IMPLICATIONS OF CORPORATE SOCIAL RESPONSIBILITY ON CREDIT RATING: A CONTEXT OF DEVELOPING ECONOMY

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ABSTRACT

This study wants to explore the implications of corporate social responsibility on credit system rating in non-financial corporations of a developing country. Ordered probit regression model has been implementing for data analysis for a sample period of 2013-2019. This data analysis distributed in three phases, overall analysis, initial and ending analysis because of data availability. Firstly, descriptive statistics showed normality of data and correlation statistics indicated a relationship between corporate social responsibilities as independent variable, credit rating and a group of control variables. In all three phases, corporate social responsibility is significantly and positively contributing to the systematic determination of credit rating of organizations and control variables are showing some deviating results. These significant positive results of CSR on credit ratings suggest that by increasing a firm's credit rating, investment in CSR activities is likely to increase the firm value and shareholders' value. Credit rating agencies tend to grant moderately high appraisals to firms who appreciate the great social performance. Discoveries of this study will help administrators and also financial specialists to better comprehend the impact of CSR using a loan evaluations and credit ratings.

Keywords: Corporate Social Responsibility, Credit Ratings, Ordered Probit Model, Non-financial sector, credit rating systems

INTRODUCTION

Corporate Social Responsibility (CSR) is a more extensive term with more extensive application and implications. It indicates responsibility of a firm to spend its assets on the general prosperity of the general public by designating its assets which are not mandatory by the law somewhat in view of the optional practices taken up by the firm (Kotler & Lee, 2008). It is characterized as an idea which organizations embrace intentionally and includes a mix of social and ecological worries in the operations of the organizations and these worries are likewise dealt with while cooperating with various partners (European Commission, 2001). As indicated by this meaning of CSR it is pronounced as optional in nature so it gets to be troublesome for organizations to have a very much characterized set of strategies on CSR.

It turns out to be difficult to portray what ought to be incorporated into the CSR arrangement. In this regard, firms have fused in their separate CSR strategies what they believe is correct in light of the fact that there are no basic benchmarks accessible rather it is upon the circumspection of each business to do on some portion of CSR what it needs to do (Matten & Moon, 2008). CSR is an idea whereby organizations include themselves with neighborhood groups, workers, and overall population in a manner that it brings about the prosperity of them furthermore benefits the business which prompts to general financial improvement (International Finance Corporation, 2008). As indicated by stakeholder's viewpoint, CSR is that if an organization acts socially responsible then it will likewise offer an advantage to the organization. It is in organization's own particular self-premium and will accomplish the upper hand with clients, financial specialists and workers (Starks, 2009). (Carroll, 1999) portrays the idea of CSR that includes four obligations: monetary, lawful, moral and charitable and society anticipates that organization will satisfy every one of them at any given purpose of time and with the adjustment in time and conditions business ought to likewise change their duties towards them.

The socially capable associations benefit chances of the upper hand, better execution, stakeholder's loyalty and better credit offers. This study expands the line of research as it explores the marvel that how corporate social responsibility influences the credit rating of a firm. Crediting rating gives data about the likelihood of the firm default and budgetary soundness of firms, in this manner wiping out replication of endeavors in monetary markets (Liu & Jiraporn, 2010). With the assistance of credit rating speculators can evaluate the hazard attributes of the organizations utilizing a solitary scale which serves as a standard and makes the equivalence of different firms simple. Besides, while making any agreements it is anything but difficult to evaluate the hazard qualities of a firm which is allocated credit rating assessments in light of the fact that the credit rating organization has done all the diligent work for this thing (Attig et al., 2013).

The primary purpose is to investigate the implications of CSR activities to influence the systematic credit ratings of any organization. CSR has more impact on credit market when contrasted with the stock market. As CSR activities influence both monetary and non-money related data it is placed that CSR related data is utilized by the credit rating offices while evaluating the financial soundness of a firm. (Dallas, 2004) has additionally contended that while doling out credit ratings, these agencies only consider the CSR execution of a firm. There are diverse studies that are identified with credit ratings which cover relationship of various firm attributes with it. These studies archive that these qualities have an impact on the firm.

With regards to Pakistan, there exist not very many studies where the impact of CSR is minded diverse firm qualities. (Kanwal et al., 2013) have led a study to dissect the effect of CSR on organizational performance. They proposed the significance of CSR and its impact on credit rating, however, have not given any exact discoveries. In Pakistan, CSR has recently been talked about with firm execution and money related execution. There are no proper researches where the impact of CSR on credit rating is measured. So the topic of whether CSR affects credit ratings or not, this phenomenon still existing.

This study has vital implications for corporate chief executives, managerial personnel and investors. Managerial personnel can decrease the cost of capital by enhancing money related execution. Administrators will have the capacity to inspect the beneficial parts of CSR for the business as it aides in inspiring more duty from workers. CSR engagements help the directors to create a solid association with government and nearby communal groups. CSR fabricates notoriety and goes about as activities prompt to change in long haul aggressiveness of the firm which lessens default probability of the business that is seen positively by credit rating organizations and these great credit ratings thusly help the organizations to diminish their financing costs.

This study will help investors to better see how CSR influences financing and will enhance their basic leadership. While contributing financial specialists are worried about the hazard qualities of the firm. Any activities of the firm that could constrain it to face prosecutions and government sanctions hamper the gainfulness of the firm which can have affect available cost of the share of the organization. This lessening in benefit could likewise bring about improved default probability. So it is similarly critical for the shareholders and additionally obligation holders to consider the social execution of the organization while settling on their speculation choices. So, above studies will help the investors in their financial decision making.

LITERATURE REVIEW

Kotler and Lee (2004) portray CSR is a company's dedication to spend its assets on the general prosperity of the general public by designating its assets which are not required by the law fairly base on the optional practices taken up by the firm. European Commission, (2001), CSR is characterized as an idea which organizations receive willfully and includes reconciliation of social and natural worries in the operations of the organizations and these worries are likewise dealt with while collaborating with various partners.

Corporate social responsibility could be presented in dual ways and (Carroll, 1999) portrays the environmental aspect of CSR that includes economic, legal, ethical and philanthropic responsibilities which anticipate that organizations will satisfy every one of them at any given purpose of time and with the adjustment in time and conditions business ought to likewise change their duties towards them. (Hopkins, 2004) express that the CSR is not another idea rather it has been since a long time ago it is being wrangled in the writing. However, there are a plenty of individuals who are ignorant on this idea. Furthermore, a considerable measure others have not yet acknowledged it. In current situation organizations are regularly observed to designate money related assets to be conveyed as magnanimity under the name of corporate social duty however not everybody has praised it.

Idemuia (2007) declares that the supporters of the ideas of CSR contend for it upon the accompanying premise: firstly, there has been excessively increment in the business being done on the cost of the general public for so long. Besides, these corporate elements have figured out how to accomplish so much power and the impact that at times they can stand firm against a legislature. Furthermore, he argued that this concept is much valid in developed countries while now becoming popular in developing nations. (Amalric & Hauser, 2005) have encouraged this idea by indicating out the administration's disappointment furnish society with the essential needs, powerlessness of the legislature to legitimately deal with the exercises identified with organizations and absence of abilities to run the market structure of free market society would bring about the misuse of the individuals from the general public. Furthermore, it demonstrates certainty of the corporate world to include itself to work for the friend in need of the general public by tolerating the social obligation as they have the framework and assets that an individual can't have.

There has been a great deal written in the writing about the conceivable impacts of CSR on various budgetary attributes of the business. (Mcguire et al., 1988; Sarbutts, 2003) have contended that there is connection amongst CSR and organizational performance. They guarantee that it is conceivable that the CSR will influence organization's monetary execution as interest in CSR brings about change in organization's notoriety. (Balabanis et al., 1988) have given the comparable contention that interest in CSR brings about expanded organizational performance because of the impact of CSR on the picture of the business. They have encourage expressed that this powers organization to include themselves in CSR related exercises. Also, they have said that it is redundant that same conclusion is come to by every one of the analysts as past research about interest in CSR and its impacts on CSR execution has given distinctive results.

Sarbutts (2003) has promoted his claim by a recommendation in putting resources into such CSR exercises that arrangement with people like the arrangement of equivalent chances of work, sexual orientation imbalance and so forth will probably bring about enhanced monetary execution as opposed to simply getting required in altruistic exercises. Examine in earlier writing prompts to the blended results in the examination of relationship amongst CSR and organizational performance.

Benson & Davidson (2010) concentrated on the relationship among firm esteem, partners administration, and official benefits. They found that positive relationship existed between firm esteem and partner administration while no connection was found between partner administration and official remunerations. So as indicated by their outcomes firm don't repay trough based after having better relations with stakeholders. In another study (Aktas et al., 2011) have analyzed the financial specialists' disposition toward acquisitions. They inferred that speculators offer significance to CSR as those acquisitions create an ideal securities exchange reactions which are gone for obtaining those organizations which are socially capable.

Credit ratings give data about the likelihood of the firm default and money related soundness of firms, subsequently disposing of replication of endeavors in monetary markets. With the assistance of credit ratings, speculators can evaluate the hazard qualities of the organizations utilizing a solitary scale which serves as a standard and makes a likeness of different firms simple. Moreover, while making any agreements it is anything but difficult to survey the hazard qualities of a firm which is appointed credit ratings on the grounds that the credit rating organization has done all the diligent work for this thing.

For those organizations that are assigned credit ratings, these additionally help them to evaluate and alleviate their hazard. (Attig et al., 2013) express that credit rating organizations fuse all the numeric and non-numeric data in relegating credit ratings to the organizations and they are experts who have the required framework and systems. It is troublesome for an individual firm to do it. As they join all the data in their rating choice so it is an assumption that organization's interest in CSR exercises is seen emphatically by the rating offices if such ventures are gainful for the firm. Thus, company's credit ratings would mirror the advantage of CSR. Credit ratings organizations have the solid monetary ability and are modern money related middle people. Accordingly, it is more probable that if the impact of CSR exercises would convey an advantage to the firm such gainful impact can all the more effortlessly be comprehended by the credit rating offices in contrast with an open financial specialist who is certainly not all around prepared to find and decipher enough data.

Kurum, Yildirak & Weber (2012) proposed by including six business banks of Canada in his study that they utilize while propelling credit to the organizations. Furthermore, he found that these banks fuse the ecological hazard in their criteria. (Deng et al., 2013) directed a study to quantify the effect of CSR on partner esteem augmentation amid procurement choices. They inferred that when the acquirer is all the more socially capable, it brings about higher procurement declaration returns. Their discoveries are as per the partner esteem expansion see. It proposes that those organizations which offer significance to the premiums and worries of pertinent partners in their business choices make more shareholder riches by settling on better venture decisions. Henceforth it is extracted from above discussion that CSR mitigates the danger of monetary risk and positively affects the credit ratings of the firm.

METHODOLOGY

The purpose of this study is to explore the implications of corporate social responsibility on credit rating of Pakistani corporations. Basically, this study based on secondary data analysis and data has been collected from annual statements of corporations working in Pakistan. The sample period is from 2013 to 2019 and sample selection is from multiple sectors randomly. Credit ratings are taken from PACRA and sectors selection criteria based on the data availability.

Credit rating is acting as the dependent variable and its value calculation based on studies of **(**Attig et al., 2013; Mansi et al., 2004). There are few criteria which indicate the number starting from twenty to one for different weightage of a credit rating as per Pakistan Credit Rating Agency (PACRA) are transformed to an ordinal scale. Annual values of CSR score are calculated through the instrument developed by (Muttakin & Khan, 2014). It includes community involvement, environmental practices, employee information, product and service information and value added information. There are total twenty items and dichotomous technique is used to assign numbers 0 and 1. If the relevant item is disclosed in the annual report of the company, binary value 1 is assigned and 0 otherwise. Then total numbers are counted and this total is divided over 20 to calculate CSR score of a particular financial year.

Firm size is considered here as a control variable and natural log of total assets are taken as a proxy for this (Liu & Jiraporn, 2014). Leverage is measured by dividing long term debt to shareholders equity. Stock returns beta is measured over the fiscal year using variance-covariance method. Covariance between returns of stock and market is divided over the variance of the market returns. The margin is calculated by taking the value of operating profit and dividing it by the total sales (Attig et al., 2013). Capital investment is calculated by dividing the value of property, plant, and equipment to total assets (Liu & Jiraporn, 2014). Interest coverage is calculated by dividing the earnings before interest and taxes to interest expense (Attig et al., 2013). The econometric model indicates the dependent, independent and control variables.

$$CR_{it}=\beta_0+\beta_1CSR_{it}+\beta_2BETA_{it}+\beta_3FS_{it}+\beta_4MAR_{it}+\beta_5COV_{it}+\beta_6LEV_{it}+\beta_7CAPINT_{it}+\varepsilon_{it}$$

Whereas,

CR=Credit Ratings
CSR=Corporate Social Responsibility
BETA=Beta
FS=Firm Size
MAR=Margin
COV=Coverage
LEV=Leverage
CAPINT=Capital Investments

RESULTS AND DISCUSSION

Descriptive Statistics

Descriptive statistics indicates normality of data using mean, median, minimum and maximum values, Skewness, kurtosis and Jarque bera. Mean of credit ratings is 15.88 which is on the higher side and it demonstrates that organizations which are incorporated into our information set are relegated higher evaluations demonstrating that their appraisals are fortunate and the estimation of standard deviation additionally is very little indicating little scattering in the information. CSR has the mean estimation of .50 portraying the out of an aggregate score of 1, organizations on the normal fall in the middle in regard to applying CSR exercises in their business operations. Further values are also showing average behavior. Values of Skewness and kurtosis are within the range of defined criterion.

Table 1
DESCRIPTIVE STATISTICS

	Mean	Max	Min	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Prob.
CR	15.88	20	1	3.208	-2.761	13.26	1046	0
CSR	0.5	0.85	0.1	0.185	-0.243	2.181	7	0.03
BETA	0.913	2.86	-1.26	0.514	-0.178	4.671	22	0
MARGIN	0.12	0.66	-0.2	0.124	1.499	6.627	171	0
COVERAGE	3.079	27.72	-9	3.303	2.716	20.32	2540	0
LEV	0.751	4.704	0	0.889	2.097	7.52	293	0
CAPINT	0.443	0.999	0.001	0.247	-0.177	-0.955	255306	0
FS	24.13	26.64	17.36	1.486	-0.905	4.386	40	0

Correlation

Correlation matrix indicates the positive, negative and no relation between dependent, independent and control variables. Table II indicates correlations between variables. The correlation coefficient between credit rating and CSR is 0.39 which is additionally positive. It demonstrates that both qualities tend to move intimately with each other. Positive indication of the coefficient demonstrates that if CSR has expanded the credit rating likewise increment and the other way around. What's more, this coefficient is the most elevated among the various factors found in our model which are control factors.

Table 2
CORRELATION MATRIX

	CR	CSR	BETA	FS	MAR	COV	LEV	CAPINT
CR	1							
CSR	0.394	1						
BETA	-0.095	0.178	1					
FS	0.267	0.445	0.228	1				
MAR	-0.034	-0.03	0.063	-0.06	1			
COV	0.013	0.058	0.049	0.02	0.53	1		
LEV	-0.116	-0.203	0.156	-0.002	0.089	-0.069	1	
CAPINT	-0.023	-0.021	0.116	-0.337	0.035	-0.007	-0.022	1

Beta shows negative connection which is a measure of value hazard and it demonstrates that if chance expands the estimation of credit rating declines and the other way around. Firm size has a positive connection with the credit rating so is the scope. It implies that substantial organizations are additionally allotted positive credit rating while if organizations have higher intrigue scope proportion their appraisals are allocated positively. Influence has a negative relationship with credit rating. It implies that the organizations which have a higher obligation in their capital structure detest positive credit ratings. The connection between capital venture and credit rating is observed to be negative with coefficient estimation of -0.022. It implies that those organizations which put more in property, plant and hardware are left with fewer amounts to spend on CSR.

Ordered Probit Model

An ordered probit model is utilized to gauge connections between an ordinal variable. An ordinal variable is a variable that is all out and requested, for example, "poor", "great", and "fantastic", which may show a hierarchical current status. This model is verified in triple ways describing full time frame, initial and closing time frame. Firstly, this model is implemented using time through 2009 to 2015. This model will be implemented in such like the case when at least one of the dependent variable is dichotomous. R-square indicates the 28.9% dependence of credit rating on corporate social responsibility and other control variables.

Results are indicating that corporate social responsibility is significantly contributing in the determination of credit rating and its contribution is positive which means as the CSR increases, it will automatically improve the credit rating of that organization. These results are an indication of acceptance of hypothesis of this study. The second variable indicated the negative relation between equity risk and credit rating which means as the equity risk will increase, it will reduce the credit worthiness of any organization by 0.42 (Bhojraj & Senugupta, 2003; Blume et al., 1998).

Table 3
ORDERED PROBIT RESULTS FOR FULL SAMPLE PERIOD

Variables	Coefficient	Std. Dev.	P-Value
CSR	3.086	6.13	0.00***
BETA	-0.411	-2.6	0.009**
MAR	-0.979	-1.78	0.0750*
COV	0.0003	0.54	0.0890*
LEV	-0.025	-0.28	0.777
CAPINT	-0.004	1.37	0.17
FS	0.257	3.94	0.00***

Dependent Variable: Credit Rating
***p<0.01, **p<0.05, *p<0.10

Margin also showed significantly but the negative relation with credit rating and it is participating 0.97. There exist significant and positive relation between coverage and credit rating because coverage leads to higher credit rating as greater interest coverage results in a reduction of default risk and in turn, enhances credit ratings but its participation is too much minor. Firm size is also showing significant and the positive result which shows that as the firm size goes on larger, it will increase the chances of credit rating. But leverage and capital investment are not actively participating in the determination of credit rating.

Actually, few companies have availability of data for the initial period of time and remaining for the ending period of time. So this is an unbalanced panel and categorized into three different phases. According to the second phase, the sample period is from 2009 to 2011.

Here the value of R-square indicated that 27.7% variations in the dependent variable are due to a modification in independent and control variables.

In this phase, the total number of observation has been reduced because some of the companies during this sample period were not getting assigned to the credit ratings. In any case, with the progression of time, there has been an expansion the quantity of organizations which need the credit ratings to be assigned. It demonstrates that there has been an increment in the pattern in Pakistan to get evaluations from the rating agency.

Table 4
ORDERED PROBIT RESULTS FOR (2009-2011) PERIOD

Variables	Coefficient	Std. Dev.	P-Value
CSR	2.159	2.32	0.020**
BETA	-0.572	-1.36	0.174
MAR	0.461	2.69	0.007**
COV	0.046	0.05	0.096*
LEV	0.016	1.61	0.11
CAPINT	-0.246	1.5	0.134
FS	1.822	-2.31	0.021**

Dependent Variable: Credit Rating. ***: p<0.01, **: p<0.05, *: p<0.10

The regression coefficient of CSR on credit ratings loads positively and significantly which is 2.158. It implies that with the one unit change in the estimation of CSR, the credit rating will be increased by 2.158. Equity risk, capital investment, and leverage are not participating in the determination of credit ratings of sample organizations. Margin, coverage, and firm size are making 0.46, 0.046 and 0.18 positive changes in credit rating.

The results of the third phase provided more comprehensive results and these are supported by historical studies as well because with the passage of time, a number of companies are rising and their importance regarding credit rating as well. According to sample period from 2011 to 2015, R-square indicated that 25.5% variations in the dependent variable are due to a modification in independent and control variables.

The regression coefficient of CSR on credit ratings loads positively and significantly which is 3.56. It implies that with the one unit change in the estimation of CSR, the credit rating will be increased by 3.56. Equity risk and capital investment are negatively contributing in modifying the credit rating by 0.392 and 0.246. Firm size and leverage are not participating in the determination of credit ratings of sample organizations. Margin and coverage are making 0.226 and 2.027 positive changes in credit rating.

Table 5
ORDERED PROBIT RESULTS FOR (2011-2015) PERIOD

Variables	Coefficient	Std. Dev.	P-Value
CSR	3.56	5.86	0.00***

BETA	-0.392	-2.27	0.023**
MAR	0.226	3.13	0.002**
COV	2.027	-3.07	0.002**
LEV	0.001	1.38	0.167
CAPINT	-0.246	-1.99	0.047**
FS	0.004	1.31	0.189
Dependent Variable: Credit Rating. ***: p<0.01, **: p<0.05, *: p<0.10			

This study is exploring the implications of corporate social responsibility on credit ratings of Pakistani firms relating to non-financial sectors. Overall results supported the hypothesis and suggested that credit analysts must give significant importance to information regarding CSR while assessing the credit worthiness of the firm. The results are indicating that there exist significant and positive relation between corporate social responsibility and credit rating in the sample selected corporations which are consistent with (Attig et al., 2013; Liu & Jirapon, 2014). But control variables are providing partially matching and partially varying with historical studies (Sharfman & Fernando, 2008).

CONCLUSIONS

This study wants to explore the implications of corporate social responsibility on credit rating in non-financial corporations of Pakistan. Ordered probit regression model has been implementing for data analysis for a sample period of 2009-2015. This data analysis distributed in three phases, overall analysis, initial and ending analysis because of data availability. Firstly, descriptive statistics showed normality of data using mean, median, minimum and maximum values, Skewness, kurtosis and Jarque bera. Secondly correlation statistics indicated a relationship between corporate social responsibilities as independent variable, credit rating and a group of control variables. In all three phases, corporate social responsibility is significantly and positively contributing to the determination of credit rating of organizations and control variables are showing some deviating results as mention in above discussion.

These significant positive results of CSR on credit ratings suggest that by increasing a firm's credit rating, investment in CSR activities is likely to increase the firm value and shareholders' value. Investors must consider organizational CSR related performance during investing decisions because it CSR-based firms has better opportunities than others. They likewise need to consider the credit ratings of the organizations as these incorporate all the important money related and non-budgetary data. Future research could be conducted by considering other dimensions of corporate social responsibilities and credit rating, increasing sample size, conducting cross country and comparative studies.

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