

The curvilinear relationship between corporate social performance and financial performance

Curvilinear relationship

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Evidence from Indian companies

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Abstract

Purpose – The relationship between corporate social responsibility (CSR) and financial performance (FP) has burgeoned widespread debate among researchers. In recent years, the debate has explored more dynamic links, one of which is the curvilinear relationship, between CSR and FP. This paper aims to empirically test the curvilinear relationship between CSR and FP in the context of Indian companies.

Design/methodology/approach – This paper empirically tests the curvilinear relationship between CSR and FP in the context of Indian companies. The study used a panel data of 43 listed companies over a period of ten years from 2008 to 2017. A correlation and panel regression were carried out to examine the possible link.

Findings – The findings demonstrate that a curvilinear relationship exists between CSR and FP, suggesting that two long competing viewpoints may be complementary.

Research limitations/implications – The study mainly focuses on top companies, so the generalizations of results to other small companies are unwanted.

Practical implications – An immediate managerial implication of the findings suggests that to serve the interests of the shareholders, a long-run planning and considerable resources should be dedicated at this direction, given that CSR expenditure does not pay off immediately.

Originality/value – In the Indian context, very few studies have analyzed the linkages between CSR and FP. Using an improved and distinctive approach, the study empirically tests the relationship between CSR and FP from non-linear perspective.

Keywords Regression, Corporate social responsibility, Panel data, Financial performance, ESG, Indian companies

Paper type Research paper

Introduction

The relationship between corporate social responsibility (hereinafter, CSR) and financial performance (hereinafter, FP) has been debated extensively in the academic circles. Although research interest on the effects of CSR on firm performance continues to be high, there is no consensus on the direction of relationship. While some researchers found a positive relationship between CSR and FP (Preston and O'bannon, 1997; Simpson and Kohers, 2002), others have found that CSR actually harms a firm's FP (Vance, 1975; Wright and Ferris, 1997). Studies (Griffin and Mahon, 1997; McWilliams and Siegel, 2000) have found an inconclusive relationship between CSR and FP. The proponents of CSR assert that engaging in social activities improves the reputation, which shields company from legal



sanctions and public outrage. On the other hand, few researchers highlights that activities like charity, education, eco-friendly equipment, and healthcare involves heavy costs which effects FP negatively. The diverse arguments provide an opportunity to further investigate the relationship between CSR and FP, to check whether CSR contributes to company's FP.

The extant literature shows that majority of studies in this stream assume that the relationship between CSR and FP is linear. At different intensity levels, CSR is assumed to have the same strength and direction in influencing firms' performance. To resolve empirical inconclusiveness and certain conceptual confusion found in the literature, we have undertaken this study to provide distinctive perceptive of CSR-FP relationship. One trend which has received pronounced attention in the recent past is that CSR-FP is not static, but changing in non-linear fashion. The non-linear relationship is supported by the microeconomic theory, but has been examined infrequently, as pointed out by [Barnett and Salomon \(2012\)](#). Because of structural adjustment and agency cost, the early stage of CSR consumes considerable resources with little tangible benefits to harvest. However, as the company reaches the threshold point, CSR will gradually turn into positive factors concerning the accessibility of critical resources, learning curve and management discretion, which provides an insurance protection to firm against risk of losing critical resource.

For example, [Barnett and Salomon \(2006\)](#) tested the relationship between CSR and FP in mutual fund companies. He observed that as the number of social screens increases, FP declines at first, then rebound as the number of screens reaches a maximum, thereby observed a U-shaped curvilinear relationship. [Barnett \(2007\)](#) developed a stakeholder influence capacity (SIC) model which he defined as a capacity to improve stakeholder relationships through CSR. Those firms which have attractive SIC will be rewarded positively. Specifically, financial returns will be negative and curve will slope downward till company has inadequate SIC. Subsequently, financial return curve turns upward and positive for those firms, which improve their SIC. Likewise, [Han et al. \(2016\)](#) observed a U-shaped relationship between environment, social and governance (hereinafter, ESG) and FP in Korean companies. Specifically, environmental responsibility presents negative (or U curve) relationship with FP, whereas the governance responsibility performance score presents a positive (or inverse U curve) relationship with FP. Similar results were found by [Wang et al. \(2008\)](#), [Nollet et al. \(2016\)](#) and [Park and Lee \(2009\)](#). CSR's benefits and costs at different CSR intensity levels might yield constantly changing overall influences on the firm; thus, a simple linear relationship will not sufficiently capture the precise pattern ([Salzmann et al., 2005](#)). Therefore, it becomes more meaningful when researchers go beyond the traditional views that primarily focus on either positive or negative influences of CSR and explore its dynamic performance impact resulting from the changing combination of the benefits and costs of CSR that occur simultaneously in practice.

This study provides new perspective to understand CSR and PF by focusing on dynamics relationship rather than the "allies-and-adversaries" dichotomy. This study will contribute to comprehend the CSR-FP relation from a non-linear perspective in Indian context. In India, because of absence of strong appeal and consciousness, research work has not bourgeoned much. The research in India is mostly restricted to descriptive nature without evaluating the economic perspective. This study examines both the linear and non-linear relationship between CSR and FP by extending the work of [Nollet et al. \(2016\)](#). For the test subject, unlike in the study of [Nollet et al. \(2016\)](#), we chose Indian companies and their CSR performance for two reasons. First, for the past 50 years, CSR studies have mostly focused on developed economies. [Kolk \(2005\)](#) reported that CSR codes are heavily influenced by the US and European corporations, rather than Asian ones, and we wanted to fill this geographical gap. Second, current research on CSR in India is mostly restricted to

questionnaire surveys on CSR (Khan and Atkinson, 1987), nature, scope and characteristics of CSR in India (Arora and Puranik, 2004; Sood and Arora, 2006), and policies and practices of multi-national corporations towards CSR in India (CREM, 2004). Of late, few studies have been conducted in India on CSR–FP; still there is a need of comprehensive empirical analysis on economic outcome of CSR. Therefore, going one step further, our study aimed to fill this gap by identifying the relationship between a firm’s CSR performance and its FP in both linear and non-linear perspective.

This article has been organized into five sections. The following section provides insights into the work that have been carried out in the area of CSR and FP. Third section outlines the data source and methodology. The fourth section presents the data analysis and results. Finally, some concluding remarks are provided.

Review of literature

Researchers have applied different perspectives to understand the relationship between CSR and FP, but theories and empirical findings present competing and contradictory conclusions. Despite the apparent acceptance of CSR by corporate entities, many economists have taken a skeptical view of CSR and its viability in a competitive environment. Friedman (1970) posits that company is only accountable to their investors and should dedicate itself to earn maximum return for them. Activities, which are beyond the domain of company, will put company in an adverse position in comparison to their competitors. For instance, those firms that spend its money on philanthropy, eco-friendly equipments and workers facilities will incur a cost that will shrink their profitability (Aupperle *et al.*, 1985). He further argued that social programs at the cost of profitability creates negative attitude among shareholders that reduces CSR’s appeal. On the contrary, Freeman (1984) enunciated that stakeholders have strategic importance for business entity. Stakeholder theory assumes that welfare of stakeholders’ acts as value driver by reducing stakeholder-inflicted costs and Shields Company against the fragile business environment. This perspective is based on an assertion that a tradeoff exists between explicit (e.g. payments to bondholders) and implicit costs (e.g. product quality costs, environmental costs) of the firm. This theory asserts that if corporation operate in a socially irresponsible way to bring down the implicit cost, it will experience higher explicit cost, results in competitive disadvantage (Waddock and Graves, 1997).

The benefits of corporate social responsibility

CSR has been debated extensively in India after Indian parliament made it compulsory for larger companies to spend 2 per cent of their profitability on social activities. The growing popularity of CSR and scarce resources it consumes, set an important question, how does CSR impact the FP? Empirical studies specify that engaging purposefully with CSR enhances the profitability and creates a high competitive operations and social complexity that is difficult for competitors to imitate. The firm with superior CSR is likely to locate proper competitive opportunities by enhancing the firm’s reputation and the ability to generate profits by differentiating its product, the ability to attract highly qualified personnel or the ability to extract a premium for its products (Maqbool and Zameer, 2017). The recent sub-prime crises in the USA, which saw a plunging in the markets, were because of irresponsible engagements of corporate entities. Irresponsible entities usually do not find favorable attitude of different stakeholders, like customers stop transacting with the particular firm, shareholder prefers to sell the shares, employees do not exert full potential and environmental advocated sue (Wood, 1991). All these factors lead to increase in FP. “Consumer inference making” highlights that consumers prefer to buy from those firms

which are socially responsible (Brown and Dacin, 1997) and are considered as high quality and more reliable (Maignan and Ferrell, 2001). Such characters encourage positive evaluation of firm's products, increase customer loyalty, and positive word of mouth (Sen *et al.*, 2006). Likewise, a firm with favorable working environment tends to hire workers at lower costs and decrease its workers turnover, favorable community attitude, less investment on advertising and easily lobby for tax breaks from local governments (Freeman, 1984; Waddock and graves, 1997). Overall, all these activities reduce the cost and enhance FP. In an empirical study, Mishra and Suar (2010) assessed the correlation between CSR and FP by covering 150 Indian companies. CSR was measured by self-constructed questionnaire. FP measures along with NFP measures were used to assess firm performance. The study revealed significant positive relationship between CSR and FP. Similarly, Ruf *et al.* (2001) by covering 496 firms out of Standard and Poor's 500 firms examined the impact of change in CSR on concurrent and subsequent change in FP. To measure CSR, a questionnaire was devised and administered to a group of people. FP was measured by return on equity (ROE), return on sales (ROS) and growth in equity. The study revealed that firm may enjoy good profitability by having favorable social programs. Similar results were verified by Preston and O'bannon (1997), Simpson and Kohers (2002) and Waddock and Graves (1997).

Costs of corporate social responsibility

Critics of CSR highlight that it consumes vital resources of the corporation without any substantial return. "Socially conscious investing is an inimical idea, yields lesser return, and screaming with contradictions" (Rothchild, 1996, p. 197). This line of thinking argues that engaging with CSR activities incur a competitive weakness because they incur costs which should have been borne by other institutions. Specifically, Implementing CSR strategies, such as improving working environment, reducing industrial effluent, philanthropy, promoting fair trade, consumer welfare and other such programs add to costs and runs counter to the firm's conventional objective to maximize profit (Friedman, 1970; McWilliams and Siegel, 1997). The basic objective of corporate entity is to maximize the investors return and growth of the firm. An additional task will put managers under serious burden and distract him from the primary objective of the business (Hayek, 1969). Stakeholders believe that the firm distracts itself from the core business through involvement in CSR activities (Vlachos *et al.*, 2010).

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 (Friedman, 1962).

Similarly, Moon (2001) brought up that inspiration for CSR is constantly determined by some self-intrigue, paying little mind to whether the movement is deliberately determined for business purposes alone, or whether it is also partly driven by what appears, at least superficially, as an altruistic concern. The hidden supposition is that commercial imperative is not the sole purpose behind CSR. The astute directors advance their altruism in a deceptive way.

Cordeiro and Sarkis (1997) empirically tested the relationship between corporate environmental activism and FP for a sample of 523 US firms. Toxic release inventory data were used as a proxy for environment pollution while FP was measured by earning per share (EPS). The study concludes that FP moves inversely with the CSR. Likewise, Tyagi *et al.* (2013) studied the nexus between CSR-FP of Indian companies under good management theory. The study used S&P ESG India Index as a proxy of CSR over the

period of six years (2005-2011). FP was measured by ROE, ROA, return on capital employed (ROCE), EPS and operating profit margin. Weighted least square technique was used for the investigation. General results show negative connection between these two constructs. Similar kind of empirical results have been found by [Moore \(2001\)](#), [Vance \(1975\)](#) and [Walley and Whitehead \(1994\)](#). Proponents of negative theory believes that cost involved in social activities go beyond the benefits from CSR.

The more, the better

The CSR–FP debate has moved from linear relationship to a curvilinear relationship. Researchers have shifted to a non-linear relationship after a long and inconclusive debate on the linear relationship between CSR and FP. Rather specifying CSR as good or bad, academicians have engaged in a wider perspective of CSR by focusing on circumstances, which promotes its effectiveness. In the recent past, few researchers seek to develop a contingency model that specifies not whether, but under what conditions CSR turns rewarding ([Rowley and Berman, 2000](#)). Few researchers highlights that CSR-FP nexus can be encapsulated by U-shape: at the low level of CSR, companies are unable to carry benefits, but past threshold point, social activities will gradually turn into positive factors concerning the accessibility of critical resources, learning curve and management discretion, which will lead to significant financial benefits. [Barnett and Salomon \(2006\)](#) argued that as company increases CSR, at initial FP declines, but subsequently rebound as the CSR increases. A negative CSP–FP, which forms the initial phase of whole process, is explained by the inherited overheads of CSR, skeptical attitude of stakeholders, triggers conflict of interest and structural adjustment. However, as companies internalize the CSR philosophy and adjust its ingredients with corporate strategy, companies earn financial returns that offset and eventually exceed the cost. [Besley and Ghatak \(2007\)](#) found that better responsible firms will earn higher profits because of their reputational premium. [Barnett \(2007\)](#) theorized that variance in financial returns to social responsibility is attributable to SIC. Simply, SIC is a formalization of the basic logic that corporate philanthropy is valued by stakeholder on the basis of firm credentials. Those firms which have attractive SIC will be rewarded positively. In contrast, firms with low SIC are less likely to see an intangible return on their social activities. Their activities are just seen as greenwashing and self-serving. Specifically, at the low level of SIC, managing CSR is costly endeavor thus reduces returns to the firm. Subsequently, financial return curve turns upward and positive for those firms which improve their SIC.

Few studies have been conducted in this regard, to understand the non-linear relationship between CSR-FP. [Wang et al. \(2008\)](#) examined the relationship between CSR and FP in the context of the USA. The empirical work was conducted on 817 firms listed in Taft Corporate Giving Directory. Corporate philanthropy was measured by an “amount spent on charity”, while as FP was valued by ROA and Tobin’s Q. Integrating and extending existing perspectives, they concluded that inverse U-shape relationship exists between CSR and FP. Similarly, [Wang et al. \(2016\)](#) tested empirically the curvilinear relationship between CSR and FP in an international construction company. Using panel dataset of 30 companies for the period of six years, the curvilinear relationship of CSR on return on assets and earnings per share, as specific FP measures, is strongly supported. [Nollet et al. \(2016\)](#) present a negative (or U curve) relationship for environmental responsibility and FP, whereas the governance responsibility performance score presents a positive (or inverse U curve) relationship with FP. Similar results were verified by [Barnett and Salomon \(2006\)](#), [Han et al. \(2016\)](#) and [Barnett and Salomon \(2012\)](#).

Taken together, a strong empirical foundation exists for U-shaped relationship. Nonetheless, to our knowledge, no study has yet tested curvilinear relationship in an Indian context. We therefore hypothesize:

H1. Corporate social performance and corporate FP have curvilinear relationship.

Data description and methodology

Sample and data source

This paper examines the relationship between CSR and FP in the Indian context. The study focused on BSE 100 companies over a period of 10 years from 2008 to 2017. The BSE companies are market leaders in their respective industries and impact of CSR on these companies will set precedence for other companies to follow. Because of lack of data and missing variables, sample was restricted to 43 Indian companies representing nine industrial sectors. This period (2008-2017) witnessed an increased awareness of CSR practice in India, which makes the period important to examine CSR dynamics. Data were collected from Bloomberg database and Prowess, Centre for Monitoring Indian Economy (CMIE) electronic database.

Corporate social responsibility

CSR is inherently much more difficult to measure than FP. This is because of not only subjective nature of CSR but also the diverse issues that fall under it. In India, previous studies have used company documents as a CSR measure, which have intrinsic shortcomings, by revealing only the firm's favorite interpretation of its CSR (Butz and Pictet, 2008). ESG, a third party rating method, has been popularly used by studies involving CSR variables (Nollet *et al.*, 2016; Velte, 2017). Therefore, this study uses Thomson Reuters ESG as a proxy for CSR. ESG constitutes CSR measures from ten categories, such as resource use, emissions, innovation, workforce, human rights, community and product responsibility, management, shareholders and CSR strategy. These categories comprehensively reflect how a firm performs on superior or inferior social responsibility tasks. ESG has been seen as one of the credible index for CSR having less biasness and covering wider range of activities. The data is verified in a rigorous process to ensure information is standardized, comparable and reliable (Thomson Reuters). The score ranges from 100 to 0 if an activity is fully disclosed it is marked as 100 otherwise 0. The advantage with this set of data is it can be easily transformed into quadratic form, as opposed to the Kinder, Lydenberg and Domini score, which ranges from -2 to +2 and thus it requires some normalization (see, for instance, Barnett and Salomon, 2012). Following the procedure of Nollet *et al.* (2016) and Han *et al.* (2016), we transformed CSR into quadratic form to check the Non-linear relationship.

Financial performance and control variables

The key dependent variable in this study is FP. Empirical studies have used different measures to compute the FP. Griffin and Mahon (1997) observed that more than 80 different types of measures have been used by companies for financial measure. Firm size, ROA, ROE, Asset age and ROS are frequently used measures (Aupperle *et al.*, 1985; McWilliams and Siegel, 2000; Vance, 1975). To this end, we used ROE and ROCE (as measure of performance from accounting measure) and total returns (TR) (as measure of performance from market perspective). These ratios were selected by reviewing the previous literature on the measure of FP (Tyagi *et al.*, 2013; Rai and Bansal, 2014; Wang *et al.*, 2016; Graves and Waddock, 1994).

To overcome the model misspecification, the study controls several variables, for instance, leverage ratio, Size, capital intensity and Research and development. These variables were selected after scanning previous studies on the particular theme (Andersen and Dejoy, 2011; Margolis, Elfenbein and Walsh, 2009; McWilliams and Siegel, 2000; Wahba and Elsayed, 2015).

Panel regression model

Following the theoretical structure as defined, we specify following model to identify the determinants of FP. Before, we shall test the quadratic relationship; we adopt a more prudent approach to test a direct and linear relationship between the two constructs. For this reason, we propose these models:

Model 1:

$$Y_{it} = \beta_0 + \sum_{i=0}^n \beta_1 CSR_{it} + \sum_{i=0}^n \beta_2 SIZE_{it} + \sum_{i=0}^n \beta_3 Lev_{it} + \sum_{i=0}^n \beta_4 CAP_{it} + \sum_{i=0}^n \beta_5 R\&D_{it} + \mu_{it} \quad (1)$$

Model 2:

$$Y_{it} = \beta_0 + \sum_{i=0}^N \beta_1 CSR_{it} + \sum_{i=0}^N \beta_2 CSR^2_{it} + \sum_{i=0}^N \beta_3 SIZE_{it} + \sum_{i=0}^N \beta_4 Lev_{it} + \sum_{i=0}^N \beta_5 CAP_{it} + \sum_{i=0}^N \beta_6 R\&D_{it} + \mu_{it} \quad (2)$$

where:

Y_{it} = is FP measured by ROE, ROCE and TR.

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ and β_6 are the parameters or the coefficients of the explanatory variables.

CSR_{it} = corporate social responsibility of firm i at time T .

CSR^2_{it} = Quadratic form of corporate social responsibility of firm i at time T .

$Size_{it}$ = size of the firm i at time T .

Lev_{it} = leverage of the firm i at time T .

Cap_{it} = Capital intensity of the firm i at time T .

$R\&D_{it}$ = Research and development of firm i at time T .

The two subscripts i represents company and t represent time series while $\hat{\mu}_{it}$ is error term. Model 1 tests the linear relationship between CSR and FP, while model 2 tests non-linear relationship between CSR and FP.

Results and discussion

Descriptive results

Table I presents a descriptive statistics of variables used. The average score of ESG varies from 9.09 to 58.67 with an average score of 26.63. The mean score (26.63) depicts that Indian companies are not highly inclined towards CSR, albeit there is pronounced improvement in

CSR expenditure and its intensity after Indian parliament made it compulsory. The study by Tyagi *et al.* (2013) reported an ESG mean of 12.50 among Indian listed companies for a period 2005-2011. Another observation regarding the FP variables is that ROE shows maximum volatility with a standard deviation of 22.37. Overall, variables show a reasonable volatility and generally align with those found by other researchers.

Table II reports correlation among all the dependent, independent and control variables used in the present study. The result depicts a mixed correlation among the selected variables. ESG shows a significant relationship with ROE and ROCE, while insignificant relationship with TR. It evinces that market and accounting measures capture distinct dimensions of performance. Further, Size, R&D and leverage show a significant negative correlation with ROE and ROCE and insignificant relationship with TR. Overall, explanatory variables show a significant correlation with the FP, gives an overview of appropriate model. Further, our variance inflation factor test result indicates that there is no problem of collinearity.

Panel regression results

To test the relationship between CSR and FP, both linear and non-linear models were estimated. Model 1 tests the relationship between CSR and FP in linear perspective, while second model tests the relationship in non-linear perspective. As part of the empirical process, to examine the validity of data and results, some essential statistical tests were performed. Heteroscedasticity, Multicollinearity and Serial correlation are important

Table I.
Descriptive statistics
of the variables
under investigation

Variables	Obs	Mean	SD	Minimum	Maximum
ESG	430	26.63	14.78	9.09	58.67
ROE	430	25.82	22.37	-48.62	151.85
ROCE	430	4.63	0.99	-3.01	5.69
TE	420	-9.57	0.99	-0.68	18.19
CAP	430	0.24	0.12	0.02	0.66
SIZE	430	5.08	0.64	3.74	6.79
RD	430	0.017	0.03	7.32	0.19
LEV	430	0.34	0.42	0	2.48

Source: Data Bloomberg

Table II.
Matrix of Pearson's
correlation

	ESG	ROE	ROCE	TR	CAP	Size	RD	LEV
ESG	1.000							
ROE	-0.150**	1.000						
ROCE	-0.117*	0.979**	1.000					
TR	-0.039	-0.034	-0.021	1.000				
CAP	0.17**	-0.003	-0.056	-0.078	1.000			
SIZE	0.65**	-0.341**	-0.323**	-0.061	0.229**	1.000		
RD	-0.12*	-0.154**	-0.144**	0.013	-0.250**	-0.056	1.000	
LEV	-0.019	-0.318**	-0.422**	-0.050	0.236**	0.272**	-0.080	1.000

Notes: **Correlation is significant at the 0.01 level; *correlation is significant at the 0.05 level

Source: results obtained from using stata

prerequisite for classical linear regression model to be consistent and unbiased. The results obtained using the panel corrected standard error approach, which account for these basic assumptions of classical linear regression model. Various assumptions of regression analysis have been carefully checked and successfully met. Further, Model selection was decided by fixed F-test (comparing the pooled regression Model with the fixed effects model), Lagrange Multiplier Test (comparing the pooled regression model with the random effects model) and Hausman Test (comparing random or fixed effects model) (Kunst, 2010). The test advocates random effect model for ROE, ROCE and OLS model for TR. Further, both models are fit and appropriate for the data with significant F-test ($p < 0.00$).

Table III reports a linear relationship between CSR and each of the three FP measures (ROE, ROCE and TR). In the context of Model 1, regression analysis shows that CSR has statistically insignificant impact on ROE, ROCE and TR. The results are in consonance with (Freedman and Jaggi, 1986; Patten, 1991; Ullmann, 1985; McWilliams and Siegel, 2000) who professed that CSR has no/insignificant relationship with FP. In addition, the insignificance of the ESG coefficients is same as that reported by Nollet *et al.* (2016).

We now turn to the CSR–FP link in quadratic models for all three performance indicators (ROE, ROCE and TR). In Table IV, we added a squared CSR term to test the non-linear relationship. The result shows that for ROE and ROCE, there is a significant U-shaped CSR–FP relationship, whereas the effect of CSR on TR is insignificant. For ROE, the coefficient of CSR and CSR² are -0.61 and 0.008 , respectively. For ROCE, the coefficient of CSR and CSR² are -0.023 and 0.0003 , respectively. The result implies a curvilinear, non-monotonic

Variable	ROE	ROCE	PE
CSR	-0.059 (-0.42)	-0.003 (-0.60)	0.0005 (0.18)
lev	-9.959 (-3.57)***	-0.620 (-4.44)***	-0.1832 (-2.57)***
R&D	-104.79 (-3.56)***	-3.636 (-3.01)***	0.812 (0.93)
cap	1.907 (0.20)	-0.340 (-0.93)	0.473 (0.19)
Size	-13.901 (-1.57)	-0.460 (-1.17)	-0.215 (-3.42)***
Constant	102.917 (2.29)**	2.79 (1.37)	1.009 (3.99)***
R2	0.192	0.23	0.02
Model	Random	Random	OLS

Notes: Significance at * $p = 0.1$; ** $p = 0.05$; *** $p = 0.01$

Source: Results obtained from using stata software

Table III.
CSR–FP relationship
in linear models

Variables	ROE	ROCE	PE
CSR	-0.618 (-2.26)**	-0.023 (-2.00)	0.019 (1.21)*
CSR ²	0.008 (2.15)**	0.0003 (1.81)*	-0.0002 (-1.12)
lev	-10.314 (-4.33)***	-0.632 (-6.26)***	-0.166 (-1.20)
R&D	-104.14 (-2.88)***	-3.610 (-2.35)**	0.857 (0.59)
cap	0.945 (0.11)***	-0.374 (-1.06)***	0.450 (1.06)**
Size	-12.868 (-4.56)***	-0.422 (-3.52)***	-0.233 (-2.13)*
Constant	104.87 (7.70)	2.856 (4.91)	0.866 (1.81)
R ²	0.18	0.22	0.02
Model	Random	Random	OLS.

Notes: Significance at * $p = 0.1$; ** $p = 0.05$; *** $p = 0.01$

Source: Results obtained from using stata software

Table IV.
CSR–FP relationship
in non-linear model

relationship between CSR and FP. The curvilinear relationship between CSR and FP evinces that CSR does not pay immediately, but after a certain threshold. Intuitively, the insignificant effect of CSR on FP in the linear model turns out to be part of a more complex relationship that is only revealed when testing for non-linear models. This finding provides evidence in favor of our *H1*, which suggest that a non-linear relationship exists between CSP and FP. At the low level of CSR, companies have to face lack of tangible benefits from CSR commitment. The results indicate that the situation improves over time and elicit a positive stakeholder's reaction which in turn will lead to a positive CSP–FP relationship. In other words, companies need to increase their investment in CSR activities and strategies to draw the benefits (Brammer and Millington, 2008).

According to “stakeholders’ theory”, stakeholders are an important constituent of corporate entity and their welfare creates competitive advantage for the firm. Positive engagement with stakeholders attracts competitive employees, creates brand loyalty, and positive perception in an immediate community (McVea and Freeman, 2005). Overall, these factors are vital for the success and competitive engagement of corporate firm. Initially, it is costly to engage with CSR, as scarce resources are occupied at the early stage of implementing CSR activities, such as cash, products, facilities, human resources and increased management, all of which are needed to improve the firm’s FP. As corporate social activities occupy scarce resource without capitalizing much, FP declines, as CSR is relatively low. However, as companies internalize the CSR philosophy and reach a mature stage, all the potential benefits turn into tangible outcome and hence improves FP as reflected by loyal engagements of stakeholders. Before the inflection point, fewer corporate social activities are beneficial to the companies’ FP. However, this status will not be stable; companies are pushed to do better by exogenous forces, such as policies of government, complaints from employees and community discussions. When a firm’s social actions become more and relatively mature, it gains from the benefits and is motivated to do more. Taken together, there is a curvilinear relationship between CSR and accounting measures (ESP and ROCE), while, in case of market measures (TR) relation is also curvilinear but statistically insignificant. This study resonates with the work of Nollet *et al.* (2016), Barnett and Salomon (2006) and Wang *et al.* (2016).

Conclusion and implications

This paper investigates the relationship between CSR and FP using the *Thomson Reuters* ESG disclosure score. Using an improved and distinctive approach, the study empirically tests the curvilinear relationship between CSR and FP in the context of Indian. The sample includes 43 firms that are listed in Bombay stock exchange over period 2008 to 2017. The ESG is used as proxy for CSR, whereas FP is measured by ROE, ROCE and TR. Likewise, study controls several variables such as, Size, Leverage, Capital intensity and R&D. Model 1, which tests linear relationship between CSR and FP, shows insignificant relationship between CSR and ROE, ROCE and TR. In case of curvilinear model, results show a U shaped relationship for ROE and ROCE, whereas TR shows insignificant coefficient. Focusing on the BSE 100 index, we find that implementing CSR programs is slightly detrimental to FP in the short term, but will benefit FP in the long term. With the introduction of time dynamics, the traditional dichotomous views on the CSR–FP relationships, as being either positive or negative, can now be conceived of as complementary rather than unchanging and conflicting. These results further enrich the CSR–FP debate by adding a novel perspective of non-linear relationship.

The curvilinear relationship has important implications for policymakers. Nowadays, managers are eager to consider CSR projects, which they increasingly recognize can be a

strategic tool that brings their firms competitive advantages along with an increase in social welfare. However, as our study suggests that there is no immediate advantage from CSR activities, so business stakeholders should take a long-term view when looking at executives' CSR strategies. An immediate managerial implication of our findings suggests that to serve the interests of the shareholders a long run planning and considerable resources should be dedicated at this direction, given that CSR expenditure does not pay off immediately. Our research thus provides managers with both courage and caution, in that CSR will generate positive results but will hurt at lower level. Furthermore, most contemporary companies are established and governed according to traditional theories that stress profit and managers are perpetually held to justify their CSR strategies. The financial underpinning of CSR gives it a strategic position in the corporate world and prompts firms to voluntarily initiate CSR programs for superior FP. Making CSR obligatory does not signify that companies will respond positively and go beyond legislative requirement, if they, do not see any financial prospect. In other words, the financial outcome of social activates gives it legitimacy from stakeholders.

The main limitation of this study is the fact that ESG fails to capture actual CSR activities. Most appropriate measure for CSR would have been the actual amount spends on different activities. However, Indian law does not require companies to disclose such information in the public domain. Nevertheless, different scales to measure CSR share the same limitation. Second, the study does not take the kind of CSR which has profound impact on FP. Studies based on monolithic constructions of CSR – those that collapse different CSR activities into a single construct or those using only a single proxy – may fail to capture significant differential effects. Third, this study has taken companies having high market capitalization. Therefore, we should be cautious to generalize these results. Therefore, future research should take these limitations in account to further validate the findings.

An interesting avenue for further research is to move beyond dichotomous thinking and linear relationship. A well-designed and prudently chosen dataset, as well as as better research methods, will certainly enhance the accuracy and generalizability of the findings. Therefore, further empirical studies need to be conducted in developing countries with more qualified methods to validate the results.

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