

## Implications of Environmental, Social and Governance Dimensions of CSR Practice on Firms' Profitability, Value and Cash flows in the UK

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**Abstract:** This paper examines the implications of Environmental, Social and Governance Dimensions of corporate social responsibility (CSR) practices on firm profitability (Returns on Assets - ROA), value (Share Price - P) and Cash Flows (Free Cash Flows - FCF) for non-financial FTSE 100 firms listed on London Stock Exchange from 2007 to 2016. The study find that on average, increased total CSR (ESG) practice is positively associated with firm performance. More specifically, Environmental and governmental practices positively and significantly affect ROA, share prices and free cash flows respectively. Social practices positively and significantly affect share prices, but negatively and insignificantly affect ROA and FCF. It is concluded that overall, high and quality CSR practices improve corporate financial performance in the UK.

**Keywords:** ESG, CSR, Profitability, Value, Cash flows

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### I. Introduction

Having high investment in environmental, social and governance (ESG) activities (which collectively define 'CSR'), and producing objective disclosures about firm performance in these activities involve exclusive, real and opportunity costs (see Buhr, 2002; Brammer & Pavelin, 2006, 2008; Armitage & Marston, 2008). Yet, these activities by big firms in the UK have increased remarkably over the years reflecting the growing interest of a variety of corporate stakeholders (such as investors, staff, customers, supervisors, government, social activist groups) in Corporate Social Responsibility (CSR) information (see Brammer & Pavelin, 2006, 2008; Clarkson, Li, Richardson & Vasvari, 2008, 2011; Deegan, 2004; den Hond & de Bakker, 2007).

There is a unanimous agreement in prior studies that bigger firms have higher CSR (environmental and social) initiatives/investments, which translates to higher disclosures (See Brammer & Pavelin, 2006, 2008; Guidry & Patten, 2012; Qui, Shaukat and Tharyan, 2015). However, within these scholarships, the relation between firm profitability and CSR disclosures have been vague, the impact of CSR disclosure and the granger causality effect of different CSR activities (i.e. environmental, social, and/or governance) on firm value still remains an open empirical discourse, and the influence of environmental, social and governance practices (disclosures) on firms' cash flows not widely empirically explored (see Gray et al. 2001; Brammer & Pavelin 2006, 2008; Clarkson et al., 2011; Guidry & Patten, 2012).

There is conflicting evidence on the impact of CSR practices/disclosure on a firm's financial performance (see Margolis and Walsh, 2003; Orlitzky et al., 2003; Renneboog et al., 2008; van Beurden and Gossling, 2008; Margolis et al., 2009). Some researchers, relying on arguments provided in socio-political and legitimacy theories have unearthed empirical support for the conception that CSR disclosures are driven predominantly by public pressure and are intended to gain operation authorization from varied stakeholders and the wider society (Patten, 1991, 2002; Hackston & Milne, 1996; Walden & Schwartz, 1997). Others, relying on arguments of resource based view (RBV) (Hart, 1995; Russo & Fouts, 1997) and voluntary disclosure theory (VDT), (Verrecchia, 1983, 2001) have argued that since diversity of resources in an organization drives competitive differences within a given industry; firms cultivating resources to support the environment will have greater likelihood to gain competitive advantages and earn higher profits.

There is also a fragmentary discussion within the CSR (environmental and social) disclosure studies as to whether or not such disclosures have value-relevance. Some academics associate disclosure with business legitimation (Gray et al., 1995; Cho & Patten, 2007); and others have reasoned that these disclosures are value-relevant which confer on firms competitive advantages such as improved efficiency of resource, stronger positive

reputation, and strengthened relationship with significant stakeholders such as employees (Gray et al., 1995; Hart 1995; Russo & Fouts, 1997; Al-Tuwaijri et al., 2004; Clarkson et al., 2011). This has resulted in the inconsistent results shown in existing scholarships (see Shane & Spicer, 1983; Steven, 1984; Freedman & Patten, 2004; Lorraine, Collison, & Power, 2004; Clarkson et al., 2011).

Finally, vast prior work have measured CRS using both environmental and social dimensions (Al-Tuwaijri, Christensen, and Hughes 2004; Sharfman and Fernando 2008; Holder-Webb et al. 2009; Cho et al. 2012; Matsumura, Prakash, and Vera-Muñoz 2014), while the governance dimension/disclosure has been sparsely considered in the CSR context (Gutsche, Schulz and Gratwohl, 2017).

Since the empirical results of the impact of CSR disclosure/performance on financial performance are at best mixed, an investigation of such impact is still open to empirical dialogue, especially among large firms in the UK. This premise ushers in this study which considers all the three dimensions of CSR- environmental, social, and governance (ESG) to show the effects on firm performance (profitability, value and cash flows) of each dimension, thus, providing a holistic analysis of firm CSR activities effects on financial performance.

## **II. Literature Review And Hypotheses Development**

### **2.1 Environmental, social and governance dimensions of CSR practices and firm operating profitability**

There is a universal notion within the CSR literature that larger, more publicly visible firms and those from more polluting industries are likely to have higher environmental practices and consequently higher disclosures (Gray et al. 1995, 2001; Brammer & Pavelin, 2006; 2008). However, legitimacy theorists argue that environmental and social disclosures are compelled by public pressure, intended to gain social legitimacy for a firm's operations that create significant environmental and social impacts (see Gray et al., 1995; Hackston & Milne, 1996; Walden & Schwartz, 1997; Patten, 1991, 2002a, 2002b; Cho & Patten, 2007). Patten (1991, p.25) further argues that “.....social practices and disclosure is a means of addressing the exposure companies face with regard to the social environment. And that ‘the social legitimacy of business is monitored through the public-policy arena rather than the marketplace and, as such, the extent of social disclosure should be more closely related to the public pressure variables than the profitability measures.’

Contrary to the legitimacy perspective, other works have drawn support from the resource based view of the firm and the economics based voluntary disclosure theory to argue the positive link between environmental and social practices (performance/disclosure) and firm profitability. They have explored and found empirical evidence that superior environmental performers who also possess superior economic resources make higher, better quality and more objective environmental and social investments/disclosures which improves firms bottom lines in the long run (see Hart, 1995; Russo & Fouts, 1997; Verrachia, 1983, 2001; Al-Tuwaijri et al. 2004; Clarkson et al., 2008, 2011). While some scholars have found a positive link between superior environmental and social performance, environmental and social disclosures and economic operating profitability, others have found negative or no relationship, with all three dimensions of CSR i.e. environmental, social and governance (ESG) dimensions not explicitly tested in prior studies.

Despite the adversative viewson the effect of CSR disclosures on firm performance, vast literature provide a number of reasons why a positive relation between higher/more objective environmental/social practices and firm profitability is possible. Unbiased environmental and social activities and investments entail significant real costs of production and proprietary costs which firms are willing to incur because of the likelihood of increased bottom line performance (see Buhr, 2002, Brammer & Pavelin, 2008). Murray & Vogel (1997) underscored the existenceof long-run economic benefits to organizations that engage in active CSR investment, via decrease inoperating costs, and operating and investing risk, amongst others.

Regarding corporate governance dimension, some researchers indicated that there is positive relationship between board size and firm performance such as EPS, ROA and ROS (see Chen et al., 2006; Shukeri et al., 2012; Adam and Mehran, 2003; Mak and Kusnadi, 2005; Kiel and Nicholson, 2003). Some researchers found that board independence can provide benefits to companies (Ramdani and Witteloostuijn, 2009; Zubaidah et al., 2009; Rhodes et al., 2000) such as adding diversity of skills and expertise of the directors to board (Abdullah, 2004), alleviating agency problems and curbing managerial self-interest and reducing the management consumption of perquisites via independent directors (Brickley and James, 1987; Rhodes et al., 2000); better auditing systems (Salleh et al., 2005) as well as bridging ownership control disparity which reduces controlling shareholders' firm resource appropriation, reducing efficient firm organization, improving business strategy, and increasing market share (Joh, 2003; . Therefore, companies with more independent directors tend to be more profitable compared to those with fewer independent directors.

In line with previous scholarships, we argue that the environmental, social and governance dimensions of CSR practices will have a positive impact on the profitability of a firm. Thus, we hypothesise:

*H1: Higher environmental, social and governance practices result in higher profitability*

### **Environmental, social and governance dimensions of CSR practices and firm value**

Prior studies have shown that superior environmental and social practices, performance and their disclosure can result in competitive advantage for firms (Armitage & Marston, 2008). As societal and regulatory pressure for monitoring business practices have increased, investors have become keenly interested in both corporate environmental and social practices, conferring on firms with superior and more objective environmental and social practices more favour, long run competitiveness, and profitability. These higher and better CSR performances can lead to higher share valuation for such companies (Qui et al., 2015). Thus, consistent with the VDT theory proposition, it can be argued that firms would make higher and more objective environmental and social investment, in order to benefit from higher valuations (Verrecchia, 1983, 2001).

However, many prior scholarships on the environmental dimension of CSR has been mixed. Freedman & Patten (2004) and Lorraine et. al. (2004) find a negative link between a firm's environmental practice and its valuation. Bird et al. (2007) found a negative relationship between environmental concerns and future stock returns. Lioui & Sharma (2012) concluded a negative link between KLD environmental ratings and Tobin's Q ratio. Marsat & Williams (2013) documented a negative relationship between MSCI ESG rating. On the other hand, Clarkson et al., (2011) finds a positive relation between CSR disclosures and the firm market/economic value. Dowell et al. (2000) identified a better value, respectively a higher Tobin's Q ratio for the companies that adopted a single, stringent global environmental standard. Guenster et al. (2011) established a positive and slightly asymmetric relationship between eco-efficiency scores and market value (where the eco-efficiency score measures the efficiency of increased value creation from using less environmental resources, such as water, air, oil, coal and other limited natural endowments).

The social and governance dimensions have received relatively scant or no attention in the CSR literature. Regarding the social dimension, a notable study by Cormier, Aerts, Ledoux and Magnan (2009) argue that because social and human capital are key drivers of firm value, objective social practices and disclosures will receive higher valuation by investors. Using a sample of 131 large firms, they find a positive link between social practices and disclosures, and firm market value. Literature on the governance dimension show that through diversification, business groups can reduce transaction costs, risk and uncertainty in firm operations, thereby lowering default and bankruptcy risks and significantly improving firm value (Chang and Choi, 1988), bridging control-ownership disparity increases efficient firm resources utilization (Shleifer and Vishny, 1997), high ownership concentration and disclosure quality show high firm valuation (as measured in Tobin's Q and stock market returns) (LLSV, 2002; Mitton, 2002), increase of independent directors on the board can improve the firm's compliance with the disclosure requirements, protect the shareholders' interests, maximize shareholders value and result in above-average stock price returns (Ramdani and Witteloostuijn, 2009; Dennis and Sarin, 1997; Chen and Jaggi, 2000).

Consistent with prior scholarships and findings, we argue that environmental, social and governance practices are value relevant because a strong reputation in the CSR arena, reflected by higher and more objective environmental, social and governance practices and disclosures can help a firm attract and retain quality employees, investors and customers; enhance employee morale and productivity, build good will and trust with its key stakeholders which helps lower transaction costs and distributional conflicts (by promoting diversity, equality, fair trade terms, board independence, business strategy, etc) with key stakeholders, and provide competitive advantages for firms in accessing and utilizing environmental resource. These benefits should have positive bearing on firm's market value (measured by its share price). Based on the preceding arguments, we hypothesise (in alternative form):

*H2: Higher environmental, social and governance practices confer on firm's higher market values*

### **2.3 Environmental, social and governance dimensions of CSR practices and free cash flows**

The benefits of effective CSR (ESG) practices and its subsequent disclosure include resource use efficiency, high employee output and low transaction costs with fundamental stakeholders, which manifest in higher expected cash flows of firms (Qui, et al., 2015). Higher CSR practices can also improve cash flows by mitigating firm-specific risk such as the risk of fines or clean-up costs, risk of labour disruptions and risk of stakeholders' activism and proxy costs. Godfrey, Merrill & Hansen (2009) expanded this argument by providing evidence that good relationships with stakeholders which is interpreted as 'having moral capital' build goodwill which potentially reduces the cash flow shocks such as the likelihood of consumer boycotts and other negative cash flow effects when a negative event such as an environmental accident or a product safety concern occurs. Choi and Wang (2009) further contend that positive CSR practices not only helps a company gain competitive advantages, but sustain these advantages over into the future as it facilitates the development of new capabilities which reduces the possibility of core competences becoming core inflexibilities. This enables firms to move out of disadvantaged circumstances, significantly reducing firm-specific risks.

Moreover, academics have contended that firms that merge their environmental, social and governance

objectives with their financial objectives construct their confidence and benefit from stronger reputation that safeguard them against activist actions, and providenew and additional sales opportunities (Kim & Nofsinger, 2007). Finally, increased environmental, social and governance performance and disclosures may also lower the costs of monitoring the firm, therefore positively impacting the cash flows that shareholder receive (Stulz, 1999).

From the above, it can be predicted that the positive effect of higher environmental, social and governance practices on market value will be evidenced in higher cash flows. Thus, we hypothesize;

*H3: Higher environmental, social and governance practices result in higher free cash flows*

### III. Methodology

#### 3.1 Data/Variables Measurement

This research uses non-financial UK firms data of FTSE 100 firms listed in London Stock Exchange (LSE) for the period between 2007 to 2016 obtained from Bloomberg. The sample in this study consisted of 80 non-financial companies in FTSE 100 that have Environmental, Social and Governance (ESG) scores in the Bloomberg database for the selected period under study. We exclude financial companies as these firms follow a different set of environmental and social regulations like the ‘Equator Principles’ used in Macve and Chen (2010) and Qui et al (2015). For the purpose of accurate analysis, firm-year observations that did not have data of the variables studied were deleted. This reduces our sample to about 714 firm-year observation. The analysis is performed using Eviews 9.5.

**Table 1: ESG dimensions**

ENVIRONMENTAL	SOCIAL	GOVERNANCE
Carbon emissions	Supply chain	Cumulative voting
Climate change effects	Discrimination	Executive compensation
Pollution	Political contributions	Shareholders’ rights
Waste disposal	Diversity	Takeover defence
Renewable energy	Human rights	Staggered boards
Resource depletion	Community relations	Independent directors

Source: Bloomberg Look Beyond, 2017

**Table 2: Variables measurement and definition**

Category	Measure	Definition
CSR practices	ENV	Environmental practices /performance score ranging from 0 to 100 given by Bloomberg
	SOC	Social practices /performance score ranging from 0 to 100 given by Bloomberg
	GOV	Governance practices /performance score ranging from 0 to 100 given by Bloomberg
Profitability	ROA	Return on Assets- the ratio of earnings before interest and taxes to total assets
Firm Value	P	Stock prices- End of June price given by Bloomberg
Cash flows	FCF	Free cash flow- a measure of a company's financial flexibility given as operating cash flow minus capital expenditures
Control variables	SIZE	Firm size-Natural logarithm of total assets
	EPS	Earnings per share- net income divided by number of shares outstanding
	LEV	Leverage- total debt divided by total assets
	CAPEX	Capital expenditure

#### 3.2 Research Design and Models

This study adopts explanatory non-experimental research design to investigate the relationship between CSR practices and firm financial performance. Explanatory research seeks to establish causal relationship between variables (Saunders et al., 2009; Robson 2002). According to Kerlinger and Lee (2000) an explanatory non-experimental research design is appropriate where the researcher is attempting to explain how phenomenon operates, by identifying the underlying ‘non-manipulated’ factors that produce change in it.

**To test Hypothesis 1**, we run two regressions. Equation (1) models the association between profitability (ROA) as the dependent variable and CSR practice measured separately for all three ESG dimensions as independent variables. Equation (2) shows the effect of combined dimension of CSR practice (combined ESG score) on profitability (ROA). In both equations, control vectors are employed to moderate the regression following prior scholarships (see Qui, et al., 2015; Gutsche, et al., 2017).

$$ROA_{it} = \beta_0 + \beta_1 ENV_{it} + \beta_2 SOC_{it} + \beta_3 GOV_{it} + \beta_4 LEV + \beta_5 SIZE + \beta_6 CAPEX + \varepsilon_{it} \dots \dots \dots (1)$$

$$ROA_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 LEV + \beta_3 SIZE + \beta_4 CAPEX + \varepsilon_{it} \dots \dots \dots (2)$$

We expect the coefficients of ENV, SOC, and GOV i.e.  $\beta_1, \beta_2$  and  $\beta_3$  to be positive and statistically different from 0 in regression model 1, and the coefficient of ESG i.e.  $\beta_1$  to be positive and statistically different from 0 in regression model 2 for hypothesis one to be confirmed. Stated differently, the coefficient on the ESG indicators (separate and/or combined) which measure the average incremental firm profitability is expected to have positive t-statistic  $> 1.6$  for H1 to be upheld, otherwise H1 is rejected.

**To test Hypothesis 2,** we run two regressions following the regressions from the first hypothesis, by replacing the dependent variable profitability with price.

$$P_{it} = \beta_0 + \beta_1 ENV_{it} + \beta_2 SOC_{it} + \beta_3 GOV_{it} + \beta_4 LEV + \beta_5 SIZE + \beta_6 CAPEX + \beta_6 EPS + \varepsilon_{it} \dots \quad (3)$$

$$P_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 LEV + \beta_3 SIZE + \beta_4 CAPEX + \beta_6 EPS + \varepsilon_{it} \dots \quad (4)$$

We expect the coefficients of ENV, SOC, and GOV i.e.  $\beta_1, \beta_2$  and  $\beta_3$  to be positive and statistically different from 0 in regression model 1, and the coefficient of ESG i.e.  $\beta_1$  to be positive and statistically different from 0 in regression model 2 for hypothesis two to be confirmed. Stated differently, the coefficient on the ESG indicators (separate and/or combined) which measure the average incremental firm value is expected to have positive t-statistic  $> 1.6$  for H2 to be upheld, otherwise H2 is rejected.

**To test Hypothesis 3,** we run two regressions following the regressions from the first hypothesis, by replacing the dependent variable profitability with free cash flows.

$$FCF_{it} = \beta_0 + \beta_1 ENV_{it} + \beta_2 SOC_{it} + \beta_3 GOV_{it} + \beta_4 LEV + \beta_5 SIZE + \beta_6 CAPEX + \varepsilon_{it} \dots \quad (5)$$

$$FCF_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 LEV_{it} + \beta_3 SIZE + \beta_4 CAPEX + \varepsilon_{it} \dots \quad (6)$$

We expect the coefficients of ENV, SOC, and GOV i.e.  $\beta_1, \beta_2$  and  $\beta_3$  to be positive and statistically different from 0 in regression model 1, and the coefficient of ESG i.e.  $\beta_1$  to be positive and statistically different from 0 in regression model 2 for hypothesis three to be confirmed. Stated differently, the coefficient on the ESG indicators (separate and/or combined) which measure the average incremental free cash flow is expected to have positive t-statistic  $> 1.6$  for H3 to be upheld, otherwise H3 is rejected.

#### IV. Results

This section reports the result of panel regression undertaken to test the hypotheses formulated in this study.

##### 4.1 CSR Dimensions and Firm Profitability

**Table 3: Panel Regression Results of Returns on Assets, individual and combined ESG practices and control vectors.**

PANEL A: Panel Regression of Individual ENV, SOC, and GOV impact on ROA				
$ROA_{it} = \beta_0 + \beta_1 ENV_{it} + \beta_2 SOC_{it} + \beta_3 GOV_{it} + \beta_4 LEV_{it} + \beta_5 SIZE_{it} + \beta_6 CAPEX_{it} + \varepsilon_{it}$				
	Coefficient	Std. Error	t-Statistic	Prob.
C	18.21905	1.313320	13.87251	0.0000
ENV	0.044103***	0.013721	3.214306	0.0014
SOC	-0.002295	0.011228	-0.204402	0.8381
GOV	0.118109***	0.020845	5.666129	0.0000
LEV	0.018985***	0.005541	3.426464	0.0006
SIZE	-2.278255***	0.160095	-14.23062	0.0000
CAPEX	-0.000184***	3.06E-05	-6.022419	0.0000
PANEL B: Panel Regression of Combined ESG impact on ROA				
$ROA_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \beta_4 CAPEX_{it} + \varepsilon_{it}$				
	Coefficient	Std. Error	t-Statistic	Prob.
C	22.20122	1.264752	17.55381	0.0000
ESG	0.137067***	0.009687	14.14950	0.0000
LEV	0.020705***	0.003721	5.564525	0.0000
SIZE	-2.413274***	0.135589	-17.79840	0.0000
CAPEX	-0.000205***	3.07E-05	-6.681313	0.0000

\*\*\* and \*\* denotes significance at 0.01 and 0.05 levels

Panel A of table 2 show that Environmental practices (ENV) positively affects returns on assets (ROA), having a positive coefficient of 0.044. This means that a 1 percent increase in Environmental practices increases firms ROA by 4%. Social practices (SOC) negatively affects ROA, with a negative coefficient of 0.002. Stated differently, a 1 percent increase in Social practices decrease firms ROA by 0.2%. Governance practices have a positive impact on ROA, with a coefficient of 0.118. This means that as corporate governance increases by 1 percent, ROA simultaneously increases by 11.8 percent. The result of the control vectors reveal that while leverage has a positive and significant impact on return on assets (with a coefficient of 0.0189, i.e. 1.9%), firm

size and capital expenditure have negative and significant effects on returns on assets (with coefficients 2.278 and 0.0002 respectively). The unreported Adjusted R squared is 0.30, with an F-statistics of 52.24 (0.0000), meaning that the dependent variable (ROA) is well explained by the regression line.

Panel B of table 2 show that combined Environmental, Social and Governance (ESG) practices (ENV) positively affects returns on assets (ROA), having a positive coefficient of 0.1371. This means that a 1 percent increase in ESG practices increases firms ROA by 13.71%. The result of the control vectors reveal that while leverage has a positive and significant impact on return on assets (with a coefficient of 0.021, i.e. 2.1%), firm size and capital expenditure have negative and significant effects on returns on assets (with coefficients 2.413 and 0.00021 respectively).

**Hypothesis I Decision:** Panel A shows that environmental practices and governance practices individually have positive and statistically significant impact on ROA. The significance value of  $p=0.0014$  and  $p=0.000$  respectively were less than 0.05, meaning that higher ENV practices and GOV practices result in higher profitability and differ from zero. However, social practices have negative and insignificant impact on ROA. The insignificance value of  $p=0.8381$  greater than 0.05 means that higher SOC practices result in no change in profitability and does not differ from zero. Panel B shows that the combined or joint ESG practices variable is significantly positive, and statistically different from zero, with a value of  $p=0.000$  less than 0.05. this means that higher ESG or CSR practices result in higher profitability (ROA), which supports our H1. This result is consistent with Richardson and Welker’s findings (2001) and Gutsche, Schulz and Gratwohl (2017).

#### 4.2 CSR Dimensions and Firm Value

**Table 4: Panel Regression Results of Stock price, individual and combined ESG practices and control vectors.**

PANEL A: Panel Regression of Individual ENV, SOC, and GOV impact on Price				
$P_{it} = \beta_0 + \beta_1 ENV_{it} + \beta_2 SOC_{it} + \beta_3 GOV_{it} + \beta_4 LEV_{it} + \beta_5 SIZE_{it} + \beta_6 CAPEX_{it} + \beta_7 EPS_{it} + \epsilon_{it}$				
	Coefficient	Std. Error	t-Statistic	Prob.
C	68.56847	220.5456	0.310904	0.7560
ENV	6.410892***	1.892704	3.387161	0.0007
SOC	4.380582**	1.932979	2.266234	0.0237
GOV	14.56270***	3.420872	4.257015	0.0000
LEV	3.523052	1.984930	1.774899	0.0763
SIZE	-77.27703***	22.00172	-3.512318	0.0005
CAPEX	0.020378***	0.005610	3.632288	0.0003
EPS	557.0420***	27.96287	19.92077	0.0000
PANEL B: Panel Regression of Combined ESG impact on Price				
$P_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \beta_4 CAPEX_{it} + \beta_5 EPS_{it} + \epsilon_{it}$				
	Coefficient	Std. Error	t-Statistic	Prob.
C	476.0628	171.3526	2.778264	0.0056
ESG	19.73690***	2.049913	9.628166	0.0000
LEV	3.507450***	1.827801	1.918945	0.0554
SIZE	-72.58253***	21.92638	-3.310283	0.0010
CAPEX	0.019611***	0.005734	3.420355	0.0007
EPS	564.2827***	27.82708	20.27818	0.0000

\*\*\* and \*\* denotes significance at 0.01 and 0.05 levels

Panel A of table 3 show that Environmental practices (ENV) positively and significantly affects stock price (P), having a positive coefficient of 6.411. This means that a 1 percent increase in Environmental practices increases firms stock price by 6.441 pence. Social practices (SOC) positively and significantly affects stock price (P), with a coefficient of 4.38. Stated differently, a 1 percent increase in Social practices increases firms price by 4.38 pence. Governance practices also has a positive and significant impact on price, with a coefficient of 14.56. This implies that as corporate governance increases by 1 percent, Price simultaneously increases by 14.56 pence. The result of the control vectors reveal that leverage has a positive and insignificant impact on price (with a coefficient of 3.52 and  $p=0.07$  greater than 0.05). Firm size has a negative and significant effect on price (with a coefficient of -77.27 and  $p=0.0005$  less than 0.05). Both capital expenditure and EPS have positive and significant effects on price (with coefficient of 0.020 and  $p=0.0003$  less than 0.05 for capital expenditure; and coefficient of 557.04 and  $p=0.0000$  less than 0.05 for EPS). The unreported Adjusted R squared is 0.46, with an F-statistics of 88.54 (0.0000), meaning that the dependent variable (Price) is well explained by the regression line.

Panel B of table 3 show that combined Environmental, Social and Governance (ESG) practices (ENV) positively affects stock price (P), having a positive coefficient of 19.74. This means that a 1 percent increase in ESG practices increases firms stock prices by 19.74 pence. The result of the control vectors reveal that leverage has a positive and insignificant impact on price (with a coefficient of 3.51 and  $p=0.055$  greater than 0.05). Firm

size has a negative and significant effect on price (with a coefficient of -72.58 and  $p=0.0005$  less than 0.05). Both capital expenditure and EPS have positive and significant effects on price (with coefficient of 0.020 and  $p=0.0007$  less than 0.05 for capital expenditure; and coefficient of 556.28 and  $p=0.0000$  less than 0.05 for EPS). The unreported Adjusted R squared is 0.46, with an F-statistics of 124.53 (0.0000), meaning that the dependent variable (Price) is well explained by the regression line.

**Hypothesis 2 Decision:** Panel A shows that environmental practices, social practices and governance practices individually have positive and statistically significant impact on price. The significance value of  $p=0.0007$ ,  $p=0.023$  and  $p=0.000$  for ENV, SOC and GOV respectively were less than 0.05, meaning that higher ENV practices, SOC practices and GOV practices individually result in higher market value and differ from zero. Panel B shows that the combined or joint ESG practices variable is significantly positive, and statistically different from zero, with a value of  $p=0.000$  less than 0.05. this means that higher ESG or CSR practices result in higher market value (P), which supports our H2. This result is consistent with Gutsche, Schulz and Gratwohl (2017).

### 4.3 CSR Dimensions and Firm Cash Flows

**Table 5: Panel Regression Results of Free Cash Flow, individual and combined ESG practices and control vectors.**

PANEL A: Panel Regression of Individual ENV, SOC, and GOV impact on Free Cash Flow				
$FCF_{it} = \beta_0 + \beta_1 ENV_{it} + \beta_2 SOC_{it} + \beta_3 GOV_{it} + \beta_4 LEV_{it} + \beta_5 SIZE_{it} + \beta_6 CAPEX_{it} + \epsilon_{it}$				
	Coefficient	Std. Error	t-Statistic	Prob.
C	-3791.117	231.0540	-16.40792	0.0000
ENV	5.093272***	1.648806	3.089066	0.0021
SOC	-0.365369	1.577307	-0.231641	0.8169
GOV	15.10324***	2.961973	5.099046	0.0000
LEV	-4.628678**	1.995356	-2.319726	0.0206
SIZE	379.8851***	25.41304	14.94843	0.0000
CAPEX	0.051414	0.031163	1.649861	0.0994
PANEL B: Panel Regression of Combined ESG impact on Free Cash Flow				
$FCF_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \beta_4 CAPEX_{it} + \epsilon_{it}$				
	Coefficient	Std. Error	t-Statistic	Prob.
C	-3460.205	177.9340	-19.44657	0.0000
ESG	10.81285***	1.737834	6.222027	0.0000
LEV	-4.868442**	2.071644	-2.350038	0.0190
SIZE	412.2896***	23.61469	17.45903	0.0000
CAPEX	0.063409**	0.031503	2.012794	0.0445

\*\*\* and \*\* denotes significance at 0.01 and 0.05 levels

Panel A of table 4 show that Environmental practices (ENV) positively and significantly affects free cash flows (FCF), having a coefficient of 5.09. This means that a 1 percent increase in Environmental practices increases firms ROA by £509. Social practices (SOC) negatively affects FCF, with a negative coefficient of 0.365. Stated differently, a 1 percent increase in Social practices decrease firms FCF by £36.5. Governance practices have a positive and significant impact on FCF, with a coefficient of 15.10. This means that as corporate governance increases by 1 percent, FCF simultaneously increases by £1510. The result of the control vectors reveal that leverage has a negative and significant impact on free cash flow (with a coefficient of -4.63 and  $p=0.02$  less than 0.05). Firm size has a positive and significant effects on free cash flow (with a coefficient of 379.89 and  $p=0.00$  less than 0.05). Capex has a positive but insignificant effect on FCF (with a coefficient of 0.05 and  $p=0.099$  greater than 0.05). The unreported Adjusted R squared is 0.43, with an F-statistics of 91.79 (0.0000), meaning that the dependent variable (FCF) is well explained by the regression line.

Panel B of table 2 show that combined Environmental, Social and Governance (ESG) practices (ENV) positively affects free cash flows (FCF), having a positive coefficient of 10.812. This means that a 1 percent increase in ESG practices increases firms FCF by £10.81. The result of the control vectors reveal that leverage has a negative and significant impact on free cash flow (with a coefficient of -4.87 and  $p=0.019$  less than 0.05). Both Firm size and Capex individually have positive and significant effects on free cash flow (with a coefficient of 412.29 and  $p=0.000$  less than 0.05 for firm size; and coefficient of 0.06 and  $p=0.044$  less than 0.05 for capex). The unreported Adjusted R squared is 0.45, with an F-statistics of 144.48 (0.0000), meaning that the dependent variable (FCF) is well explained by the regression line.

**Hypothesis 3 Decision.** Panel A shows that environmental practices and governance practices individually have positive and statistically significant impact on FCF. The significance value of  $p=0.0021$  and  $p=0.000$  or ENV

and GOV respectively were less than 0.05, meaning that higher ENV practices and GOV practices individually result in higher free cash flows and differ from zero. However, social practices have negative and insignificant impact on FCF. The insignificance value of  $p=0.8169$  greater than 0.05 means that higher SOC practices result in no change in free cash flows and does not differ from zero. Panel B shows that the combined or joint ESG practices variable is significantly positive, and statistically different from zero, with a value of  $p=0.000$  less than 0.05. this means that higher ESG or CSR practices result in higher cash flows (FCF), which supports our H3. This result is consistent with Richardson and Welker's findings (2001) and Gutsche, Schulz and Gratwohl (2017).

## V. Conclusion

We analyzed the firm performance effects of CSR practices, measured by the three ESG dimensions (Environmental, Social and Governance), for FTSE 100 non-financial firms for the fiscal years 2007 to 2016. We found that higher CSR practices result in higher profitability, measured by return on assets (ROA), higher market value measured by stock price (P) and higher cash flows, measured by free cash flows (FCF). Specifically, we found that while environmental and governance practices result in higher profits, market value and cash flows, social practices only result in higher market value, but no significant change in profit and cash flows. This result is contrary to the argument of Navarro (1988) who proposed that increased expenditure on corporate social activities destroys improves shareholder value. The results show that higher and increased investment in environmental, social and governance initiatives confer on the expending or practicing firm the benefit of reaping higher performance in terms of profits, market values and cash flows. Our findings are clearly relevant to equity analysts and fund managers.

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