Corporate Social Performance and Corporate Financial Performance: A Link for the Indian Firms

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Abstract
The present study addresses the issue of the relationship in the midst of Corporate Financial Performance (CFP) and Corporate Social performance (CSP) or Corporate Social Responsibility (CSR) in Indian connection under good management theory. The study utilized S&P ESG India Index as a substitute of CSP/CSR of Indian firms for the first time over the 2005–2011 periods. We outlined econometric models and controlled industry particular traits and performed Weighted Least Square technique for the investigation. General results show unbiased however unobtrusive negative connection between these which in the long run advises that if there would be any relationship, it would be negative.

Keywords: corporate financial performance (CFP), corporate social responsibility (CSR), econometric, India, and weighted least square (WLS)

Introduction
The today's financial and business world is experiencing with firms occupied with a solemn deliberations to portray and incorporate Corporate Social Responsibility (CSR) into all periods of their organizations and devote their assets and managerial fixation to it. There is escalating demand for transparency and disclosures (T&D) and continuous improvement in social, environmental, and economic performance for firms and moreover, liability towards its stakeholders - customers, shareholders, suppliers, employees and the community. The fragmentary discussions on the expenditure on CSR activities are of worth to organizations or not, are still on. Three many years

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of examination concerning the connection in the middle of Social Performance of corporate additionally alluded as CSR and Financial Performance of corporate (CFP) set forward that CSR help company’s profitability (Orlitzky et al. 2003) in heft of the studies (Laan et al. 2008).

CSP portrays the upshots of socially responsive conduct (Wood, 1991). CSR has become a precondition for firms to secure their long-term accomplishment and competitiveness (Clarkson, 1995). Each company differs in the way, it implements CSR into their business process. Company’s size, industry, business culture, stakeholder demands and historical CSR engagement are important factors. Accordingly, it gets to be crucial that CSR strategy ought to be aligned with the explicit business targets and center capabilities (Tsoutsoura, 2004).

However, Friedman (1970) stated the resources spent on CSR activities are of corporate and coming from the pockets of its shareholders in his well publicized New York Times Magazine article. Thus, CSR ought not to be measured as value-maximizing to the organization. Later, agency theory underpinned this viewpoint where agency issues that permit managers to go about as principals not as operators of shareholders can bring about interest as well investments in CSR that is not compensated in the commercial space. On the off chance that, the contention introduced by the Agency Theory is accepted to be satisfactory; there would be a negative connection in the middle of CSP and CFP. Likewise, in a straightforward financial model of a profit maximizing firm, attempting to fulfill different stakeholders, forces extra requirements on the firm, and this can just abatement benefits, in the event that it has any impact (Moon, 2007).

As a blistering topic of debate, CSP - CFP explored worldwide but lacks insights from Indian perspective. Further, continuing growth in CSR acts and CSR reporting gave a rise and concern towards assessing its financial implications from business point of view in developing economies who have become hub of CSR activities in general. Thus to explore the relationship of CSR/ CSP with CFP of Indian firms, researcher was motivated to design this empirical study. Hence, the primary objective of the present study is to explore the nature and the direction of the association shared between the financial performance and the social performance of the Indian organizations.

**Literature Review and Hypothesis Development**

**Literature Review**

Concentrated on widely, the relationship in the middle of CSP and CFP has been a scorching theme of consultations among researchers for a century (Preston and O’ Bannon, 1997; Simpson and Kohers, 2002; Griffin and Mahon, 1997; Mcwilliams and Siegel, 2000). Previous literature indicated uncertain comes about on the association in the middle of CSP and CFP (Ullman 1985). Innumerable empirical studies have implied the ambivalent their relationship (Alexander and Buchholz, 1982; Aupperle et al. 1985; Ullman 1985) furthermore, few studies reported positive association (Waddock and Graves, 1997; Wokutch and Spencer, 1987; McGuire et al. 1988;
while different studies delineated negative connection (Marcus and Goodman, 1986; Holman et al. 1990; Lerner and Fryxell, 1988).

In the middle of CSP and CFP, positive association recommends that social responsibility pledge would build expenses to competitiveness and reduce the far away expenses of stakeholders in type of great issues with workers, suppliers, and clients that is key for sustainability (Yang et al. 2009). Bowman and Haire (1975) believed that CSR is a symbol of reputation. Consequently, when an organization builds its expenses by enhancing CSP to improve competitive advantages, such social activities may enhance reputation, thus, long run budgetary execution could be enhanced, by yielding the fleeting CFP (Yang et al. 2009). The negative association of CSP and CFP advocates that the acknowledgment of CSR will convey focused disadvantages to the business (Aupperle et al. 1985) as the generous expenses may posture for additional systems or need to endure different expenses and expanded expenses because of CSR exercises will bring about little increase if measured in financial investment (Yang et al. 2009). A few strategists push that there are exorbitantly mediating variables to watch over any immediate relationship in the middle of CFP and CSP separated from the conceivably by chance (Ullman 1985). Mcwilliams and Siegel (2000) likewise confirmed that this relationship would blur away with the presentation of extra exact variables, e.g. Research and development into the economic models.

The research on the CFP - CSP link has employed a variety of theories and methodologies. Waddock and Graves (1997) utilized a ‘lagged cross-sectional data’ to examine the connection utilizing the KLD social ratings and uncovers that preceding year’s CSR is optimistically connected with current year’s financial performance under Good Management Theory. Mcwilliams and Siegel (2000) have contended that the investigation of Waddock and Graves (1997) has not utilized a crucial instructive variable - R&D Intensity i.e. emphatically interrelated with both CSP and in addition CFP. Mcwilliams and Siegel (2000) also claim that presenting R&D Intensity would vanish this relationship. Berman et al. (1999) researched this relationship by perceiving the probability of Heteroscedasticity and Autocorrelation in the error term. Ruf et al. (2001) safe a First Difference Approach to look at how the change in CSP effects changes in CFP in one, two, and three years’ time some spot around 1990 and 1991 (Table 1).
### Table 1. Comparison with Benchmark Studies

| STUDY                        | Waddock & Graves (1997) - OLS | McWilliams and Sigel (2000) - OLS | Moon (2007) - OLS | Laan et al. (2007) - FEM | Tyagi and Sharma (2012) - REM |
|------------------------------|--------------------------------|---------------------------------|------------------|--------------------------|-----------------------------|
| Coefficients                | Accounting Measures           | Accounting Measures             | ROA              | ROA                      | ROA                         |
| CSP                         | 0.024***                       | 0.141***                        | -0.062           | 0.003                    | 0.07                        |
| Risk                        | -0.120***                      | -0.71***                        | Y                | Y                        | N                           |
| LEVERAGE                    | 0.502e-6*                      | 0.136e-6                        | Y                | Y                        | N                           |
| SIZE                        | 0.263***                       | 0.37***                         | 0.15             | 0.01                     | N                           |
| R&D_intensity               | N                              | N                               | Y                | Y                        | Y                           |
| INDUSTRY                    | N                              | N                               | N                | N                        | N                           |
| YEAR                        | N                              | N                               | N                | N                        | N                           |
| R²                          | 0.29                           | 0.20                            | 0.15             | -                        | -                           |
| AR²                         | 0.27                           | 0.17                            | 0.29             | -                        | -                           |
| F Stat                      | 11.55***                       | 6.99***                         | -                | -                        | -                           |
| Observations                | 469                            | 524                             | 2669             | 1829                     | 1791                        |
Hypothesis Development

Premeditated literature analysis on the relationship of CSP and CFP revealed mixed evidences especially positive impact on Financial Performance of the firm. However, it is still a controversial theme whether CSP pays back to firm or not. Significantly in the wake of experiencing a noteworthy positive CSP - CFP relationship in the larger part, researchers have a tendency to wrap up the contact as uncertain, intricate, and shady (Griffin and Mahon, 1997; Arlow and Gannon, 1982; Margolis and Walsh, 2001; Roman et al. 1999). It has been figured out in decent number of studies that the purposes behind anticipating an affiliation are not unmistakably verbalized (Jawahar and Mclaughlin 2001, p. 399).

Further, review also observed that most of the studies dealt with developed nations where United States was the central of attraction while only a few studies investigated developing economies. Among all the accessible literature, only few studies exist in Indian context which shows that there exists gap in the literature and form the base of conducting the study in India (Table 2). According to KPMG survey (2005), Asian firms over and over again trail following their western counterpart on CSR performances and it is evident that focal point of Indian firms by and large are on community development under their CSR activities (PiC, 2004). Though, philanthropic point of reference of Indian businessmen has its ancestry in record, a ‘20-country public opinion survey’ revealed that India comes toward the end in the phase of CSR stipulated from firms at all nations (Environics International, 2001). Short of unarguable connection in the middle of CSR and firm execution over and again put a damper on things from CSR engagement perspective (British Council et al. 2002). Then again, at present, Indian organizations are on track in changing their state of mind for CSR by looking outside simply easygoing goodwill. CSR for organizations is additionally representing improved brand picture and strong bond with the nearby neighborhood (PiC, 2004; British Council et al. 2002).

| RESEARCH CONTINENT | PERCENTAGE |
|--------------------|------------|
| Developing Economies | 15%        |
| Developed Economies  | 51%        |
| Mixed Economies      | 14%        |
| Not Applicable       | 20%        |

Table 2. Research Continent

It was additionally observed that Accounting measures took after by Market measures were most loved decision of the majority of the studies for contrasting CSR performance of the firms. Griffin and Mohan (1997) found around 80 diverse CFP measures utilized within studies where firm size, return on equity, asset age, return on assets, in addition to return on sales are repetitively worn measures. Uniquely, ROA is without fall flat thought to be genuine processing of financial performance (Berman et al. 1999; Mcguire et al. 1988). The present study utilized both measures.
For Social Performance measure, the exhausted numbers of studies employed different measures thus have often been criticized for applying unfit CSR measures. Reputation Scores or Ethical Ratings were broadly utilized CSP measure for the analysis. Nonetheless, in Indian setting, finger tally studies which survey this relationship have not even utilized bona fide information of social performance. Mishra and Suar (2010) scrutinized influence of CSR on ‘financial and non-financial performance’ (NFP) of firms from India towards primary stakeholders used self-developed CSR measure. Bedi (2009) considered the connection between social expenditure and financial performance of top Indian firms using Karamyog rating which is not authentic. The investigation of Mittal et al. (2008) utilized careful investigation strategy to investigate the CSR nature of top Indian firms. Accordingly, the absence of true measures in Indian studies incited to direct a study with more dependable measures and markers. Subsequently, making rationale for conducting further research and provide empirical evidences. Other paramount studies are Singhania (2011) and Banerjee et al. (2009) which tried corporate influence execution on financial performance of Indian organizations however effect of Social Performance on CFP was not investigated in both the studies. The present study utilizes the only available authentic measure of CSP of that time for Indian firms as S&P ESG India Index to fill the gap.

**Conceptual Framework and Hypothesis Development**

Creating reputation among stakeholders would give advantage over other firms in form of loyalty from employees, customer and suppliers which give power of retaining, increased sales and bargaining and much more. Repute may accolade socially responsible firms from their stakeholders especially in the long run (Moneva and Ortas, 2008; Porter and Kramer, 2006; Roberts and Dowling, 2002; Zairi and Peters, 2000).

Besides, as indicated by Berrone et al. (2007), stakeholder contentment enhances execution accurately in light of the fact that it is inclined to create intangible wealth of positive portrait and reputation (Melo and Galan, 2011). It would be these 'elusive, hard to-duplicate stakes' (Roberts and Dowling, 2002; Branco and Rodrigues, 2006; Hillman and Keim, 2001; Lantos, 200; Schnietz and Epstein, 2005) that would make a sort of quality and preference to firms that would finally prompt predominant financial performance. Rose and Thomsen (2004) accepted that the profits of a reputation are none other than the likelihood of requesting a higher cost for the items or services offered by the organization; the payment of lower prices in its buys; drawing in more qualified individuals for the work; more noteworthy dedication from buyers and representatives and more prominent solidness of earnings (cited in Sánchez and Sotorrío, 2007).

Accordingly, this standpoint helps us in outlining following conceptual model to study the CFP - CSP relationship of Indian firms (Figure 1).
On the basis of deliberate literature reviews, we observed comprehensive linkage between CSP and CFP especially where most discourses show positive correlation (Moskowitz, 1972; Cochran and Wood, 1984; Waddock and Graves, 1997) indicating that the genuine costs of CSR activities are payback in long run. A firm that drops off its implicit expenses by socially flippant conduct — by, case in point, fail to take measures against contamination will in the long run acquire higher unequivocal expenses (Tsoutsoura, 2004).

Considering these annotations, the study besides, hypothesize that CSP and CFP have a positive causal affiliation following mixed approaches of various studies. Further we also expect certain CFP measures may have different relation to ESG individually while regressing the ESG.

**Hypothesis** - *Higher CSP leads to higher CFP, ceteris paribus.*

**Research Design**

**Sample**
The firms listed on the National Stock Exchange (NSE) as well as Standard and Poor’s Environment Social Governance (ESG) India 500 Index was selected as a sample. Attention was restricted to Indian firms that fit in the S&P ESG Index for *at least 6 years* during 2005 to 2011 period. After merging the two data sources, unbalanced panel of 1995 company years representing 297 firms (Appendix 2) and an average of 6.72 years per firm was emerged after removing extreme observations for the final analysis.

**Variables**
Dependent variable of the study is CFP while independent variable is a CSP along with other control variables.
Corporate Social Performance

Past studies have utilized different techniques to focus CSP and this dissimilarity was reasonably in charge of raising a mixed bag and mixture of results (Waddock and Graves, 1997). The majority of the studies have used CSR scores or ratings to measure the CSP like US and other western countries. Earlier Indian firms have no such index / ratings to rate their CSP until 2005 when CRISIL\textsuperscript{1}, S&P \textsuperscript{2}and KLD\textsuperscript{3} collaboratively launched Environmental, Social and governance (ESG) Scores of Indian firms. This study uses these ESG scores as a proxy for measuring CSP.

Supported by the International Finance Corporation\textsuperscript{4} (IFC), and created by an association of Standard & Poor’s, CRISIL, and KLD, the first of its class index to measure 'Ecological, Social, and Corporate Governing' practice through quantitative as differentiating to subjective components. The index makes utilization of special and inventive procedures that measures an organization’s ESG performances and converts them into a scoring framework to grade each one organization by their associates in the Indian commercial center.

Each company is allocated a quantitative score / ranking based on three factors – transparency and disclosure (T&D) on ‘Corporate Governance, Environment, and Social Governance’ as stated by the company’s published information. The scoring procedure of ‘Qualitative Assessment’ involves an investigation of independent resources of information from NGOs, agencies as regulatory, media, in addition to corporation’s own sources as websites, annual reports, and sustainability reports. For each company, a Final composite ESG score is calculated by summing the qualitative and the quantitative score (Table 3).

\textsuperscript{1}CRISIL is one of the India's heading Research, Ratings, Policy and Risk Advisory Company that offers domestic and global clients a novel mix of home knowledge and international standpoints, conveying free data, assessments and results that improve business and investment choices, enhance market productivity and market participants. CRISIL also support to shape infrastructure policy, strategy and ventures in the course of incorporated scope of capacities as credit scores and risk evaluation; investigation on the economy, businesses in addition to organizations of India; risk management in addition to infrastructure consultative services.

\textsuperscript{2}S&P- Standard & Poor is the global leader in index service provider and continuously offers a extensive blend of standard indices for investment to help the investor community. From the family for S&P indices, S&P 500 and S&P Global 1200 index hold great investment and benchmarked. The S&P 500 has got investment of $1.32 trillion and also benchmarked value of $4.91 trillion while on the other hand, S&P Global 1200 is a composite index encompasses seven regional along with country headlines.

\textsuperscript{3}KLD Research & Analytics, Inc. is a self-governing research organization in investments that offers various managerial tools to incorporate Environmental, Social and Governance variables (ESG) while making investment choices. KLD Indexes is a division of KLD Research & Analytics, Inc. that put together indexes, recognized as the benchmarks for ESG venture strategies for being transparent, ambassadors as well as investable.

\textsuperscript{4}IFC is a part of the World Bank Group and it encourages sustainable development in emerging nations through funding private segment investments, mobilizing private capital within domestic as well as global money related marketplace. IFC also offer consultancy and risk mitigation services to business as well as government sector.
Corporate Financial Performance

Measuring financial performance is expected as a less intricate mission, however it excessively has its particular consequence. Estimation of financial or economic performance is possible in two strategies – first, market based (e.g., EPS, value of stock, and profit payout) and second, accounting-based (e.g., ROE, ROA and so forth) exhibitions. Here, too, is insignificant accord about which component ought to be utilized (Surroca and Tribó, 2008; Roberts and Dowling, 2002; Waddock and Graves, 1997). Both of these measures describe different points of view on the best way to gauge financial performance of a firm, and both have distinctive hypothetical essences (Hillman and Keim, 2001) and everyone is open to specific prejudices as pointed in McGuire et al. (1986).

Accounting measures by and large put spotlight on how firm income react to managerial strategies (Cochran and Wood 1984) and catches just chronicled parts of the performance of the firm (Mcguire et al. 1986). Additionally, they are question to predisposition from management control (Orlitzyky et al. 2003) as well as contrasts in managerial methodology’s (Branch, 1983; Brilloff, 1972). On the other side, Market measures have frontward approach and possess less vulnerability to distinctive Accounting methodology. Moreover, McGuire et al. (1988) highlighted that these measures articulate the investor’s assessment about the firm’s capacity to produce future financial profits. As per our line of thinking, present study use both Accounting and Market based measures to work subjectivity's tribulations taking certainties concerning to the business sector what's more, it is a far reaching measure.

The present study complements financial data from the Capitaline Plus database for

"CAPITALINE is online database of extensive information of Indian organizations such as Bio-information, Financial Information, Collaborators, 10-year Profit & Loss, Balance Sheet, Schedules & Notes to Account, Shareholding Patterns, Fund Flows, and Financial Ratios among others."
the year 2005 through 2011. The study employs RONW or ROE (Return on Net Worth / Return on Equity) also used by Waddock and Graves (1997), Spicer (1978), Cowen et al. (1987), Preston and O’Bannon (1997), ROA (Return on Assets) used by Aupperle et al. (1985), Preston and O’Bannon (1997), McWilliams and Siegel (2001), Waddock and Graves (1997), ROCE (Return on Capital Employed) consistent with Balabanis et al. (1998), Poddi and Vergalli (2009), EPS (Earning Per Share) consistent with Brangdon and Marlin (1972), Sturdivant and Ginter (1977), Parket and Elibirt (1975) along with OPM / ROS (Operating Profit Margin / Return on Sales) applied by Waddock and Graves (1997), Tsoutsoura (2004), Yang et al. (2009) in addition to Ruf et al. (2001).

**Control Variables**

A pile of studies has poured attention about the CFP - CSP relationship over other important factors that can have potential influence on firms’ performance as industry sector, size, risk and R&D expenses.

The industrial sector has a potentially strong impact on social credential. Firms whose financial activities may alter the earth notwithstanding the associations working in regular assets (mining, ranger service, oil, gas...) are further limited in ecological show contrasted with different sectors (Dierkes and Preston, 1977). In the present study, industry sector was controlled using dummy variable. The segmentation of industry sector was based on the average ESG score for each one of the industry. Higher scores designate a superior ranking for the corporation subsequent to diverse characteristics of CSR. As per the scoring, 56 sectors were ranked from highest (1) to lowest (5) and clustered into five major groups (Table 4).

| Sector Score / Scale | ESG Average Score | No of Sectors | No of Observations |
|----------------------|------------------|---------------|--------------------|
| 1                    | 39.7             | 12            | 468                |
| 2                    | 37.0             | 8             | 444                |
| 3                    | 35.7             | 11            | 373                |
| 4                    | 33.8             | 10            | 405                |
| 5                    | 30.5             | 15            | 305                |

The Large firms are able to have more responsible behavior compared to small firms because they may be more attentive to their external stakeholders (Waddock and Graves, 1997) which makes SIZE a relevant variable (Johnson and Greening, 1999; Ullman 1985). Though for measuring company size, authors deviate on which parameter to bring into play. The present study used Market Capitalization (MCAP) for measuring size supported by Moskowitz (1972) and Alexander and Buchholz (1978). Previous studies also controlled for RISK as Ullman (1985), McWilliams and Siegel (2000) because financial efforts towards employees or environmental protection also depend upon the management's room for maneuver (Trebucq and D'Arcimoles, 2002). The present study used Debt to Equity Ratio for controlling risk i.e. consistent with
For sustainable development, companies should keep on making profits. Accordingly, products or services must be proficient enough to influence customer necessities in a feasible approach, which advocates compulsory and unremitting advancement of products or services (Yang et al. 2009). This arose from the consciousness that CSR investment encourages product differentiation (McWilliams and Siegel, 2000) and evidently a growing number of consumers signify CSR elements aggregated into a product (McWilliams and Siegel, 2001). In line with the methodology of Dowell et al. (2000) and Berrone et al. (2007), we divided R&D Expenses by Total Assets to estimate R&D INTENSITY. As the BUSINESS CYCLE has close effect on economic performance, study embraces the year dummies to manage the business cycle effect in the model.

**Autoregressive Econometric Models**

Following the technique of Mahoney and Roberts (2007), the study used Random-effects Feasible Generalized Least Square (FGLS) regression method of panel data to examine the proposed assertions about CSP and CFP, estimated after Hausman Test. As compared to Ordinary Least Square (OLS), FGLS is capable of generating best linear unbiased estimators (BLUE) because it takes into account the variability in the dependent and independent variables explicitly (Gujarati, 2003, pp. 395). For each financial measure, there are three models - model without dummies (A), model with industry dummy (B) and model with industry and year dummy (C).

To avoid potential misspecifications of the tested model, a FGLS specification in the form of cross section weights is used to allow for cross section heteroscedasticity (Eviews 5.1, 2005). All the models are tested for heteroscedasticity and study utilizes the White’s cross section coefficient covariance method, which makes the model robust to cross sectional (contemporaneous) correlation and different error variances in each cross section (Wooldrige, 2002). Since, panel data of current study possess both a time series dimension and a cross sectional one, time series could also have been done instead of the cross sectional dimension. However, the fact that the number of cross sections in the dataset by far exceeds the number of time series supports the choice of cross sectional dimension. Following are the models for the study:

\[
\Delta \text{CFP}_{t,i} = \beta_0 + \beta_1 \Delta \text{ESG}_{i,t-1} + \beta_2 \Delta \text{MCAP}_{i,t-1} + \beta_3 \Delta \text{DE}_{i,t-1} + \beta_4 \Delta \text{RD}_{i,t-1} + e_{it} \quad (A)
\]
\[
\Delta \text{CFP}_{t,i} = \beta_0 + \beta_1 \Delta \text{ESG}_{i,t-1} + \beta_2 \Delta \text{MCAP}_{i,t-1} + \beta_3 \Delta \text{DE}_{i,t-1} + \beta_4 \Delta \text{RD}_{i,t-1} + \text{IS} + e_{it} \quad (B)
\]
\[
\Delta \text{CFP}_{t,i} = \beta_0 + \beta_1 \Delta \text{ESG}_{i,t-1} + \beta_2 \Delta \text{MCAP}_{i,t-1} + \beta_3 \Delta \text{DE}_{i,t-1} + \beta_4 \Delta \text{RD}_{i,t-1} + \text{IS} + \text{YDs} + e_{it} \quad (C)
\]

**Where**

- \( \Delta \text{CFP}_{t,i} \) = financial performance in \( t_{th} \) year (ROA, ROCE, RONW, OPM and EPS)
- \( \beta_0 \) = constant
- \( \beta_1, \beta_2, \beta_3, \beta_4 \) = regression coefficients
- \( \text{ESG}_{i,t-1} \) = a proxy for corporate social performance
- \( \text{DE}_{i,t-1} \) = a proxy for the risk in the \( t_{th} \) year (Debt to equity Ratio)
- \( \text{MCAP}_{i,t-1} \) = a proxy for the size of the firm in the \( t_{th} \) year (Market Capitalization)
- \( \text{RD}_{i,t-1} \) = a proxy for the R&D Intensity (R&D Expenses/Total Assets)
- \( e_{it} \) = unobserved error component of firm \( i \) at year \( t \),
- \( \text{IS} \) = Industry Dummy scaled by ESG scores
- \( \text{YDs} \) = Year Dummies
To remove outliers from the database, present study used robust methods where observations with most extreme outliers were dropped from the samples while extreme outliers were swapped with adjacent values from the remaining data (Barnett and Lewis, 1994). It is to be noted that all extreme observations cannot be removed due to their important contribution in the sample, thus, the method of transformations was adopted so that ‘extreme scores can be kept in the data set yet the skew and error variance of the variable(s) can be reduced’ (Hamilton, 1992).

The data set was examined and all sorts of transformations were employed to ascertain the best transformation method. As suggested by Msetfi (2011, pg. 32-34) finally, power transformation (variable power) or also called Box-Cox transformation was used to remove the skewness. The Levin-Lin-Chu (LLC) Unit Root test (Appendix 2) was also conducted to verify the stationarity of the dataset. The first difference of the transformed variables was performed to remove the first order auto correlation and the unit root existence.

Analysis and Results

Descriptive Results

Table 5 reports correlation among all the dependent, independent and control variables used in the present study. ESG Scores are correlated with all variables at 0.01 and 0.05 significant levels with exception to ROA, RONW and ROCE. This indicates that there is a less than 0.05 probability that a correlated coefficient this large would have occurred by chance.

Table 5. Correlations

|       | ESG  | ROA  | RONW | ROCE | OPM  | EPS  | RDINT | DE   | MCAP |
|-------|------|------|------|------|------|------|-------|------|------|
| ESG   | 1    |      |      |      |      |      |       |      |      |
| ROA   | 0.044| 1    |      |      |      |      |       |      |      |
| RONW  | 0.030| 0.651**| 1    |      |      |      |       |      |      |
| ROCE  | -0.008| 0.625**| 0.621**| 1    |      |      |       |      |      |
| OPM   | -0.064**| 0.307**| 0.182**| 0.722**| 1    |      |       |      |      |
| EPS   | -0.120**| -0.259**| -0.339**| -0.177**| -0.033| 1    |       |      |      |
| RDINT | 0.079**| 0.104**| 0.091**| 0.110**| 0.066**| -0.018| 1     |      |      |
| DE    | -0.094**| -0.330**| -0.118**| -0.037| 0.342**| 0.184**| -0.050*| 1    |      |
| MCAP  | -0.392**| -0.126**| -0.175**| -0.025| 0.039| 0.262**| -0.040| 0.136**| 1    |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
All variables are in Transformed Scale

ROA and RONW found to be correlated with all the variables at p<0.01 significance. ROCE correlates with all the variables except DE and MCAP. OPM is also significantly correlated at p<0.01 with all variables except EPS and Mcap. EPS is strongly correlated with all variables except R&D Intensity (RDINT) and OPM at p<0.05. RDINT is significantly correlated with all variables except EPS and Mcap. DE correlates with all variables except ROCE. Mcap correlates with all variables except ROCE, OPM and RDINT at p<0.05.
Table 6 reports the descriptive statistic of transformed variables. In the present study, mean value of all the dependent variables is quite different to what is documented in benchmark studies. The mean value of CSP or ESG score is 12.51 and SD is 1.93. Other studies reported a mean of CSP are Trebucq and Charles-Henri (2002), Waddock and Graves (1997) and Moon (2007) are -3.02, 0.034 and -0.23 respectively.

For ROA, the mean value is 12.83 and SD is 13.32 that is higher from Garcia-Castro et al. (2009) – mean - 10.54 and SD - 8.53. The study of Waddock and Graves (1997) reported a mean of ROA as 0.06 while Trebucq and Charles-Henri (2002) and Tsoutsoura (2004) reported 5.72 and 5.15 mean value of ROA respectively. Mean value of RONW (also referred as ROE) is 7.78 and SD is 3.68. Other studies reported a mean of RONW/ROE are Trebucq and Charles-Henri (2002) – 14.94, Garcia-Castro et al. (2009) - 16.57, Tsoutsoura (2004) - 19.05 and Waddock and Graves (1997) - 0.14. The present study documented mean of OPM (also referred as ROS) as 1.79 and SD as 0.65 which is higher from Waddock and Graves (1997) - 0.059 (mean) and 0.073 (SD). Mean value of EPS in the present analysis is 0.65 which lower to what Laan et al. (2008) reported while SD of EPS is 0.126. Mean value of ROCE is 2.40 while SD is 1.05.

Mean value of DE is 0.77 which is higher from Moon (2007) – 0.64 and Laan et al. (2008) – 0.41. Standard Deviation of DE is 0.74 which is again higher from Laan et al. (2008) – 0.40. Mean of RDINT is 0.003 and SD is 0.011 which found to be lower to what Garcia-Castro et al. (2009) reported – 0.04 (mean) and 0.07 (SD) respectively. Mean and SD of Mcap are 0.75 and 0.036 respectively.

| Table 6. Descriptive Statistics | ESG | ROA | ROCE | RONW | OPM | EPS | DE | MCAP | RDINT |
|--------------------------------|-----|-----|------|------|-----|-----|----|------|-------|
| Mean                           | 12.505 | 12.829 | 2.395 | 7.779 | 1.785 | 0.653 | 0.766 | 0.749 | 0.003 |
| Median                         | 12.380 | 9.665 | 2.550 | 7.520 | 1.931 | 0.634 | 0.660 | 0.754 | 0.000 |
| Maximum                        | 20.383 | 141.834 | 5.139 | 30.566 | 2.851 | 1.834 | 5.609 | 0.837 | 0.104 |
| Minimum                        | 7.885 | 0.065 | 0.000 | 0.000 | 0.000 | 0.398 | 0.000 | 0.639 | -0.002 |
| Std. Dev.                      | 1.929 | 13.316 | 1.053 | 3.678 | 0.652 | 0.126 | 0.744 | 0.036 | 0.011 |
| Skewness                       | 0.617 | 3.872 | -1.039 | 1.227 | -1.724 | 1.662 | 1.687 | -0.670 | 5.813 |
| Kurtosis                       | 3.946 | 30.603 | 3.860 | 8.698 | 5.648 | 10.531 | 7.990 | 3.171 | 43.196 |
| Observations                   | 1995 | 1911 | 1974 | 1946 | 1963 | 1904 | 1995 | 1995 | 1995 |

All variables are in Transformed Scale

Panel Data Regression Results

The hypothesis of the study is in line with the work of Waddock and Graves (1997), Trebucq and Charles-Henri (2002), Mcwilliams and Siegel (2001), Roberts and Dowling (2002), Laan et al. (2008), Ruf et al. (2001), Garcia-Castro et al. (2009), Yang et al. (2009), in addition to Fauzi (2009). To assess study proposition, three econometric models were designed of each financial performance measure as the dependent variable which will result into 15 different models.

As mentioned earlier that before running the models, data were transformed and differenced to overcome the problem of unit root and auto – correlation and also validated from Hausman test to ensure the appropriate panel data technique. Feasible GLS
with Cross Section Weights was performed for data analysis (Table 7). As already informed, in all the models A, B and C denotes no dummies, industry dummy and industry and year dummies respectively which documents the results of each financial measure as dependent variable.

The adjusted R Square provides for some thought of how well the model simplifies and in a perfect world, it ought to be little or near R Square. From the models of ROA financial measure, $AR^2$ and $R^2$ revealed that the predictors together for Indian firms could explain more than 23% variation in ROA in each model. The difference between $AR^2$ and $R^2$ here is 3% that means that if the model were derived from the population rather than a sample it would account for approximate 3% less variance in the outcome. Overall R square of ROA is closed to Waddock and Graves (1997) and Moon (2007).

Similarly other financial measure also reports significant contribution to the outcome. It is to be noted that each model of financial measure with industry and year dummy have demonstrated more variation level or r square than models without any dummy. This implies that significant role of business cycles and operating industry.

If a model is good then it is expected that there is an improvement in the prediction, and the variation between the model and the observed data to be small. Thus, a fine model be supposed to include large F statistic (larger than 1 no less than) at significant p value 0.01. Here F statistic is greater than 1 in every model of each financial measure and is significant at $p<=0.01$. This indicates that the model is significant in predicting the outcome variable.

The table also reports b-values of each predictor indicating their individual contribution into the model. ESG show modest negative coefficient in all the models of each financial measure, though the sign is significant only with ROA and RONW at $p<=0.05$. This outcome is consistent with Waddock and Graves (1997), Garcia-Castro et al. (2009), Hillman and Keim (2001) and McWilliams and Sigel (2000).

DE found to be significant in all models at $p<=0.05$ i.e. consistent with the work of Laan et al. (2008), Trebucq and Charles-Henri (2002), and Fauzi (2009) except in case of RONW. R&D Intensity and Mcap are statistically significant in all of the models at $p<=0.05$ of each financial measure implying the significant contribution except in model 4C. Studies of Choi et al. (2010), Apostolakou and Jackson (2009) and Waddock and Graves (1997) also documented size as an important variable in the model. The study of Trebucq and Charles-Henri (2002), McWilliams and Sigel (2000), Garcia-Castro et al. (2009) and Laan et al. (2009) confirm that R&D is an important determining factor of CSR.

Here different coefficient was obtained in all the models, which indicate no relationship between dependent and independent variable, so, as the values of predictor increase, or decrease, CFP will have no impact. The b value also informs about to what degree each predictor affects the outcome ‘if the effect of all other predictors are held constant’. The significance value associated with t test statistics informs the significant contribution of each predictor in the model (at $p<=0.05$).
### Table 7. Panel EGs - Cross Section Weights - ESG Score (Independent)

| Dependent Variable | ROA | RONW | ROCE | OPM | EPS |
|--------------------|-----|------|------|-----|-----|
| **Model No.**      | 1A  | 1B   | 1C   | 2A  | 2B  |
| Industry Dummy     | N   | N    | Y    | N   | N   |
| Year Dummy         | N   | N    | Y    | N   | N   |
| Beta               | 0.004 | 0.702* | 0.669* | -0.017 | 0.628* |
| Constant           | 0.083* | 0.038 | 0.001 | -0.006 | -0.003 |
| ESG                | -0.141* | -0.105* | -0.091* | -0.065* | -0.053* |
| DE                 | 6.211* | 4.142* | 4.043* | 0.182 | -0.230 |
| RDINT              | 66.383* | 63.303* | 64.283* | 19.463* | 15.049* |
| MCAP               | 28.037* | 29.473* | 34.913* | 18.616* | 20.671* |
| **R Square**       | 0.250 | 0.240 | 0.233 | 0.101 | 0.112 |
| **Adjusted R Square** | 0.248 | 0.237 | 0.228 | 0.098 | 0.110 |
| **F Test**         | 123.183 | 97.331 | 46.677 | 42.562 | 40.064 |
| Sig.               | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Durbin Watson (DW) | 1.926 | 1.946 | 1.950 | 2.012 | 2.059 |
| **Hausman Statistics** | 2.61  | 2.57  | 9.83  | 2.91  | 4.47  |
| **Heteroskedasticity Test:** White** | F statistic: 1.74 | 1.80 | 1.79 | 14.75 | 12.38 |
| Obs*R-squared      | 24.26 | 35.73 | 111.42 | 187.66 | 221.33 |
| Scaled explained SS | 545.09 | 802.03 | 2543.83 | 1415.28 | 1668.12 |

*P value is significant at the 0.05 level.

**Each value of white test is significant at the 0.05 level.
Conclusion

The hypothesis of the study is in line with the work of Waddock and Graves (1997), Trebuq and Charles-Henri (2002), Mcwilliams and Siegel (2001), Roberts and Dowling (2002), Laan et al. (2008), Ruf et al. (2001), Garcia-Castro et al. (2009), Yang et al. (2009), in addition to Fauzi (2009). To assess study proposition, three econometric models were designed of each financial performance measure as the dependent variable which will result into 15 different models.

As mentioned earlier that before running the models, data were transformed and differentiated to overcome the problem of unit root and auto-correlation and also validated from Hausman test to ensure the appropriate panel data technique. Feasible GLS with Cross Section Weights was performed for data analysis (Table 7). As already informed, in all the models A, B and C denotes no dummies, industry dummy and industry and year dummies respectively which documents the results of each financial measure as dependent variable.

The adjusted R Square provides for some thought of how well the model simplifies and in a perfect world, it ought to be little or near R Square. From the models of ROA financial measure, AR² and R² revealed that the predictors together for Indian firms could explain more than 23% variation in ROA in each model. The difference between AR² and R² here is 3% that means that if the model were derived from the population rather than a sample it would account for approximate 3% less variance in the outcome. Overall R square of ROA is closed to Waddock and Graves (1997) and Moon (2007).

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DE found to be significant in all models at p <=0.05 i.e. consistent with the work of Laan et al. (2008), Trebuq and Charles-Henri (2002), and Fauzi (2009) except in case of RONW. R&D Intensity and Mcap are statistically significant in all of the models at
$p \leq 0.05$ of each financial measure implying the significant contribution except in model 4C. Studies of Choi et al. (2010), Apostolakou and Jackson (2009) and Waddock and Graves (1997) also documented size as an important variable in the model. The study of Trebucq and Charles-Henri (2002), McWilliams and Sigel (2000), Garcia-Castro et al. (2009) and Laan et al. (2009) confirm that R&D is an important determining factor of CSR.

Here different coefficient was obtained in all the models, which indicate no relationship between dependent and independent variable, so, as the values of predictor increase, or decrease, CFP will have no impact. The b value also informs about to what degree each predictor affects the outcome 'if the effect of all other predictors are held constant’. The significance value associated with t test statistics informs the significant contribution of each predictor in the model (at $p \leq 0.05$).
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Appendix 1. Results of LLC Panel Unit Root Test

Null Hypothesis: Unit root (common unit root process)
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on MAIC: 0 to 2
Newey-West automatic bandwidth selection and Bartlett kernel
Total number of observations: 17292

| VARIABLES | NO TREND | TREND |
|-----------|----------|-------|
|           | Statistics | Obs. | Statistics | Obs. |
| ESG       | -1.25879  | 1993 | -1.25879  | 1993 |
| ROA       | -1.13314  | 1808 | -1.13313  | 1808 |
| ROCE      | -1.09274  | 1939 | -1.09277  | 1939 |
| RONW      | -1.19271  | 1870 | -1.19270  | 1870 |
| OPM       | -1.01149  | 1907 | -1.01150  | 1907 |
| EPS       | -1.18460  | 1797 | -1.18469  | 1797 |
| DE        | -1.02019  | 1993 | -1.02019  | 1993 |
| RDINT     | -1.12251  | 1992 | -1.12251  | 1992 |
| MCAP      | -1.24650  | 1993 | -1.24650  | 1993 |
| LLC       | STATISTIC | PR | STATISTIC | PRO |
| RESULTS   | -175.028  | 0.00 | -247.753  | 0.00 |
| Sn. | Name of Firms          | Sn. | Name of Firms          | Sn. | Name of Firms          |
|-----|------------------------|-----|------------------------|-----|------------------------|
| 1   | A B B                  | 36  | Canara Bank            | 71  | Gateway Distr.          |
| 2   | Aban Offshore          | 37  | Carborundum Uni.       | 72  | GlaxoSmrit Pharma       |
| 3   | ACC                    | 38  | Century Textiles       | 73  | GlaxoSmith C H L        |
| 4   | Adani Enterp.          | 39  | CESC                   | 74  | Glenmark Pharma.        |
| 5   | Aditya Bir. Nuv.       | 40  | Chambal Fert.          | 75  | Godfrey Phillips        |
| 6   | Alfa Laval (I)         | 41  | Cipla                  | 76  | Godrej Consumer         |
| 7   | Allahabad Bank         | 42  | CMC                    | 77  | Godrej Inds.            |
| 8   | Alok Inds.             | 43  | Colgate-Palm.          | 78  | Graphite India          |
| 9   | Alstom Projects        | 44  | Container Corpn.       | 79  | Grasim Inds             |
| 10  | Andhra Bank            | 45  | Coromandel Inter       | 80  | Greaves Cotton          |
| 11  | Apollo Hospitals       | 46  | Corporation Bank       | 81  | GTL                     |
| 12  | Apollo Tyres           | 47  | CRISIL                 | 82  | Guj Alkalies            |
| 13  | Arvind Ltd             | 48  | Crompton Greaves       | 83  | Guj Fluorochem          |
| 14  | Asahi India Glas       | 49  | Cummins India          | 84  | Guj Gas Company         |
| 15  | Ashok Leyland          | 50  | Dabur India            | 85  | Guj Inds. Power         |
| 16  | Asian Paints           | 51  | DCM Shriram Con.       | 86  | H D F C                 |
| 17  | Aventis Pharma         | 52  | Deepak Fert.           | 87  | H P C L                 |
| 18  | B H E L                | 53  | Dena Bank              | 88  | Havells India           |
| 19  | B P C L                | 54  | Dishman Pharma.        | 89  | HCL Infosystems         |
| 20  | Bank of Baroda         | 55  | Divi's Lab.            | 90  | HDFC Bank               |
| 21  | Bank of India          | 56  | Dr Reddy's Labs        | 91  | HEG                     |
| 22  | Bannari Amm.Sug.       | 57  | EID Parry              | 92  | Hero Motocorp           |
| 23  | BEML Ltd               | 58  | Electrost.Cast.        | 93  | Hexaware Tech.          |
| 24  | Berger Paints          | 59  | Engineers India        | 94  | Hind.Construct.         |
| 25  | Bharat Electron        | 60  | Esab India             | 95  | Hind.Oil Explor.        |
| 26  | Bharat Forge           | 61  | Essar Oil              | 96  | Hindalco Inds.          |
| 27  | Bharti Airtel          | 62  | Exide Inds.            | 97  | Honeywell Auto          |
| 28  | Bhushan Steel          | 63  | Fag Bearings           | 98  | Hotel Leela Ven.        |
| 29  | Biocon                 | 64  | Federal Bank           | 99  | I O B                   |
| 30  | Birla Corpn.           | 65  | Finolex Cables         | 100 | I O C L                 |
| 31  | Blue Star              | 66  | Finolex Inds.          | 101 | ICICI Bank              |
| 32  | Bombay Dyeing          | 67  | G M D C                | 102 | IDBI Bank               |
| 33  | Britannia Inds.        | 68  | G N F C                | 103 | IFCI                    |
| 34  | C P C L                | 69  | G S F C                | 104 | India Cements           |
| 35  | Cadila Health.         | 70  | GAIL (India)           | 105 | Indian Hotels           |
106  Indraprastha Gas  143  Nag. Fert & Chem  180  Shree Cement
107  IndusInd Bank  144  Natl. Aluminium  181  Shriram Trans.
108  Infosys  145  Nava Bharat Vent  182  Simplex Infra
109  Infotech Enterp.  146  Navneet Publicat  183  Sintex Inds.
110  ING Vysya Bank  147  NDTV  184  SKF India
111  Ingersoll-Rand  148  Neyveli Lignite  185  South Ind.Bank
112  Ipca Labs.  149  NIIT  186  SREI Infra. Fin.
113  ITC  150  NTPC  187  SRF
114  IVRCL  151  O N G C  188  Sterlite Inds.
115  J & K Bank  152  Opto Circuits  189  Sun Pharma.Inds.
116  Jain Irrigation  153  Orient Chemicals  190  Sundram Fasten.
117  Jet Airways  154  Orient Paper  191  Supreme Inds.
118  Jindal Steel  155  Oriental Bank  192  Tata Chemicals
119  JSW Steel  156  P & G Hygiene  193  Tata Motors
120  Jyoti Structures  157  Panacea Biotec  194  Tata Power Co.
121  Kalpataru Power  158  Patni Computer  195  Tata Steel
122  Kansai Nerolac  159  Peninsula Land  196  TCS
123  Karnataka Bank  160  Petronet LNG  197  Thermax
124  Karur Vysya Bank  161  Pfizer  198  Thomas Cook (I)
125  Kesoram Inds.  162  Pidilite Inds.  199  Titan Inds.
126  Kotak Mah. Bank  163  Polaris Finan.  200  Torrent Pharma.
127  KPIT Infosys.  164  Praj Inds.  201  Trent
128  Lak. Mach. Works  165  Prism Cement  202  Tube Investments
129  Larsen & Toubro  166  PTC India  203  TVS Motor Co.
130  LIC Housing Fin.  167  Punjab Natl.Bank  204  UltraTech Cem.
131  Lupin  168  Radico Khaitan  205  Union Bank (I)
132  M & M  169  Rajesh Exports  206  Unitech
133  M R P L  170  Ranbaxy Labs.  207  United Phosp.
134  Madras Cement  171  Raymond  208  Usha Martin
135  Mah. Seamless  172  REI Agro  209  UTV Software
136  Marico  173  Rel. Indl. Infra  210  Voltas
137  Maruti Suzuki  174  Reliance Capital  211  Welspun Corp
138  Mastek  175  Reliance Inds.  212  Wipro
139  Max India  176  Ruchi Soya Inds.  213  Wyeth
140  Monsanto India  177  S A I L  214  Zee Entertainmen
141  Moser Baer (I)  178  S Kumars Nation  215  Zuari Inds.
142  Motherson Sumi  179  Sesa Goa