-169. doi:10.2139/ssrn.993094

Cheng, B., Ioannou, I., & Serafeim, G. (2014). Corporate Social Responsibility and Access to Finance. *Strategic Management Journal,35*. doi:10.1002/smj.2131

Cheung, Y. L., Tan, W., Ahn, H., & Zhang, Z. (2010). Does Corporate Social Responsibility Matter in Asian Emerging Markets? *Journal of Business Ethics,*401-413. doi:10.1007/s10551-009-0164-3

Cowen, S. S., Ferreri, L. B., & Parker, L. D. (1987). The impact of corporate characteristics on social responsibility disclosure: A typology and Frequency-based analysis. *Accounting, Organizations and Society,12*, 111-122.

Friedman, M. (n.d.). The Social Responsibility of Business Is to Increase Its Profits. In *Corporate Ethics and Corporate Governance*(pp. 173-178). Springer.

Hsu, F. J., & Chen, Y. (2015). Is a firm's financial risk associated with corporate social responsibility? *Management Decision,53*, 2175-2199. doi:DOI 10.1108/MD-02-2015-0047

Jiraporn, P., Jiraporn, N., Boeprasert, A., & Chang, K. (2014). Does Corporate Social Responsibility (CSR) Improve Credit Ratings? Evidence from Geographic Identification. *Financial Management,43*(3), 505-531. doi:10.1111/fima.12044

Levitt, T. (1958). The Dangers of Social Responsibility. *Harvard Business Review*.

Margolis, J. D., & Walsh, J. P. (2003). Misery Loves Companies: Rethinking Social Initiatives by Business. *Administrative Science Quarterly,48*(2), 268. doi:10.2307/3556659

MSCI ESG KLD STATS: 1991-2014 DATA SETS(Rep.). (n.d.). MSCI ESG Research.

Peloza, J. (2009). The Challenge of Measuring Financial Impacts From Investments in Corporate Social Performance. *Journal of Management,35*(6), 1518-1541. doi:10.1177/0149206309335188

Riedl, A., & Smeets, P. (2017). Why Do Investors Hold Socially Responsible Mutual Funds? *The Journal of Finance,72*(6), 2505-2550. doi:10.1111/jofi.12547

Trebucq, S., & Darcimoles, C. (1997). The Corporate Social Performance-Financial Performance Link: Evidence from France. *Strategic Management Journal,18*, 303-319. doi:10.2139/ssrn.306599

Weber, O., Scholz, R. W., & Michalik, G. (2008). Incorporating sustainability criteria into credit risk management. *Business Strategy and the Environment*. doi:10.1002/bse.636