INDIAN INSTITUTE OF MANAGEMENT CALCUTTA

WORKING PAPER SERIES

WPS No. 721/ January 2013

Corporate Sustainability and Corporate Financial Performance: The Indian Context

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Abstract: This paper examines the company specific characteristics that drive companies in India to superior sustainability performance and reporting as proxied by their presence in a new sustainability index introduced in India in 2008 namely, ESG S&P India Index. It further seeks to investigate whether the corporate financial performance (CFP) is impacted by corporate sustainability performance and reporting (CSP). The study uses probit specifications and panel regressions correcting for potential endogeneity. Our findings suggest that the companies which are large in size, have less leverage, are business group affiliated, have higher R&D and advertisement expenses, and are operating in environmentally sensitive industries are likely to be superior in sustainability. Such superior sustainability performance leads to superior financial performance, captured through multiple measures of ROA, ROE and Tobins Q ratio. The study further uses Ohlson (1995)'s model to understand whether the Indian market values CSP and found results in conformity. These findings have important implications not only for the investors, the corporations, and the managers but also for regulatory authorities, governments and various bodies around the world which are trying to create awareness about sustainability, particularly in emerging economies.

Keywords: Corporate sustainability, Financial Performance, Sustainability Indices, ESG, India

I.   Introduction:

Today the countries across the globe are facing unprecedented sustainability challenges fraught with environmental crisis, financial crisis, social crisis and governance crisis[1]. Hence there has been an accelerated emphasis on the need for making sustainability development goals[2] a universal priority (Earth Summit 1992, 2002, and 2012, IIRC 2012: Rio+20 policy). Business corporations have started realizing that it is high time to move beyond short-term myopic goal of profit-maximization to longer term sustainability goals involving environmental, social, and governance goals (ESG)[3]. Accordingly, companies have started integrating sustainability goals into their corporate strategy [Corporate Sustainability (Figge and Hahn 2004)] and disclosing[4] their sustainability activities in order to assure their legitimacy (license to operate in society) [Corporate Sustainability Reporting (Deegan Craig 2007)]

CSR and sustainability reporting has been extensively studied in the past few decades (Margolis et al. 2009) but the context of emerging economies remain largely unexamined except for few survey reports like US SIF Foundation (2012); Social Investment Forum (2009); GIZ India et al. (2012); and KPMG (2011). CSR behavior seems to vary widely across countries. Emerging economies like India are growing at a very fast rate and have progressed from being the low cost centers of production to new consumer markets, new investment hubs and new investees. These developments are bringing in ESG challenges, to which these economies can no longer afford to remain passive. Various international bodies as well as the governments are trying to create

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[1] environmental like crises of water supply, land degradation, climate change, ozone depletion, global warming, erosion of biodiversity, fuel crisis etc.), financial crisis like the global financial crisis of 2008, social crisis [1] like violence, corruption, child labour, unfair discriminations, human right abuses, governance crisis like Enron & Worldcom in 2002, Satyam 2009

[2] 'Sustainable development' has been defined as "… development that meets the needs of the present world without compromising the ability of future generations to meet their own needs." [Brundtland Commission Report (World commission on Environment Development 1987)].

[3] This is in line with the term "triple bottom line" which was coined by Elkington and which these days have become popular with three pillars of people, planet and profit. (Elkington, J. (1999). Triple bottom-line reporting: Looking for balance. Australian CPA, (March), 19–21)

[4] Sustainability reporting particularly by MNCs (Kolk 2003) has experienced a significant rise in the face of negative implications on ESG associated with globalization.

awareness and bring in regulations to encourage corporate sustainability performance and reporting. Corporations would be encouraged towards sustainability performance and investors would be encouraged to use sustainability based investments if adequate research shows its potential to create long term value.

This paper aims to fill in the much needed gap in the CSR literature in understanding the value of corporate sustainability behaviour in one of the largest emerging market economies namely, India. It explores the specific characteristics which drive a company towards superior sustainability performance and reporting. There is paucity of research answering this question even in the context of developed world. It further examines the relationship between corporate social performance (CSP) and corporate financial performance (CFP) with greater measurement objectivity and methodological rigor than that in the existing literature. Our study is expected to help the corporations in their strategy formulation, the investors in their investment decisions and the policy making bodies in devising means to induce desirable sustainable behavior from the companies, particularly in emerging economies like India.

The rest of the paper is organized as follows. Section II motivates the study by providing a brief outline of the Indian context, the sustainability reporting initiatives and the sustainability based investments. Section III contains a theoretical background of corporate sustainability and review of the relevant literature followed by development of hypothesis in Section IV and the data, methodology and variable definitions in section V. Section VI reports the results and provides a discussion of the results. Section VII concludes the paper and provides direction for future research.

II.   Motivation for the study

India has been one of fastest growing economies of the world and tenth largest by nominal Gross domestic Product (GDP) (IMF's, 2011 estimates). A fast growth is typically associated with ESG challenges[5]. These challenges can impose serious constraints on the economic expansion and stability of the country. With globalization and liberalization, Indian companies are now moving out of their domestic boundaries to do business in foreign lands and get their companies listed in foreign stock exchanges. Global investors and customers they face have become increasingly demanding about the corporate sustainability disclosures. The country has also been experiencing significant inflows of foreign direct investments (FDI) and foreign portfolio investments (FPI)[6]. Many of these foreign investors (like Deutsche Bank, HSBC) are signatories to UN Principles for Responsible Investment (UNPRI) and are becoming increasingly discriminating about the ESG issues[7]. Indian civil society has grown with more than three million NGOs, many of which are skeptical about the negative externalities of business[8]. These developments have made sustainability performance and reporting very important for Indian businesses.

India in found to be weak in investor protection, weak in law enforcement, poor in financial and overall transparency, and poor in public awareness about CSR (Leuz 2003; Dhaliwal et al. 2012; Social Investment Forum 2009). Corporate sustainability performance and reporting might prove to be very valuable to investors if a country has weak institutional environment. Historically, India has coped up with its weak institutions through formation of business groups (Khanna and Palepu 2000). In fact India has the largest number of business groups affiliated firms (Khanna and Yafeh

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[5] For example, India is under immense international pressure towards binding Green House Gas (GHG) emission targets and disclosure on climate impacts of growth. It is expected to be one of the worst affected countries by climate change. It is trodden with problems of poor infrastructure, poverty, population growth, inequality, child labour, illiteracy, malnutrition, water scarcity, sanitation, energy security, corruption and poor governance.
[6] In 2011-12, the FDI and FPI inflow to India was US $46.8 bn and US $17.4 mn respectively (Source : http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/44T_BLJ080612.pdf).
[7] Norway's government pension fund (a UNPRI signatory) sold off US $13 mn in shares of Vedanta Resources Plc, an FTSE100 Indian based MNC, due to concerns related to environmental, human rights and labor practices in four of its Indian subsidiaries.
[8] http://www.bsr.org/reports/SE124_New_Geographies.pdf

2007). Given the institutional environment and the changes in the country, it would be interesting

to find out whether the special characteristics of Indian companies influence their corporate

sustainability performance and reporting (CSPR) and whether the consequences of their

sustainability performance is different from those found in the developed world.

Sustainability Reporting Initiatives:

Companies adopt sustainability performance and reporting very often because there are regulations

or disclosure requirements needed to be complied with. There have been several initiatives to

encourage sustainability development worldwide. Global Reporting Initiatives (GRI) G3

guidelines, United Nations Global Compact (UNGC)[9]'s annual "Communication of Progress

(COP)" and Carbon Disclosure Project (CDP)[10] annual questionnaires are some of the popular

global frameworks available for sustainability reporting.

 In India, the disclosure requirements related to environment issues was already there to some

extent[11]. Clearer sustainability reporting rules have emerged lately. In December 2009, the

ministry of corporate affairs (MCA) issued *CSR Voluntary guidelines*[12] to encourage businesses

towards socially, environmentally and ethically responsible behavior. In July 2011, it released

National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of

business (NVG), which laid down nine comprehensive core principles to be adopted by companies

as part of their business practice and structured a format for business responsibility reporting. A

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[9] UNGC encourages companies to voluntarily embrace 10 principles encompassing areas of Human-rights, Labour, and environment and Anti corruption in its strategy, culture and operations. A company can participate in the Global compact principles by reporting through "Communication of Progress (COP)" on annual basis. A CoP is communication to the stakeholders about the progress a company has made in embracing the 10 principles in its business practices or otherwise.
[10] CDP is used by organizations across the world to measure and report Green house gas (GEG) emissions, water usage and climate change parameters.
[11] According to Companies (Disclosure of Particulars in the Report of Board of Directors) Rules, 1988 (effective from 1st April 1989), every company is required to disclose, as part of its Director's Report, efforts made by the company towards conservation of energy, technology absorption and its foreign exchange earnings and outgo. SEBI's Clause 49 of listing agreement provides an exhaustive list of matters that a listed company must place before its Board and the same includes ESG issues like pollution problems, significant labor problems, product liabilities etc. In June 2008, GOI released 'National action plan on climate change', which intended to promote clean technology and outlined eight national missions to be worked through 2017.
[12] The document indicated six core elements to be covered in CSR Policy of a company and suggested that the companies disseminate their CSR activities through websites, annual reports and other media. The six core elements were: Care for stakeholders, Ethical functioning, Respect for Human Rights, Environment & Workers' Rights and Welfare, Activities for Social and Inclusive Development.

company was required to either report its sustainability performance or explain the reason for not doing so.

In August 2012, Securities and Exchange Board of India (SEBI) issued a circular mandating top 100 listed companies (based on market capitalization in BSE and NSE as on 31st March 2012) to submit Business Responsibility (BR) Report as part of their Annual Report, with effect from financial year ending on/after 31st December 2012. This is in tune with recent inclination of global investors towards "integrated reporting framework[13]" since it will help them compare companies across markets. The Companies Bill 2011, passed in 2012 requires companies which meet certain thresholds in terms of sales, net worth or profits, to have a committee on CSR, a CSR Policy on Board's report and to spend 2% of their three year average profits[14] on CSR activities.

So one can see how over time, the government and regulatory bodies in India changed their role from an enabler to an enforcer of corporate sustainability reporting. With new regulations, companies in India can be expected to be active on sustainability performance. These changes make this study very timely.

Sustainability based responsible investing and the need for ESG data

Sustainability reporting help investors use environmental, social and governance (ESG) screens in their investment decisions. Long term value (Bebbington 2001) and returns comparable with the conventional investments, associated with use of such screens has led to growth of Socially Responsible Investment (SRI) [15] (Renneboog et al. 2008) and development of various sustainability indices across the world like Dow Jones Sustainability Index (DJSI). International working group (IWG) of US Social Investment Forum identified that lack of ESG data from

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[13] It is being developed by International Integrated Reporting Council (IIRC). It intends to include non-financial disclosures like those related to sustainability; risks etc into corporate reporting framework.

[14] Central public sector enterprises (CPSE) are mandatorily required to set aside a part of their profit for CSR activity

[15] In 2012, the sustainable and responsible investing accounted for around $3.74 trillion out of $33.3 trillion in US investment market place (http://ussif.org/resources/sriguide/srifacts.cfm). The 'Report on Sustainable and Responsible Investing Trends in the United States' estimated the number of investment funds which incorporate ESG factors to be 720 in 2012.

companies in emerging market was inhibiting SRI in the emerging markets. So an emerging

markets disclosure project (EMDP) was created to work on improving sustainability reporting in

emerging markets so as to step-up the sustainable investment activities therein.

In India, SRI is in its embryonic stage[16]. A key event in Sustainability investing in India was

introduction of S&P ESG India Index in January 30, 2008. The index constitutes the best 50 ESG

performing stocks in Indian market. The following chart shows that the S&P ESG India Index

outperformed the S&P CNX Nifty every year since March 2009 to March 2012 (Figure 1)

Figure 1: S&P ESG INDEX versus S&P CNX NIFTY
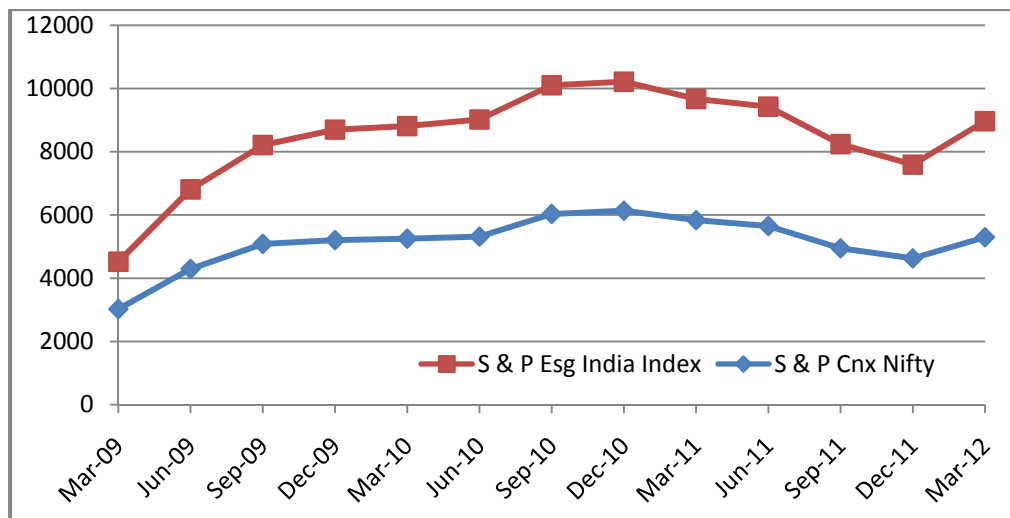
Even though the ESG India Index performed so well, there doesn't seem to be much investing or

management based on ESG in India. Other than few companies (like ITC, ACC etc) issuing press

releases regarding their inclusion in the index, there is insufficient evidence on the impact of the

index on the investors, either in terms of general awareness created or in terms of its usage in

taking investment decisions (TERI-Europe 2009). Inadequacy of good quality ESG research has

often been pointed out as one of the barriers to sustainable investment in India (Siddy, 2008).

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[16] Fortis Sustainable Development Fund (previously called ABN AMRO Asset Management) which has been in operation since 2007, is one of the few sustainability development funds in India. Very recently BSE-Greenex has been launched which measures performance of the companies based on carbon emissions and energy efficiency.

III. A Review of the Literature:

Theoretical background of corporate sustainability

In the past, corporate sustainability (CS) would be associated with environmental issues while corporate social responsibility (CSR) would refer to social issues but these days CS is mostly used interchangeably with CSR and both in substance have similar meaning (Marrewijk 2003; Margolis et al. 2009). The concept of CS or CSR has changed over a period of time. Bowen (1953) defined social responsibilities of businessmen as "obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society". In 1970s, CSR looked like doing charity and waste of useful corporate resources. *According to Traditionalist Agency or 'Shareholders view'*, one and only one social responsibility of business is to maximize profits, of course without committing any fraud (Friedman 1970) But '*Stakeholders View*' posits that in order to be successful, it is critical for a company to go beyond maximization of shareholders interests to taking actions which balance the interests of other stakeholders like employees, suppliers, customers, communities, government, trade associations, regulatory authorities, media, NGOs etc (Freeman 1984; Roberts 1992). Companies operate in social environment comprising of various stakeholders and if a company fails to operate in a way consistent with what is expected or considered legitimate by the stakeholders, its survival might be threatened. In the 90's various conceptual models of CSP evolved[17].

Resource based view holds that the firms which have sufficient financial resources and management ability, choose to go for CSR in order to create firm specific resources which are costly to imitate (Clarkson et al. 2011). Russo and Fouts (1997) argued that the companies engage

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[17] There was a three part conceptual model developed for Corporate Social Performance (CSP) containing four responsibility dimensions (economic, legal, social, ethical), related responsibility issues, and the possible organizational responses (Carroll 1991, 1999). The model was extended to comprise three CSR principles (at institutional, organizational and managerial level), corporate responsiveness and CSR outcomes (Wood 1991).

in CSR because that gives them competitive advantage in terms of creating *internal benefits* related to know-how, corporate culture, committed workforce etc and *external benefits* related to reputation. This is in line with Porter and Kramer (2006) which looked at investment in CSR as long term investment in company's future competitiveness. This is also in alignment with Elkington (1997), who referred to business firms as 'cannibals' who would use the 'fork' of the 'concept of sustainable business' to devour their competitors and progress into a new stage of civilization.

McWilliams. A and D. Siegel (2001) proposed a *supply and demand view* wherein they theorized that there is a level of CSR investment that can maximize profit and satisfy stakeholders demand for CSR at the same time and that the managers can determine this level through a cost-benefit analysis. According to them, CSP-CFP relation at the equilibrium would be neutral.

Institutional Theory views CSR as mechanisms adopted by organizations to achieve legitimacy within the institutional framework of formal regulations or informal norms in a country. Stakeholders' theory talks about stakeholders expectations, which can be said to be contained in the institutions. This lens helps explain why CSR varies so widely across countries.

Relevant Literature:

The literature on determinants of CSP behavior is very scanty. Atriach (2010) examined the characteristics of companies in DJSI world but their focus was on US companies. Ziegler and Schröder (2010) examined European companies in two common sustainability indices namely DJSI World and DJSI stoxx but they had 16 countries in their sample. Different countries have different institutional environment which can influence corporate CSR behavior differently. They pointed out the need to use the probit models for samples outside Europe and for different sustainability indices.

There has been a wide body of literature trying to understand whether there is a causal relationship between corporate sustainability performance (CSP) and corporate financial performance (CFP), particularly in the developed world. The evidence however still remains inconclusive and conflicting (Margolis and Walsh 2001; Margolis and Walsh 2003; Orlitzky et al. 2003; Allouche and Laroche 2005; Wu 2006; Lo and Sheu 2007; Beurden and Go¨ssling 2008; Rashid and Radiah 2012). The most recent and comprehensive meta-analysis by Margolis et al. (2009) covered 251 studies spanning 1972 to 2007, out of which only 28% revealed positive relationship, a small 2% showed negative relationship while a major 59% bestowed a non-significant relationship[18].

Negative: One would expect a negative relation if CSR involves costs more than the benefits derived there from. The believers of this perspective view CSR as an allocation of valuable resources of a company to non-value added activities, which can place a company to competitive disadvantage. This is in line with shareholders view. Studies like Brammer et al. (2006), Boyle et al. (1997), López et al. (2007) found a negative relation between CSP-CFP.

A **neutral** relationship can be expected if the markets consider the corporate social performance to have no effect on financial performance or if the market fails to perceive the social performance properly, or if the benefits of CSR are expected to be just sufficient enough to offset the costs of CSR. This is in line with demand and supply view. Studies like McWilliams. A and D. Siegel (2001), Eveline Van de Velde et al. (2005), Becchetti et al. (2005) found the relationship between CSR and CFP to be insignificant. Ullmann (1985) suggested that the relationship between CSP and CFP is complicated by a number of intervening influences, which are difficult to control.

Positive: Academicians who believe that CSR would lead to competitive advantage, that CSR will translate itself into benefits in the form of greater revenues, lesser risks & lesser costs and that the

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[18] 10% of the sample remained unexamined because they did not report sample size

benefits would be greater than the costs of CSR, would expect a positive relation between CSP and CFP. This gels with the Stakeholders view, which argues in favor of benefits from managing stakeholders interests and Resource based view, which believes the companies with resources will invest in CSR to create competitive advantage. Studies like McGuire (1988), Herremans et al. (1993), Pava and Krausz (1996), Waddock and Graves (1997), Preston and Bannon (1997), Russo and Fouts (1997), Ruf et al. (2001), He et al. (2007) found a positive relation between CSP and CFP.

Causes for the Differences in results: The differences in results across CSP-CFP studies can be attributed to differences in methodology, differences in time period examined, or differences in the country context (Cochran and Wood 1984). It can also be attributed to the wide variation in variables used to measure CSP, CFP and to control the intervening factors.

As far as the measurement of CFP is concerned, there has been objectivity. Margolis et al. (2009) reported 109 studies used accounting based measures, a predominant 156 studies used market based measures, while only 14 which used both. Accounting based measures include measures of profitability (like ROE, ROI, ROS or Profit margin, EPS); measures of growth (like sales growth); and measures of asset utilization (like ROA). Market based measures include PE ratio, Market Price, Market to book value ratio, Stock returns. Accounting measures are historical while market measures are forward-looking.

Variables used in the past to capture CSP were mostly subjective and included: content analysis of CSP disclosures (Wolfe 1991; Rashid and Radiah 2012); publicly available information on social actions like pollution control expenditure, charitable contributions etc; social concerns like product recalls (Davidson and Worrell 1990), toxic emissions, FDA disciplinary actions etc; reputation ratings like Moskowitz's reputation rating (Cochran and Wood 1984), Fortune Magazine ratings

(McGuire 1988), KLD Ratings (Waddock and Graves 1997), (Preston and Bannon 1997); and other survey based indices (Aupperle 1991). There have been questions regarding the reliability of CSP measures because these were either single dimensional (like toxic emissions), subjective or were based on surveys which are likely to be impaired by a significant non-response rate[19] and/or unaudited voluntary CSR reports[20] by the companies.

Another stream of literature used event study as a methodology and found market to react positively towards positive CSR event and vice versa (Klassen and McLaughlin 1996; Frooman 1997). Other event studies conducted to check for the impact of inclusion (deletion) from a sustainability index found that investors do pay importance to sustainability (Doh et al. 2010; Cheung 2011; Consolandi et al. 2009). The event study method has been criticized for its short-term focus on stock price reactions. (Lourenço et al. 2012) used Ohlson's model of valuation to show that CSP can explain stock prices over and above the traditional accounting measures of profit and book value.

IV. Developing the Hypothesis

Business Case for Sustainability Reporting: The primary motivation behind sustainability performance and reporting is the belief that it helps companies gain competitive advantage and create long-term value. Sustainability reporting helps the company build a positive image with its stakeholders, thereby helping it manage the social expectations and reduce legitimacy risks.

Companies which measure and manage contribution of ESG factors in creating and preserving value are likely to differentiate themselves by exploring *innovations* meaningfully (RIO+20 policy) and thereby outperforming their peers in the long run. Innovations can bring in operational

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[19] Companies which are poor in sustainability performance are likely to be more non-responsive
[20] Researchers analyzing 4000 CSR reports published all over the world over a period of past 10 years found 'unsubstantiated claims, gaps in data and inaccurate figures' (http://www.leeds.ac.uk/news/article/2696/doing_good__or_just_talking_about_it).

efficiencies. When a company shows interest in the well being, welfare (health, education, training, safe working environment) and fair treatment of its *employees* (fair rewards and recognition for performance), it takes their morale and loyalty to higher levels[21] thereby reducing absenteeism, strikes and employee turnover. These not only increases productivity, saves on costs of hiring and training new employees (Vitaliano, 2010) but also attracts top talent (Greening and Turban 2000). When the company cares about the *customers* by providing safe products/services which satisfies their demand and when it behaves responsibly in its marketing, it earns customer loyalty and trust (Pivato et al. 2008). This helps the company gain greater share of the existing markets as well as access to newer markets thereby providing boost to its revenues. Bottom-line of the company can get a direct boost when the customers are willing to pay premium for sustainable products.

It adds to the reputation and brand value[22] of the company when the same pays attention to the efficient use & conservation of the natural resources (materials, energy, water etc), elimination or recycling of waste, minimization of pollution (emissions and effluents) through clean technology, preservation of bio-diversity. Its local community is likely to become more collaborative when it contributes to its inclusive growth either through getting suppliers & employees from locality or through charitable donations for development projects (like setting up hospitals, schools, toilets, livelihood development initiatives etc). NGOs, government and regulators look at the company positively and interfere least in its operations when it is perceived to be ethical and transparent in its practice, when it promotes human rights, has good governance, and minimizes negative externalities to the environment. Efficiency in use of natural resources; lower pollution costs,

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[21] The quality workforce so created and retained can also improve product quality and innovation.
[22] BP's market value dropped by 48% from $184 bn to $96.5bn in two months following Gulf of Mexico oil spill.

lower environment related penalties (Chen and Metcalf 1980) and lower government/NGO intervention can further lead to cost savings for the company.

With CSP, the company tends to have garnered credibility in the eyes of investors and other fund providers like banks, which in turn might help a company reduce its cost of capital (Ng and Rezaee 2012).

Indian companies seem to have started realizing the business case of sustainability. The major drivers which seem to make them embrace sustainability reporting are 'strengthening brand & reputation' and 'ethical considerations' rather than 'cost savings' or 'innovation and employee motivation'(KPMG 2011). The business case of corporate sustainability and the various channels of value creation discussed above suggest that superior sustainability performance would lead to superior financial performance either through increase in revenues or through decrease in costs or optimal risk management. So, hypothesis is: Corporate Social Responsibility affects corporate financial performance positively.

V. Data, Methodology and Variable Definition:

Sample Selection: Our study is contextualized in India. This assures homogeneity of institutional, legal and cultural factors. The sample for the study uses top 200 National Stock Exchange (NSE)[23] companies as on 31st March 2012 by market capitalization. The reason for the choice of companies is twofold. Firstly, the listed companies experience greater pressure to perform better on ESG counts. Secondly, SEBI has mandated BR reports for top 100 listed companies from 31st December 2012. Indian companies seem to have accepted the possibility of sustainability reporting becoming mandatory for all listed companies in near future (GIZ India et al. 2012). So, the study

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[23] As of 2012, NSE is the largest stock exchange in India by turnover and 11th largest stock exchange in the world by market capitalization

was not limited to the top 100 companies. Limiting the study to top 100 would also mean losing out on many companies which are in the sustainability index but are not among the top 100.

Corporate Social Responsibility Variable (CSP) Due to the reliability issues and lack of standardization related to the contents of the CSR reports, the recent studies have not started preferring the use of sustainability indices for identifying companies which are leaders in sustainability performance (Artiach et al. 2010; López et al. 2007; Ziegler and Schröder 2010). Following these the study uses 'S&P ESG India index' to measure CSP. The index was launched in January 2008. So the sample period is a four year time period spanning from 2009 to 2012. The sample was classified into two groups. The first group comprised of companies which appeared in S&P ESG India index[24] in all the four years. The second group comprised of companies which never appeared in the index in any of the four years. The companies which belonged to the first group would be superior sustainability performers when compared to companies in the second group. So, the companies in the first group would be called CSP leaders while those in the second group would be called non-CSP firms. Superior sustainability performance is captured through a dummy variable, "CSP dummy" or "D_{it}" which takes the value 1 for CSP leaders and 0 for non-CSP firms.

The top 50 ESG companies are selected for the index from top 500 NSE companies based on a combination of quantitative and qualitative scores (along with a threshold of liquidity[25]). Since the selection in the index is based on best-in-class method from every industry, the dummy variable used in the study can be expected to serve as a better and objective proxy for superior CS Performance.

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[24] It was developed by Standard and Poor's CRISIL and KLD Research & Analytics and its development was sponsored by International Finance Corporation (IFC). The index is maintained by India Index Service Ltd (IISL), a JV between NSE and CRISIL. The index is rebalanced once in a year on the first business day of January when the new ESG scores are calculated
[25] A minimum trade of Rs 20 billion in the last 12 months

Sample Characteristics: There are 61 unique firms in the sample which comprised the index during 2009 to 2012. 22 of these were CSP leaders, 39 made occasional appearance on the sustainability index while 139 were non-CSP firms. So, there would be 88 firm-year observations for CSP-leaders and 556 firm-year observations for non-CSP firms. Table 1 provides the industry-wise decomposition of the sample. The GICS sector, Financials comprise the dominating 21.74 percentage of the sample. The materials and financial sector dominate the CSP-leader firm-years.

Table 1: Industry Wise composition of the CSP and Non-CSP firm years

Industry	CSP		Non-CSP		All firm years	
GICS Sector	Freq.	Percent	Freq.	Percent	Freq.	Percent
Consumer Discretionary	8	9.1	56	10.1	64	9.94
Consumer Staples	8	9.1	48	8.6	56	8.7
Energy	8	9.1	32	5.8	40	6.21
Financials	16	18.2	124	22.3	140	21.74
Health Care	4	4.6	64	11.5	68	10.56
Industrials	4	4.6	80	14.4	84	13.04
Information Technology	12	13.6	16	2.9	28	4.35
Materials	16	18.2	72	13	88	13.66
Telecommunication Services	4	4.6	12	2.2	16	2.48
Utilities	8	9.1	52	9.4	60	9.32
Total	**88**	**100**	**556**	**100**	**644**	**100**

Research Methodology: The determinants of superior corporate sustainability performance have been estimated using a standard random effects[26] probit specification of the following form:

$$\Pr(D_{it} = 1|X_{it}) = \Phi(X'_{it}\beta) \tag{1}$$

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[26] The fixed effect probit model is difficult to implement computationally because it requires that all firm specific fixed effects must be estimated as part of the estimation procedure. Since the estimates of fixed effects are inconsistent for small t (number of years), the fixed effect probit model gives inconsistent estimates for beta coefficients as well. So, Maddala argued in favour of random effect model (Maddala, 1987).

Where Pr denotes probability, D_{it} is the CSP dummy which takes the value 1 for CSP leaders and 0 for non-CSP firms, X_{it} is a vector of regressors that are assumed to influence D_{it} and Φ is the cumulative distribution function of a standard normal distribution.

To estimate the effect of CSP on CFP, a panel regression model of the following form has been used:

$$Y_{it} = \gamma_0 + \gamma'X_{it} + \delta D_{it} + \eta_i + \varepsilon_{it} \qquad (2)$$

Where Y_{it} measures Corporate Financial Performance (CFP) for company i at time t, X_{it} is a vector of exogenous observable company characteristics, η_i is the unobserved time invariant company specific heterogeneity that affects the dependant variable and ε_{it} is the idiosyncratic error or unobserved factors that change over time and affect Y_{it}.

CFP is captured using two alternative types of measures. The first type is accounting-based measure namely Return on Equity (ROE) and Return on Asset (ROA). Data on ROA and ROE is obtained from Prowess database. ROA is Net Profit divided by Average of total assets as at the beginning and end of the year and ROE is PAT as percentage of average net worth.

Multiple measures of financial performance are often preferred over a single measure (Griffin and Mahon 1997). Accounting measures are considered to be inadequate because it captures past and immediate short run performance. Accounting measures can be biased particularly when the sample covers multiple industries (Davidson and Worrell 1990) because of the differences in use of accounting procedures and choices. Another problem with using only the accounting based measures is that they capture the immediate short run performance (López, Garcia et al. 2007). Market value is believed to capture the long run performance because it reflects the consensus of the market about company's past financial performance and future earnings prospects. It is less

likely to be influenced by differences in accounting procedures. So the second type of financial performance measure is used which is market-based namely Tobins Q. Tobins Q is defined as the ratio of market value of assets to the replacement value. Tobin Q is calculated using the following formula: $Tobins Q = \dfrac{TotalAssets + MarketCapitalization - Net Worth}{TotalAssets}$. However, market based measures tend to be noisy. The use of accounting as well as market based measures of CFP is expected to make the study holistic.

The market based measure of financial performance is further explored by making use of empirical version of the Ohlson (1995)'s Valuation Model, very similar to those used by Berthelot, Coulmont et al. (2012). The model links accounting data with market data in the following manner:

$$MV_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 Earnings_{it} + \alpha_3 Loss_{it} \times Earnings_{it} + \alpha_4 D_{it} + \alpha_5 X_{it} + \varepsilon_{it}$$

Where suffix it denotes company i at time t, MV_{it} is the natural log of Market Value per share (Market Value per share = Market capitalization/ Number of shares outstanding), BV_{it} is the natural Log of Book Value of Equity per share, $Earnings_{it}$ measures Earnings per share, $Loss_{it}$ is a Dummy variable, which takes the value 1 if profit is negative in year t for firm i and 0 otherwise, D_{it} is the CSP dummy and X_{it} is a vector of control variables which includes leverage, liquidity, age of the company and business group affiliation. ε_{it} is the idiosyncratic error term.

Book value and the Earnings variable are expected to have positive coefficients since higher these values, higher would be the market value of a firm. The sign on the variable interacting loss with earnings was expected to be negative. The coefficients on liquidity and group dummies were expected to be positive while those on leverage and age were expected to be negative. The most important coefficient of interest is that of CSP dummy or D_{it}. It is hypothesized that superior CSP

reflected in the company being consistently in the sustainability index would have a positive effect on the market value of the company.

***Endogeneity*:** The estimated coefficients in the CSP-CFP linkage discussed above are going to be biased if the CSP dummy is endogenous (Garcia-Castro, Arino et al. 2009; Artiach, Lee et al. 2010). Such endogeneity might arise due to unobserved factors like managerial ability (Waddock and Graves 1997; Cochran and Wood 1984) that influence both the CSP and the CFP causing the CSP dummy to be correlated with the error term. To correct for the potential endogeneity, a two-step treatment effects model was used as outlined in Maddala (1987). In the first step, a 'selection model' is estimated using probit (as discussed earlier) that determines the likelihood of a firm engaging in CSP. The residuals from the probit model capture all unobserved determinants of superior CSP performance and are used to construct a hazard lambda variable. In the second-step, the hazard lambda is included as an additional regressor in the CFP-CSP linkage equation. The two-step treatment effects estimation is valid and endogeneity is an issue only if the estimated coefficient of hazard lambda in the second-step is significant. The treatment effects models have been estimated using the *treatreg* command in STATA.

Independent and Control Variables

The choice of independent/control variables, X_{it} for the econometric models is guided by the relevant literature. Table 2 provides a list of these variables and their definitions followed by a discussion justifying their inclusion in econometric specifications. All the firm specific market and accounting data was obtained from CMIE Database namely Prowess.

Table 2: Definition of Independent/Control Variables

Variable	Mnemonics	Variable Description
Size	ln_ta	Natural logarithm of Total Assets[27]
Financial Risks	leverage	Total Assets / Net Worth
Profits	eps	Earnings of the last four trailing quarters divided by the latest number of shares outstanding
Liquidity	cfo_ta	Net cash flow from operating activities/ Total Assets[28]
Age of company	ln_age	Natural Log of (Relevant year minus the year of incorporation)
Dividend Payments	dps	Dividends[29]/ Number of shares outstanding at the end of the year
R& D intensity	rnd_ta	R&D expenses/Total assets (%)
Advertisement intensity	adv_exp_ta	Advertising expenses/Total assets (%)
Global customers	exports_sales_perc	Export / Sales (%)
Growth of the company	growth_ta	Growth of Total assets over last year (%)
Operating risks	dol	Net fixed assets net of revaluation/ Total Assets (%)
Margin	profit_margin	Net profit of the company after tax and after adjustments for prior period and extra-ordinary transactions/Revenues (%)
Business Group Dummies	own_gp_foreign	Dummy=1 if Foreign business group affiliation, 0 otherwise
	own_gp_indian	Dummy=1 if Indian business group affiliation, 0 otherwise
Industry Dummies	gic_(name of the industry)	10 dummies, one each for 10 GICS sectors
Year Dummies	year	Four dummies, one for each of the years 2009, 2010, 2011, 2012

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[27] Size has been captured in the literature through total assets, total sales or number of employees. Total sales are not used because a significant part of our sample consists of financial institutions. In the current era of mechanization, the number of employees might not be able to capture the size of a company correctly. So, natural log of total assets was preferred as a measure of firm size.

[28] The measures like quick ratio or current ratio have not been used because they are static measures. Since cfo relates to a period, it is a dynamic and hence more meaningful measure to capture ability of the company to meet short term cash needs.

[29] Dividends were calculated by multiplying PAT and Equity dividend as % of PAT

Determinants of CSP: Companies which are large in **size** enjoy economies of scale in their operations and therefore are more capable of bearing CSR related fixed costs. Larger firms would also have a large and diverse group of stakeholders (McWilliams. A and D. Siegel 2001), which can make them visible and vulnerable to potential negative reactions, if they fail to assure their social legitimacy. So, due to the affordability and pressures of visibility a larger company is more likely to be in the sustainability index.

Leverage captures the financial risk a company faces and the claims the powerful stakeholder namely, debt holders have on the company's assets. A higher leverage would mean greater financial risks, more emphasis on meeting debt-holders claims and lesser flexibility in using the resources to for CSR. So, it is hypothesized that higher the leverage, less is the likelihood of a company being on the sustainability index.

CSR depends a lot on managerial discretion. So, when a company is poor in generating profits, it will be under pressure to cut costs and expenditure on CSR is likely to be cut first. On the other hand when profits are high, it will have more slack resources (Resource based view) which can allocated for CSR. So, the study hypothesizes that lower the EPS of a company, lower is its likelihood to be in the index and vice-versa.

Greater the number of years a company is in business successfully, greater is the social expectations it is likely to generate. So, an older company might feel more responsible morally to give back to the society since it has used its resources for longer period of time. Many of the leading older companies in India are traditional business houses like those owned by the Tata's. They have deep-rooted sense of responsibility towards the society at large. Hence, an older Indian company is more likely to be in the sustainability index.

A company with a higher 'export to sales percentage' can be expected to be more likely to be in the sustainability index because a higher export implies larger extent of CSR conscious global stakeholders.

A higher amount of Research and Development (R&D) expenses reflects the ability of the company's management to innovate and its strategy to invest in intangible assets (Clarkson, Li et al. 2011). The resource based view of the firm believes a firm with superior management ability will be proactive in CSP. Since management ability is not directly observable, R&D expenses can act as a proxy for the same. So, a company with higher R&D is more likely to be in the sustainability index.

Advertisement Expenses captures the ability of the company to create product differentiation, customer loyalty and brand image. Such a company is likely to have higher tendency to invest in CSR. So it can be expected that a higher advertisement expense would be associated with superior CSP and hence higher likelihood of appearing in the sustainability index.

Business Group dummies: Business Groups[30] in India have traditionally shown their sense of responsibility to ESG issues, though it was viewed more as philanthropy rather than a strategic decision. Companies affiliated to foreign groups are likely to meet the CSP needs of the more CSR conscious promoter. So two dummies were used one for Indian business group affiliated and the other for foreign business group affiliated. It is expected that the companies belonging to these two groups will have superior CSP when compared to companies non-business group companies.

Other variables expected to influence likelihood of a company being in the sustainability index are liquidity, dividends, and growth. Higher liquidity (slack resources) and higher dividends (signal of financial strength) are likely to influence CSP positively while growth (availability of investment

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[30] Khanna and Rivkin (2001:47) define a business group as a set of firms which, though legally independent, are bound together by a constellation of formal and informal ties and are accustomed to taking coordinated action.

opportunities) can be expected to influence it negatively. If a company operates in an industry which is environmentally sensitive, (like oil & gas companies or the mining companies, which consume non-renewable resources and generate pollutants) managing stakeholder expectations would be very challenging. So, industry dummies are used to capture industry specific affect on CSP. The business environment and the CSR expectations of the society keep changing. So, year dummies are used to control for year specific dynamicity affecting the estimations.

Control variables for CSP-CFP relation: Most of the variables discussed above are likely to influence CFP. So these are used as control variables for CFP regressions. Larger firms are expected to perform better due to the economies of scale and market power they enjoy. But the impact of size on CSP can be negative if large size means greater bureaucracy and inertia, lesser dynamicity, difficult controls, and more government intervention risks than smaller ones. A company which can generate higher margin per unit of revenue, higher cash from operations, higher dividends, and higher growth can be expected to have better CFP. Higher risks captured through higher leverage can be expected to bring higher CFP. R&D can improve CFP directly through productivity improvement because it is investment in company's technical capital which can lead to product and process innovation (McWilliams. A and D. Siegel 2001). Advertisement expenses can also improve CFP directly because it creates long term value through creating product differentiation, customer loyalty and brand image.

Though business group affiliation fills in for the institutional void and can be expected to bring advantages like access to resources through internal ties but these advantages would disappear as the institutional void decreases. On the other hand, group affiliation firms are typically more diversified and would involve costs of possible cross-subsidization of not so well-performing company in the same group. These companies also face severe governance challenges arising from

the conflicts of interest between the controlling family shareholders and minority shareholders and possibility of tunneling of resources (Singh and Gaur 2009). So, one can expect the business group affiliation to have a negative effect on CFP.

There might be industry specific factors like the level of competition, consumer visibility which might explain variation in firm performance (McWilliams. A and D. Siegel 2001; Roberts 1992). Past empirical research has shown that CSP-CFP studies which fail to take care of industry specific factors yield confounded results (Waddock and Graves 1997; Griffin and Mahon 1997). Year specific factors can also influence CFP. So industry specific dummies as well as year dummies are used in all the CFP estimations.

VI.   EMPRICAL RESULTS AND DISCUSSION

Descriptive statistics and correlations: Table 3 provides descriptive statistics of the variables used in the study for the two sub-samples: 88 firm-years for the CSP leaders and 556 firm-years for the non-CSP firms. Except for growth in total assets and leverage, all other variables had higher mean and/or median for CSP leaders when compared to those of non-CSP firms. The t test for equality of means (untabulated) showed that the mean values for MV, BV, ln_ta, ln_age and exports_sales_perc were statistically different and higher for CSP leaders than non-CSP firms. So, the initial tests suggest that the CSP leaders were larger in size, were older and had larger exports as a percentage of sales than the non-CSP firms. The Book values and the Market Values of CSP leaders were also higher than those of non-CSP firms.

Table 4 shows pair wise correlations among the independent variables. Since the magnitudes of the correlation coefficients were not found to be large at 1%, 5% or 10% levels of significance, multi-collinearity is unlikely be a problem in our estimations.

Table 3: Descriptive Statistics

Variables	Mean	SD	Min	Max	Q2	Mean		Min	Max	Q2
		For CSP-leaders						For non-CSP firms		
roa	10.7	8.7	0.6	36.2	7.9	9	11.6	-120	127.8	7.6
roe	25	20.9	6.1	142.7	19.3	22.1	42.4	-283.5	791.7	20.7
tobins_Q	2.7	2	0.9	9.1	1.9	2.8	2.6	0.7	29.3	2
ln_mv_per_share	6.3	0.9	3.5	8.2	6.4	5.7	1.2	2.9	10.4	5.7
ln_ta	10.4	1.3	7.5	13.1	10.3	8.9	1.7	5	14.1	8.6
leverage	3.8	3.8	1.2	19.4	2	4.5	7.3	-45.9	43.4	2.2
eps	40.2	32.8	-47.5	129.6	37.2	36	78.5	-197.3	1,072.60	18.3
cfo_ta	10.1	9.1	-14.3	35.4	9.2	8.1	11.2	-35.2	49.2	8.1
ln_age	3.6	0.7	2.6	4.7	3.5	3.4	0.8	0	4.8	3.4
dps	11.5	10.6	1	60	9.8	8.5	15.6	0	203.2	3.5
adv_exp_ta	1.8	5.4	0	26.6	0	1.7	4.3	0	34.4	0
rnd_ta	0.5	1.1	0	5.4	0.1	0.4	1.1	0	8.7	0
exports_sales_perc	27.8	36.8	0	166.5	7.3	13	23.8	0	116.6	1.2
growth_ta	18.7	11.7	-5.1	78.3	17.3	23.7	35.6	-52.6	441.4	18.6
ln_bv_per_share	5	1.1	2.2	6.6	5.2	4.6	1.2	-0.5	8.6	4.6
loss_eps_interact	0	0	0	0	0	-0.7	9.7	-197.3	14.7	0
profit_margin	13	6.8	0.4	27	12.6	13.9	34.2	-588.6	92.7	12.4

Table 4: Correlation Coefficients Matrix

	ln_ta	leverage	eps	cfo_ta	ln_age	dps	adv_exp_ta	rnd_ta	exports_sales_perc	growth_ta	ln_bv_per_share	loss_eps_interact
ln_ta	1											
leverage	0.53***	1										
eps	0.06	0.05	1									
cfo_ta	-0.32***	-0.19***	0.09**	1								
ln_age	0.23***	0.33***	0.17***	0.09**	1							
dps	-0.01	0.02	0.51***	0.18***	0.23***	1						
adv_exp_ta	-0.33***	-0.10**	-0.01	0.34***	0.12***	0.10**	1					
rnd_ta	-0.17***	-0.13***	0.02	0.10***	0.08**	0.03	0.01	1				
exports_sales_p	-0.03	-0.18***	0.01	-0.01	-0.10***	0.03	-0.14***	0.29***	1			
growth_ta	-0.02	0.01	-0.05	-0.15***	-0.14***	-0.06	-0.01	-0.05	-0.05	1		
ln_bv_per_share	0.32***	0.09**	0.56***	-0.14***	0.19***	0.46***	-0.23***	0.03	0.05	-0.03	1	
loss_eps_interact	-0.02	-0.01	0.16***	0.15***	-0.05	0.01	0.01	-0.05	-0.07*	-0.48***	-0.04	1
profit_margin	-0.01	-0.02	0.07	0.13***	-0.03	0.07*	-0.04	-0.02	-0.04	-0.09**	-0.06	0.30*

Firm characteristics influencing CSP Behaviour: Table 5 reports the results of five alternative specifications of the panel probit model. All the specification shows that larger a company, lower the leverage, more the R&D and Advertisement intensity of a company, more likely it is expected to be in the sustainability index. Profits (EPS), Liquidity (cfo_ta), Dividends (dps) and Growth in total assets (growth_ta) didn't influence the likelihood of a company being in the ESG index while Age (ln_age) was found to have positive and significant affect on the likelihood occasionally. Indian and foreign group dummies and many of the industry dummies were found to be significant.

Table 5: Panel Probit Estimations – Determinants of superior CSP

VARIABLES	(1)	(2)	(3)	(4)	(5)
ln_ta	4.393***	4.663***	4.483***	4.848***	5.045***
	(0.585)	(0.572)	(0.509)	(0.542)	(0.688)
leverage	-0.257***	-0.340*	-0.247**	-0.270**	-0.260**
	(0.069)	(0.187)	(0.124)	(0.120)	(0.117)
eps	-0.009	-0.016	-0.019	-0.012	-0.017
	(0.014)	(0.016)	(0.018)	(0.016)	(0.019)
cfo_ta	0.036	0.044	0.069	0.067	0.084
	(0.050)	(0.066)	(0.060)	(0.060)	(0.071)
ln_age	1.014	0.558	1.531**	0.878	1.474**
	(0.652)	(0.692)	(0.757)	(0.799)	(0.746)
dps	0.031	0.044	0.052	0.038	0.076
	(0.049)	(0.052)	(0.053)	(0.053)	(0.058)
adv_exp_ta		0.285**	0.264**	0.282**	0.358**
		(0.138)	(0.124)	(0.124)	(0.163)
rnd_ta		2.018**	1.809***	1.881***	2.493***
		(0.816)	(0.587)	(0.584)	(0.735)
exports_sales_perc			0.058**	0.056	0.066***
			(0.029)	(0.038)	(0.024)
growth_ta				-0.009	-0.012
				(0.023)	(0.025)
bus_grp_indian					6.290***
					(1.355)
bus_grp_foreign					12.697***
					(2.303)
gics_consumer_discretionary	8.896***	7.867**	9.011***	9.922***	6.978***
	(2.130)	(3.358)	(2.620)	(3.019)	(2.684)
gics_consumer_staples	11.377***	3.138	4.318	5.077	-0.059
	(2.292)	(4.672)	(3.404)	(3.442)	(3.555)
gics_energy	2.304	1.149	1.924	0.445	2.516
	(1.722)	(3.017)	(2.368)	(2.910)	(2.765)
gics_helath_care	3.682	-4.185	-2.458	-2.175	-10.609**
	(2.568)	(8.604)	(4.549)	(5.218)	(5.215)
gics_industrials	5.018**	3.579	4.308	4.837	3.185
	(2.529)	(4.663)	(3.571)	(3.343)	(3.019)
gics_information_technology	14.694***	13.318***	10.879***	11.114**	8.347***
	(2.450)	(4.543)	(3.807)	(4.712)	(3.171)
gics_ materials	7.091***	6.659**	7.840***	7.647***	6.496***
	(1.711)	(3.253)	(2.389)	(2.591)	(2.366)
gics_telecommunication	4.232*	2.437	5.378**	4.263	2.723
	(2.180)	(3.493)	(2.583)	(2.975)	(2.423)
gics_utilities	4.068**	2.550	5.700**	5.648**	5.901***
	(1.652)	(3.304)	(2.301)	(2.501)	(2.258)
Constant	4.273***	4.275***	4.286***	4.289***	4.284***
	(0.246)	(0.249)	(0.255)	(0.245)	(0.281)
Observations	613	613	613	613	613
Wald Chi2	147.25	136.21	127.02	154.01	143.18
Prob>Chi2	0.00	0.00	0.00	0.00	0.00
LR test of rho=0:Chi2	255.37	241.36	229.53	231.54	208.13

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6: CSP-CFP Relationship

VARIABLES	Return on Assets (roa)		Return on Equity (roe)		Tobins_Q	
	(1)	(2)	(1)	(2)	(1)	(2)
	panel	Treatment Twostep	panel	Treatment Twostep	panel	Treatment Twostep
ln_ta	-1.288***	-1.380***	-3.268	-5.139***	-0.591***	-0.730***
	(0.416)	(0.419)	(2.858)	(1.809)	(0.142)	(0.099)
leverage	0.055	0.006	1.890	2.060***	0.005	0.021
	(0.117)	(0.075)	(1.480)	(0.322)	(0.005)	(0.018)
profit_margin	0.033	0.052***	0.099*	0.102**	0.001	0.004
	(0.028)	(0.011)	(0.060)	(0.047)	(0.001)	(0.003)
dps	0.098***	0.115***	0.192***	0.170	0.005	0.008
	(0.022)	(0.025)	(0.059)	(0.107)	(0.006)	(0.006)
cfo_ta	0.243***	0.292***	0.937***	0.872***	0.015	0.041***
	(0.047)	(0.042)	(0.305)	(0.181)	(0.012)	(0.010)
growth_ta	0.124**	0.127***	0.216**	0.219***	0.002	0.002
	(0.062)	(0.011)	(0.110)	(0.047)	(0.002)	(0.003)
adv_exp_ta	0.400***	0.368***	1.805***	1.663***	0.111***	0.096***
	(0.140)	(0.125)	(0.608)	(0.539)	(0.034)	(0.030)
rnd_ta	0.422	0.394	-0.804	-1.328	0.040	-0.130
	(0.512)	(0.388)	(2.420)	(1.675)	(0.117)	(0.092)
bus_grp_indian	-3.799***	-3.847***	-0.779	-2.668	-1.082**	-1.068***
	(0.976)	(0.874)	(6.104)	(3.772)	(0.455)	(0.207)
bus_grp_foreign	-3.280*	-3.729**	-6.960	-10.841	-1.395**	-1.696***
	(1.974)	(1.684)	(5.431)	(7.270)	(0.636)	(0.399)
CSP_dummy	3.881**	6.345**	9.622**	25.721**	0.886***	2.807***
	(1.783)	(2.499)	(4.053)	(10.779)	(0.326)	(0.583)
Constant	11.200**	11.980***	14.705	31.348*	7.217***	8.013***
	(4.394)	(4.068)	(9.628)	(17.562)	(1.697)	(0.959)
lambda		-2.035		-10.954*		-1.411***
		(1.516)		(6.522)		(0.342)
Observations	613	613	613	613	613	613
Wald Chi2	674.48	614.59	236.17	281.34	378.60	562.30
Prob>Chi2	0.00	0.00	0.00	0.00	0.00	0.00
R-sq(overall)	0.45		0.23		0.43	

Influence of CSP on CFP:

Table 6 reports three sets of results- one each for three dependant variables namely ROA, ROE and Tobins Q. For every set the first column reports the results of panel regression while the second column reports the results of the second stage of the two-stage treatment effect models, the regression equation. The results of the first stage selection equation are more or less in line with the panel probit model estimation and hence are not tabulated.

For ROA, the hazard lambda, the self selection parameter is found to be insignificant. So, one can conclude that the selection problem doesn't exist and can rely on the results of panel regression. It shows that size and business group dummies had a negative impact on ROA while dividends,

liquidity, growth and advertisement expenses had a positive impact. CSP dummy is found to be significant implying that superior CSP leads to superior CFP.

When the dependant variable was ROE and Tobins Q the self selection parameter hazard lambda, was found to be significant. So for both ROE and Tobins Q, treatment effect results would be more meaningful. The results of the treatment effect model shows that only size has a negative impact on ROE while leverage, profits margin along with liquidity, growth and advertisement expenses had a positive impact on the same. The treatment effect results further shows size and business group dummies to have a negative impact on Tobins Q while liquidity and advertisement expenses to have a positive impact on the same. CSP dummy has a positive and significant coefficient for both the dependant variables, ROE and Tobins Q. This suggests that the treatment of being in the ESG S&P sustainability index has a positive impact on CFP after controlling for selection bias.

Table 7 reports the results of empirical version of Ohlson model used for exploring the market impact of superior CSP. Like in ROA model, the insignificant lambda found for this model suggests that selection bias is not a problem. Therefore, the panel regressions can be used for interpretations. Book Value, EPS, and liquidity are found to have a positive effect as expected while Indian business group dummy is found to have a negative effect on the market value. CSP dummy again has a positive and significant coefficient on Market value. So Table 7 confirms that market values companies which have superior CSP.

Table 7 Ohlson's Model: Dependant Variable – Market Value

VARIABLES	(1) panel	(3) Treatment Twostep
ln_bv_per_share	0.750***	0.699***
	(0.050)	(0.030)
eps	0.001***	0.002***
	(0.000)	(0.000)
loss_eps_interact	0.002	0.000
	(0.002)	(0.003)
leverage	0.017	-0.023***
	(0.015)	(0.006)
cfo_ta	0.010***	0.021***
	(0.003)	(0.003)
ln_age	-0.122	-0.055
	(0.075)	(0.042)
bus_grp_indian	-0.219**	-0.216***
	(0.109)	(0.063)
bus_grp_foreign	0.024	0.032
	(0.214)	(0.118)
csp_dummy	0.297**	0.284**
	(0.136)	(0.129)
Constant	1.655***	2.131***
	(0.354)	(0.221)
lambda		-0.003
		(0.085)
Observations	608	608
Wald Chi2	1012.15	1763.50
Prob>Chi2	0.00	0.00
R-sq(overall)	0.71	

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Discussions

The results from panel probit model shows that a company which is large in size, has lower leverage, higher research & development expenses, higher advertisement expenses, and is business group affiliated, is more likely to be CSP leader and find its place in S&P ESG India Index.

Artiach et al. (2010)[31] found the companies leading in CSP performance were larger, had higher levels of growth and higher ROE. But they did not find the CSP leaders to have lower leverage or higher cash flows. Ziegler and Schröder (2010) found positive effect of size, negative effect of financial health captured through 'sales to total assets', and no influence of debt on inclusion of European firms in DJSI world and DJSI stoxx. Lourenço et al. (2012) found that markets penalize

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[31] They also conducted ordered probit and found similar results

large and profitable firms if they have lower levels of CSP, thereby reflecting that the larger and profitable firms have higher pressures to go for sustainability performance. Our results from panel probit on size concurs with the findings of Artiach et al. (2010), Ziegler and Schröder (2010) and Lourenço et al. (2012). So it can be concluded that either the visibility or affordability motivated larger companies to have superior CSP.

The negative coefficient on leverage unlike Artiach et al. (2010), Ziegler and Schröder (2010) suggest that for Indian firms, a higher financial risks reduces the flexibility to go for CSP. Superior managerial ability captured through higher R&D and brand image consciousness captured through higher advertisement expenses is likely to make a company more likely to be superior in CSP. This is line with KPMG (2011)'s finding that one of the primary drivers for embracing sustainability in India is 'strengthening brand and reputation' Another notable result for Indian companies is that companies which are group affiliated are more likely to have superior CSP. Unlike in the literature our study in the Indian context did not find profits[32] or growth to have any significant effect on the likelihood of a company being in the sustainability index.

The coefficients for GICS sectors namely Consumer discretionary, Information Technology and Materials were positive and significant in all the five specifications of panel probit. Except for energy, the coefficients on all other sectors were significant in at least one of the specifications. GICS-Materials sector includes companies in metals like steel, zinc, copper, and aluminum, companies dealing in minerals, cement (other construction materials) and chemicals. Consumer discretionary sector includes companies in automobiles, media, retails, consumer durables etc. This is in line with survey results of GIZ India et al. (2012), KPMG (2011) who report companies in metals, mining, construction materials and utilities[33] sector to be CSP leaders. These results

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[32] Variables like ROA, ROE and Tobins_Q are used instead of EPS in the panel probit estimations but the coefficients continued to be insignificant.
[33] was significant in four out of five specifications

confirm that companies which operated in environmentally sensitive sectors had superior CSP performance, probably to meet the challenge of higher stakeholder expectations from them. Information technology might be less polluting but yet they were more likely to adopt superior sustainability measures and reporting probably owing to their outsourcing business model, global operations, and sustainability conscious global customers and investors.

As far as CSP-CFP regressions are concerned, size was found to have negative coefficient in all the estimations. This is perhaps due to bureaucracy, declining controls or diminishing economies of scale in very large companies since our sample consists of the largest companies in the country. This is unlike Wu (2006) whose meta-analysis showed that the size had no significant impact on CFP or CSP. For the rest of the control variables, the results are more or less as expected. The most important and striking result is that the estimated coefficient on CSP dummy is positive and significant in all the three estimations for all the three dependant variables for CFP as well as in the estimation for Ohlson model. So, it can be safely concluded that superiority in CSP leads to superiority in CFP irrespective of whether CFP is measured using accounting based or market based variables and that market rewards sustainability. Our results are consistent with Eccles et al. (2011), Rashid and Radiah (2012), Lo and Sheu (2007) and Dowell (2000) who found different measures of superior CSP to be positively associated with different measures of CFP.

 Following the suggestion of Margolis et al. (2009), the study not only controlled for industry, firm size, risk, R&D, advertisement expenditure and other potentially confounding factors but also used two-stage estimation to take care of any potential endogenity problem. But even then unlike McWilliams. A and D. Siegel (2001), the positive association between CSP and CFP did not vanish.

VII. Conclusion:

This study advances the field of CSR research in several ways. It is the first study which attempted to find the factors driving superior CSP in one of the largest emerging economies of the world and to check the impact of such superior sustainability performance. Use of the S&P ESG Index to operationalize superior CSP takes care of the challenge involved in measuring CSP objectively. Our study spanning 2009 to 2012 is very timely because the index was launched in 2008 in India and 2012 saw the Rio+20 summit and SEBI regulations mandating sustainability reporting for top 100 NSE/BSE companies in India.

The study employs greater methodological rigor than those used by similar past studies by making use of two-stage treatment procedure. The CFP is measured not only in terms of accounting measures which are perceived as short term performance report but also in terms of market measures which are viewed as a measure of long term firm performance. Use of multiple measures of financial performance makes the study holistic. The market based measure of CFP was explored further by using Ohlson (1995) model to check whether Indian markets value CSP. The study also takes care of time-variant industry specific effects as well as year specific effects.

The study finds that companies which are large in size, have less leverage, are business group affiliated, have higher R&D and advertisement expenses, and are operating in environmentally sensitive industries are likely to be superior in sustainability. Such superior sustainability performance leads to superior financial performance, captured through multiple measures of ROA, ROE and Tobins Q ratio. Ohlson's model further confirms that market rewards companies for being in the sustainability index. The results of the paper have implications not only for academicians and business leaders but also for policymaking authorities and various bodies around the world which are trying to create awareness about sustainability. The business leaders who need

to decide on their investments or those who govern the corporate allocation of resources would appreciate the benefit of incorporating sustainability into corporate strategy and reporting.

Future Research Directions: Future research can investigate the impact of the sub-components of sustainability performance namely the environment, social and governance performance separately. There is a need to understand the channels in the value chain through which CSP influences CFP. In Indian context, it would also be interesting to examine the mandatory Business Responsibility reports that would be submitted by the top 100 companies and their market impact.

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