

Esg Score And Stock Price Synchronization In Indian Market

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Abstract

Amongst the many other positive economic consequences of Environmental Social and Governance (ESG) like better financial performance, increased firm value, diminished earnings management etc., lower synchronicity of stock prices draws the special attention of researchers in the recent past. It is mainly due to increasing awareness of the retail and institutional investors on the ESG performance of the companies. The extant literature as evidenced these positive economic consequences of ESG (Gelb and Strawser, 2001, Barnea, Heinkel and Kraus, 2017, Jin, Piggott and Mitchell, 2011, Singh, Sethuraman and Lam, 2017, Eom and Nam, 2017), ESG performance of the firms makes them more resilient to markets risks leading to decrease in beta and increase in alpha values of the stocks. The studies like (Morck, Yeung and Yu, 2000) evidenced that emerging markets experience more stock price synchronicity due to higher correlation among the fundamentals of the companies. Against this backdrop, the present study makes an attempt to test the impact of ESG performance on stock price synchronicity. The study hypothesizes a negative association between ESG performance and stock price synchronicity implying that stocks with comparatively better ESG score are less vulnerable to systematic risk in the market.

The present study selects all the constituents of BSE-ESG Index as the sample from the year 2013 to 2019. The data relating to ESG scores are sourced from yahoo.finance.com and other economic variables data has been collected from CMIE prowess database. The

results of the analysis revealed a significant negative impact of ESG score of the sample companies on their stock price synchronicity. The results indicate that one unit increase in ESG score results in -0.021 decrease in synchronicity. The results are in line with extant literature (Gelb & Strawser, 2001; Durnev et al., 2004). Results are robust to alternative definitions of synchronicity and ESG scores. So, it can be inferred that reporting of ESG scores of the stock improves the informational efficiency of the stocks and makes them resilient to market risks.

Keywords: ESG, Stock Price Synchronicity, Pricing Efficiency, Indian Stock Market, BSE.

1. INTRODUCTION

Corporate Social Responsibility (CSR) is the valuable word from the end of 20th Century. It is not just limited to the something giving back to society its more than that. From the early 21st century the significance of CSR has been changed it influencing the various stakeholder priority. From the last one decade Most of the Indian companies have been focused on CSR irrespective of the sectors of companies. In CSR those Companies connecting for the purpose of Social welfare, environmental protection, involving in development, protecting the stakeholder interest and many of other activities to safeguard of the society. In India to support corporate social responsibility the ministry of corporate affairs has been constituted a high level committee. In this article has been emphasized on all the listed companies in BSE 100 and considered those companies sharing implications towards Environmental, Societal and Governance (formally ESG). CSR is generally understood as a private firm policy a firms' implementation of the CSR goes beyond compliance with regulatory requirements. Organizations focusing on specific CSR initiatives that support social development. The implementation of these programs is carried out through various partner organizations. Researchers work primarily in the areas of education, livelihood and health ensuring environmental sustainability, ecological balance, protection of flora and fauna, animal welfare, agro forestry,

conservation of natural resources and maintaining quality of soil, air and water including contribution to the 'Clean Ganga Fund' set-up by the Central Government for rejuvenation of river Ganga;

This paper takes a different approach to answer the question. Instead of identifying the relationship between CSR and stock price movement due to consideration of ESG components. Researchers have done proper investigation significance role of Corporate Social Responsibility for stock price synchronicity. ESG components are deeply involving the actual effect and volatility of the stock price movements of the listed companies. This paper focuses on Companies utilization of CSR funds and effect of CSR in terms price movement all the organizations whatever usually provide the CSR fund are listed in the Stock exchanges. Consistent with the empirical and the first prediction, this paper finds that investor horizon is significantly positively correlated with CSR. Economically ESG components are influencing the prices of share as well as market capitalization of the Individual company. Finally ESG research is the ultimate way to identify and improving the positive structure of the firm. Aggregated ESG ratings into individual firm score by adding each firm's strengths and deducting the concerns. Managers grow the firm beyond optimal level to increase their power. With the ratio of invested funds in the ESG components, most of the cases three components are facilitated to increase positive synchronicity of the stock price volatility. While the findings of synchronicity with the effect of CSR ESG components are based on companies data listed from the BSE are based on a cross sectional analysis of a sample of firms, there is currently evidence is available for few companies only, whether individual firms can differentiate between CSR actions that benefit shareholders and CSR actions that create positive volatility movement of listed companies shares and CSR actions that create no value for shareholders but it will create name and fame to an individual firm which influences the share prices of firms in long run. We also investigate the weather nature of the business is depend on the utilization of CSR funds any impact on the reported relationships of the sector wise companies such as Pharma, Textile, Cement etc. As considered among many listed companies Pharma companies have been spent huge fund for CSR, the growth

rate of ESG components for pharma companies and IT export Services companies are high.

Corporate Social Responsibility is a necessary way to safeguard the interests of corporate stakeholders and to promote the sustainable development of society. CSR can be defined as the pursuit of social welfare maximization and sustainable development through effective management and operation of enterprises to actively assume responsibility for society, stakeholders, and environmental protection (Archie B. Carroll 1979). The three aspects of the model address major questions of concern to academics and managers alike: (1) What is included in corporate social responsibility? (2) What are the social issues the organization must address? and (3) What is the organization's philosophy or mode of social responsiveness (Max B. E. Clarkson 1995). discussion of the (1) corporations manage relationships with stakeholder groups rather than with society as a whole, (2) it is important to distinguish between social issues and stakeholder issues, and (3) it is necessary to identify the appropriate level of analysis in order to evaluate CSP. (Elisabet Garriga and Domènec Melé 2004) classifying the main CSR theories and related approaches in four groups: (1) instrumental theories, in which the corporation is seen as only an instrument for wealth creation, and its social activities are only a means to achieve economic results; (2) political theories, which concern themselves with the power of corporations in society and a responsible use of this power in the political arena; (3) integrative theories, in which the corporation is focused on the satisfaction of social demands; and (4) ethical theories, based on ethical responsibilities of corporations to society.

Alignment of CSR with the strategic objectives of the business is emphasized in CSR that companies should take the lead in protecting the rights and interests of employees, consumers, and shareholders, participating in environmental protection and social welfare, and taking responsibility for the sustainable and healthy development of society as a whole, (Marie Dutordoir et.al. 2018), examine whether corporate social responsibility creates value for seasoned equity issuers. Using a sample of seasoned equity offerings (SEOs) by U.S. companies between 2004 and 2013, and found a positive association

between CSR performance and the stock price reaction to SEO announcements.

CSR disclosure as an important method of non-financial information disclosure as an important method of non-financial information disclosure, the fulfilment and disclosure of CSR information is of great significance to the development of listed companies and capital markets. Non-financial information is an important piece of evidence for investors to make decisions. Disclosure of CSR information not only helps companies to foster sustainable competitiveness, but also helps to provide more information for capital market pricing.

1.1 NSE AND BSE ESG INDICES IN INDIA

NSE Indices has recently launched a new index on the ESG theme called “Nifty100 ESG Sector Leaders Index”. The Nifty100 ESG Sector Leaders Index gives investors exposure to select large cap companies in the Nifty 100 Index, which have scored well on ESG risk management compared to their peers and have low involvement in controversies. Companies with low ESG risk rating and low controversy levels have a better chance of index inclusion. The index has a base date of January 01, 2014, with a base value of 1000. The index tracks the performance of the stocks that are part of the Nifty 100 Index and which have scored well on management of Environmental, Social and Governance risk. Companies engaged in tobacco, alcohol, controversial weapons and gambling operations are excluded. Stock weights are based on free-float market capitalization, capped at 10%. The ESG investment theme continues to gain traction globally. In terms of passive funds, total assets invested in ESG ETFs/ETPs rose to \$101bn as of July 2020, compared to \$22bn as of end-2018 (Source : ETFGI.com). Recently, corporations and market participants in India have started to accept the importance of ESG factors in doing business. On Oct. 26, 2017, S&P BSE Indices launched its first ESG index, the S&P BSE 100 ESG Index.

1.2 COMPANIES ACT– CSR DISCLOSURE REQUIREMENT – RECENT AMENDMENT

CSR Amendment Rules 2021 Every company that fulfils the conditions set out under Section 135 of the Companies Act, 2013 (‘Act’) has to spend at least 2% of their average net profits made during the three previous financial years

towards the Corporate Social Responsibility (CSR) in the current financial year. The companies will have to spend on CSR as per the provisions of the Act and the CSR Policy Rules. The Ministry of Corporate Affairs (MCA) notified the Companies (CSR Policy) Amendment Rules, 2021 ('Rules') through a notification dated 22 January 2021. These Rules provide amendments to the Companies (Corporate Social Responsibility Policy) Rules, 2014.

1.3. MAIN PURPOSE OF THE STUDY

Examine the role of CSR information disclosure on the pricing efficiency of the capital market in detail, and explores whether CSR information disclosure can provide more information about the corporate management and future performance for investors, and then inject more effectiveness into the formation of asset prices.

1.4. PRICING EFFICIENCY OF THE CAPITAL MARKET

In an effective capital market, the stock price signal mechanism can guide the optimal allocation of resources and form the basic function of the capital market. However, stock prices in emerging markets reflect more market and industry factors, showing higher stock price synchronicity, which means that investors use less specific information in asset pricing decisions. That is, the corporate financial status, growth stage, and executive behaviour and other signals do not play an effective role in pricing.

1.5. WHAT IS STOCK PRICE SYNCHRONISM?

Stock price synchronism measures the degree of stock prices "rise or fall together", that is, the degree of simultaneous rise or fall of most stock prices during a certain period of time. Higher stock price synchronicity means less firm-specific information on stock price, but more information shared by the market and industry. Stock price reflects more information shared by the market and industry, thus reducing the pricing efficiency of the capital market. Morck et al. studied the stock price synchronicity of multiple countries in the world in 1995 and found that the stock price synchronicity of Chinese listed companies ranked second in the world and India ranked eleven in the world.

This paper made an attempt to investigate the impact of Environmental, Social and Governance (ESG) Corporate Social Responsibility on stock price movement of select listed companies on BSE in India. CSR is a best way for the sustainable development of the nation. CSR can be defined as an action of maximisation of social welfare and green development, the organization for economic cooperation and development (OECD) with effective management of resources and operation of an entity to actively undertake responsible for society and environmental protection (A.B. Carroll 1979). Increasing public awareness on Environmental, Social and Governance (ESG) leads to increase the demand for financial instruments that enhance an answerable business practices (Motta E.M. and Uchida .K 2018). Corporate social performance requires that a firm social responsibilities will assessed, social issues must be identified and address and a response philosophy must be chosen (A.B. Carroll 1979). The firm with high cost of equity capital in the previous year tend to initiate disclosure of CSR activities in the current year, that initiating firms with superior social responsibility performance enjoy subsequent reduction in the cost of capital (Dhaliwal et. al. 2011) It is emphasised the Ministry of Corporate Affairs (MCA) on CSR that the entities should take care of the stakeholders, participate in societal welfare and protection of environment for healthy and sustainable development of the society (Govt. of India 2018). In 2014 Govt. of India notified the companies CSR rules. In 2018 the Ministry of Corporate Affairs (MCA) has constituted a high level committee (HLC-2018) on CSR to review the existing framework, guide and formulate coherent policy on CSR. Activities covered under in CSR the schedule VII of the companies' act 2013 and amendments made thereunder. Activities are under taken under CSR are eradicating hunger, poverty and malnutrition's, promoting education, livelihood enhancement projects, gender equality, empowering woman, ensuring environmental sustainability, ecological balance, protection of flora and fauna, animal welfare, agro forestry, conservation natural resources, maintaining quality of soil, air and water, protection of national heritage, art and culture, training to promote rural sports, nationally recognised sports and Olympic sports, rural development projects and slum area development.

The stock markets in India were suddenly fall on 24 August 2015. The BSE sesex crash by 1624 point and NSE fell by 490 points. The reason for the crash in Indian market is due to fear over a slowdown in China, as the Yuan was devalued, that lead to a fall in other currencies and rapid selling of stock in India. The stock market continued to fall in 2016. By 16 February 2016 the BSE were fall by 1607 points. Reason is due to NPA of Indian banks and global weakness. The Indian stock market was highest fall in 2016. By 9th November 2016, the BSE had crashed by 1689 points, to 26902 and Nifty fallen by 541 points to 8002 (bseindia.com and nseindia.com). The reason was due to the crackdown on black money and the demonetization drive by the Indian government. If socially responsible firm commit to a high standard transparency and engage in less bad news hording, they would have lower crash risk. If manager engage in CSR to cover up bad news and divert shareholder security, CSR would be associate with higher crash risk (Kim et.al. 2014).

Environmental, Social and Governance (ESG) are three major factors in measuring the economic growth of an entity (George Kell 2014). Many investors in the industry believe that development of ESG factors are consideration in taking investment decision (Y.V. Langenove 2009). The indication towards the relationship between the ESG and financial performance is becoming superior and the combination of fiduciary duty and the extensive recognition of the necessity of the sustainability of investment in the long term has expected that the ESG concern are now increasing important in the investment market (Aguilera, R. V. et al. 2006).

2. LITERATURE REVIEW AND RESEARCH HYPOTHESIS

As the sustainable development of society draws more and more attention, the research on CSR has been increasing. In the early days, scholars' research on CSR mainly focused on its connotation and definition. In 1953, Bowen clearly defined CSR as making decisions based on social values and expectations in the book *Social Responsibility of Entrepreneurs*. Dahlsrud believes that CSR mainly covers five major aspects: Environment, society, economy, stakeholders, and voluntary behaviour. (Alexander Dahlsrud 2008) concluded that the confusion is not so much

about how CSR is defined, as about how CSR is socially constructed in a specific context.

Afterwards, scholars focused on the economic consequences of CSR, mainly involving the impact of CSR on stock price performance (Peter Rodriguez et.al. 2006) Scholars who analyse multinational enterprises (MNEs) recognize the complex relationship between international business (IB) and society. However, compared with other IB topics, research on politics, corruption and corporate social responsibility - 'three lenses' on the MNE - remains somewhat embryonic, with unresolved issues regarding frameworks, measurement, methods, and theory. (Ronald P. Guidry and Dennis M. Patten 2010) had investigated the USA firms whether market reactions are associated with the equity of the sustainability report. They found that there is no significant market reaction to the announcement of the release of the sustainability report but the cross-sectional analysis stated that the companies with highest quality report exhibited more significant positive market reactions than companies issuing lower quality reports. The quality of sustainability reporting is important to stakeholders provides valuable evidence to support improvements in the implementation of sustainability accounting and reporting, corporate performance and value (Amir Barnea et.al. 2013). Used we model a market in which some investors get utility from owning shares of firms that engage in corporate social responsibility. In equilibrium, investors' CSR considerations influence portfolio choices, stock prices, and CSR spending. (Nam 2017) The purpose of this study was to identify the effect of a company's incorporation into the Socially Responsible Investment (SRI) index on its cost of equity (COE) and corporate value. The analysis results failed to show any significant relation between the incorporation of the SRI index and the cost of equity capital. Also, no statistically significant correlation between the incorporation of the SRI index and corporate value was observed

In addition, a few studies have examined the impact of CSR on analysts' earnings forecasts. (Dan S. Dhaliwal et.al. 2011) had examined a potential benefit associated with the initiation of voluntary disclosure of corporate social responsibility activities: a reduction in firms' cost of equity capital. Finally, they found that firms exploit the benefit of a lower cost of equity capital associated with the initiation

of CSR disclosure. Initiating firms are more likely than non-initiating firms to raise equity capital following the initiations; among firms raising equity capital, following the initiation among the firm raising equity capital, initiating firms raise a significantly larger amount than do non-initiating firms stock price crash risk. (Yongtae Kim et.al. 2014) This study investigates whether corporate social responsibility mitigates or contributes to stock price crash risk. Crash risk, defined as the conditional skewness of return distribution, captures asymmetry in risk and is important for investment decisions and risk management. If socially responsible firms commit to a high standard of transparency and engage in less bad news hoarding, they would have lower crash risk. (Dong Yang Hao et.al. 2018) As the core of sustainable development strategy, corporate social responsibility is a concept that influences business missions, management, operations, finance, and marketing.

Studies of the economic consequences of CSR have focused on the theoretical and practical arenas. (Jingwen et.al. 2018) Social responsibility information disclosed by listed companies is an important way to transfer non-financial information to the stock market, which affects the level of stock price synchronicity. In order to explore whether Corporate Social Responsibility information is valuable in improving capital market pricing efficiency. The results showed that: Overall, there is a significant positive correlation between CSR information and stock price synchronicity. (Jinhua et.al. 2015) examines the impact of CSR activities on insider trading. While opponents of insider trading claim that the buying or selling of a security by insiders who have access to non-public information is illegal, proponents argue that insider trading improves economic efficiency and fairness when corporate insiders buy and sell stock in their own companies. (Chao Lu et.al.2018) Corporate Social Responsibility is the obligation of a company to pursue long-term goals, and is an important part of a sustainable society. It is related not only to the survival and sustainable development of the company, but also to the expectations of the public. CSR is an important way for companies to disclose non-financial information. Information disclosure can alleviate information asymmetry effectively, improve the quality of internal control, and affect the occurrence of insider

trading. CSR and insider trading have a significant negative correlation.

2.1 HOW CSR INFORMATION AFFECTS MARKET PRICING EFFICIENCY

As the source of information of listed companies, the disclosure of CSR information directly affects market pricing efficiency based on the information and is reflected in stock price synchronicity. In 1966, scholars began to study stock price synchronicity. King applied the capital asset pricing model and found that only the market and industry level information cannot fully account for stock price changes. What is more important is company-level information.

2.2. STOCK PRICE SYNCHRONICITY- ROOT THEORY – TWO CONTRADICTING VIEWS

At present, there are two main points of view on stock price synchronicity: “Information efficiency view” and “noise base view”, but most studies support the former, which says that stock price synchronicity reflects the level of firm-specific information integrated into the stock price (Durnev et.al. 2004) measure of the economic efficiency of corporate investment and the magnitude specific variation in stock returns. This finding is interesting for two reasons, of which a priori is obvious. First, it adds further support to the view that firm-return variation gauges the extent to which information about the firm is quickly accurately reflected in share prices. Second, it can be interpreted as evidence more informative stock prices facilitate more efficient corporate investment.

2.3. INFORMATION EFFICIENCY VIEW, INCENTIVE TO FULFILL CSR BY LISTED COMPANIES

In order to achieve a higher performance and shape the corporate image, listed companies have an incentive to fulfill CSR and disclose relevant information in a timely manner (Ş.C. Gherghina & L. N. Simionescu 2015) aims at exploring the influence of corporate social responsibility on firm performance and brand value for the companies covered within the top list of 50 U.S. companies and found a positive and statistically significant relationship between CSR and firm performance as proxied by return on assets. Based on the “information efficiency view”, when CSR reports make investors have a more company-level

information basis for decision-making, the stock price formed by investors' trading decision-making behaviour has more content of firm-specific information, and thus stock price synchronicity is lower. Since Morck et al. proposed using the fitting coefficient R^2 of the pricing model to measure stock price synchronicity Randall Morck et.al 1999 Stock prices move together more in poor economies than in rich economies. This finding is not due to market size and is only partially explained by higher fundamentals correlation in low income economies. Among developed economy stock markets, higher firm-specific returns variation is associated with stronger public investor property rights. They proposed that strong property rights promote informed arbitrage, which capitalizes detailed firm specific information.

Many scholars discussed the factors and mechanisms affecting stock price synchronicity, including internal corporate governance aspects, such as financial transparency (R. M. Bushman, et.al 2004) investigated corporate transparency, defined as the availability of specific information to those outside publicly traded firms. The tor, interpreted as financial transparency, captures the intensity and of financial disclosures, and their interpretation and dissemination by and the media. The second factor, interpreted as governance transparency, captures the intensity of governance disclosures used by outside investors hold officers and directors accountable. (Chan and Hameed 2006) had examined the relation between the stock price synchronicity and analyst activity in emerging markets. Contrary to the conventional wisdom that security analysts specialize in the production of firm-specific information, we find that securities which are covered by more analysts incorporate greater (lesser) market-wide (firm-specific) information. Using the R^2 statistics of the market model as a measure of synchronicity of stock price movement, they found that greater analyst coverage increases stock price synchronicity.

2.4 STOCK PRICE SYNCHRONICITY AND CSR SCORE

Stock price synchronicity actually measures the firm-specific information content in the stock price, and is closely related to non-financial information disclosure. On the whole, the existing literature pays less attention to the relationship between CSR and stock price synchronicity and

there is not a unanimous conclusion on the quality of CSR disclosure and information validity.

2.5 HOW CSR INFLUENCES THE CONTENT OF FIRM-SPECIFIC INFORMATION INTEGRATED IN THE STOCK PRICE

CSR influences the content of firm-specific information integrated in the stock price through information disclosure, which in turn affects capital market pricing efficiency. If companies actively fulfill their social responsibilities and disclose relevant information in a timely manner, more high-quality firm-specific information will be passed on to investors. (David et.al. 2001). Researchers and practitioners have devoted considerable attention to firms' policies regarding discretionary disclosures, and their results indicated that there is a positive relationship between disclosure level and corporate social responsibility. As an important supplement to non-financial information, CSR reporting helps to improve information transparency, reduce information hoarding activities of management (Yongtae Kim et al 2014). This study investigates whether corporate social responsibility (CSR) mitigates or contributes to stock price crash risk. Crash risk, defined as the conditional skewness of return distribution, captures asymmetry in risk and is important for investment decisions and risk management. Their findings support the mitigating effect of CSR on crash risk, and they found that firms' CSR performance is negatively associated with future crash risk after controlling for other predictors of crash risk. This role of CSR is particularly important when governance mechanisms, such as monitoring by boards or institutional investors, are weak. (Feng Gao et.al. 2014) A firm's investment in corporate social responsibility builds a positive image of caring for social good and imposes additional costs on executives' informed trading, which is widely perceived self-serving. Study found that there is a negative association between CSR and insider trading, profits is more pronounced when executives' personal interests are more aligned with the interests of the firm.

Researchers also find that our results persist across different time periods. Specifically, we investigate whether the recent financial crisis had an impact on environmental performance. We find that both during the crisis and prior

to the crisis many firms have consistent growth. Lower ESG strengths interestingly we find that non pharma and IT Services. A highly ESG components for listed companies could also have the strong potential growth and positive volatility. While the detrimental effects due to CSR allocation high growth can expect from stock movement. We know little about the mechanisms that effect of ESG in the process of the synchronicity of stock price movement. In this article we aim to fill this gap in the literature. We argue that corporate social responsibility (CSR) can reduce the negative impact of product market performance, positive growth towards Stock movement . Our study offers insights into the potentially important role of CSR in increase the firm value as well upward growth etc. Many firms devote a significant portion of their annual reports to describing their CSR activities, and several issue annual CSR reports on how they benefit various stakeholders. Apart from ESG information of listed companies the relevant information has been gathered from the annual reports of the various listed companies in BSE. Utilization of CSR fund also available in the annual reports of the companies. Observed the price movement in Indian context only. As Indian companies having less diversify for the CSR allocation, growth in ESG components and stock price changes comparing with global companies. Global companies are using CSR fund to create certain image in public whereas Indian companies are still suffering to sustain in long run as well as to create brand.

Based on the literature research both at home and abroad, this paper puts forward research hypotheses to discuss the impact of CSR on stock price synchronicity under different disclosure motives and the impact of different external information concern subjects on the above relationship. In this situation, the paper proposes the following hypothesis.

Hypothesis 1: A firms ESG score do not influence stock price synchronicity.

Hypothesis 2: There is no relationship between firms Environmental, Social and Governance, select variable disclosure and stock price synchronicity.

3. EMPIRICAL STUDY DESIGN

3.1 SAMPLE SELECTION AND DATA SOURCES

This paper selected all BSE–100 ESG companies for the period of 2013 to 2019 as the initial sample and conducted the following screening process for research need. Eliminate data with less than one year listing and less than 100 days of annual transaction in order to calculate the index of stock price synchronicity, and exclude the companies that have no data for the study period. Finally effective sample of the study includes 58 listed companies with a total of 341 observations. The required data were collected from CMIE prowess database and yahoo finance data base.

3.2 DEFINITION OF VARIABLES

The dependent variable of this research work is stock price synchronicity. According to the method of Morck et.al. Durnev et.al Gul et.al. the following equation is established to measure R^2

$$RET_{i,t} = \alpha_0 + \alpha_1 R_{M,t} + \varepsilon_{i,t}$$

Where $RET_{i,t}$ denotes the stock returns of i-th company on the t-th trading days, $R_{M,t}$ denotes the market weighted average market rate of return for the t-th trading day. The researcher used adjustment R^2 of equation to measure stock price synchronicity, which is the part of the individual stock returns explained by market. To overcome the limitation of R^2 range between 0 and 1, researcher performed logarithmic processing to obtain stock price synchronicity.

$$SYNCHRONICITY = \ln\left(\frac{R_i^2}{1 - R_i^2}\right)$$

The main independent variable of this research is ESG. With the method of existing literature the researchers used the following indicators to measure CSR. Set dummy variable CSR to measure whether the company discloses CSR information. In addition, researcher control some control variables. Referring to the existing literature (Zhang et.al. 2013, Dang et.al. 2018), this paper controlled the logarithmic value of shares traded, environmental, societal, governance, age of the firm, price to book value, standard deviation and kurtosis. For the measure of log value of shares used the price changes of share in the market, age of

the firm consider the date of incorporation. This research work also includes the standard deviation, skewness and kurtosis for the volatility of the companies' price to book value for the study period.

3.3 EMPIRICAL MODEL.

Referring to the study of Gul et al. 2010, research paper constructed multiple regression model to examine hypothesis. Specifically, researcher used the panel data regression for analysis. First, in order to test the effect of ESG on stock price synchronicity, the following equations have been used.

$$\text{SYNCHRONICITY} = \alpha_0 + \beta_1 \text{ESG SCORE} + \beta_2 \text{AGE} + \beta_3 \text{PBV} + \beta_4 \text{SHARES TRADED} + \beta_5 \text{STDDEV} + \beta_6 \text{SKEW} + \beta_7 \text{KURT} + \varepsilon$$

$$\text{SYNCHRONICITY} = \alpha_0 + \beta_1 \text{ENVIRONMENTAL} + \beta_2 \text{SOCIAL} + \beta_3 \text{GOVERNANCE} + \beta_4 \text{AGE} + \beta_5 \text{PBV} + \beta_6 \text{SHARES TRADED} + \beta_7 \text{STDDEV} + \beta_8 \text{SKEW} + \beta_9 \text{KURT} + \varepsilon$$

Where SUNCH is Stock price synchronicity, α_0 is constant; ESG SCORE is CSR ESG disclosure and β_1 is its coefficient; AGE is age of the company and β_2 is its coefficient; PBV is price to book value and β_3 is its coefficient; SHARE TRADED is share actively traded on BSE and β_4 is its coefficient; STDDEV is standard deviation and β_5 is its coefficient; SKEW is skewness and β_6 is its coefficient KURT is kurtosis and β_7 is its coefficient; ε is the error term.

4. ANALYSIS OF THE EMPIRICAL RESULTS

Analysis of the impact of ESG on Stock Price Synchronicity has been done in this section. At the outset, Panel regression has been done with Panel Least Square model to analyse the impact of ESG on Stock Price Synchronicity

4.1 REGRESSION ANALYSIS

This paper has selected Panel Least Squares model to test the impact of ESG on Stock Price Synchronicity. The test results are shown in Table 1. According to P value, null hypothesis is rejected and alternative hypothesis is accepted. To begin with researcher examines the impact of ESG on stock price synchronicity. The regression result shows that the coefficient of variable ESG is negative and statistically significant at 1% level, indicating that the

release of ESG report does achieve the effect transmitting the firm's specific information.

Table 1: Analysis of the impact of ESG on Stock Price Synchronicity Panel Data regression (Dependent Variable – SYNCHRONICITY)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ESG_SCORE	-0.020991	0.004658	-4.506140	0.0000
AGE	0.014049	0.003189	4.405384	0.0000
PBV	-3.92E-05	1.46E-05	-2.676572	0.0078
LOG(SHARES_TRADED)	0.037158	0.030623	1.213423	0.2258
STDDEV	0.321459	0.113913	2.821981	0.0050
SKEW	0.392422	0.089255	4.396627	0.0000
KURT	-0.030010	0.010244	-2.929591	0.0036
C	27.24740	10.77714	2.528259	0.0119
R-squared	0.222524	Mean dependent var	-1.346364	
Adjusted R-squared	0.206795	S.D. dependent var	1.018411	
S.E. of regression	0.907018	Akaike info criterion	2.665031	
Sum squared resid	284.6480	Schwarz criterion	2.752473	
Log likelihood	-463.7105	Hannan-Quinn criter.	2.699821	
F-statistic	14.14713	Durbin-Watson stat	1.102811	
Prob(F-statistic)	0.000000			

Source: computed from compiled data

It also indicates that the coefficient of variable age is positive and statistically significant at 1% level, indicate that there is more stock price synchronicity. Price to book value has negatively significant impact on stock price synchronicity. Share traded do not significant impact on stock price synchronicity. The R-squared value is 0.22 which indicates 22 per cent of variation on stock price synchronicity.

In addition, researcher examined ESG impact on alpha. Alpha measures the amount that the investment has returned in comparison to the market index. Alpha shows how well a stock has performed in comparison to a benchmark index. Next, the sample researchers examine ESG and select variable impact on stock performance. Table 2 has selected Panel Least Squares model to test the impact of ESG on Stock Performance (Alpha). The test results are shown in Table 2. The regression result shows that the coefficient of variable ESG is negative and statistically

insignificant. It indicates that the release of ESG report does not achieve the effect transmitting the firm's specific information. It also indicates that the coefficient of variable age is negative and statistically significant at 5% level; indicate that there is more stock performance, which is similar to the existing research conclusion of Zang et.al. and Hasan et.al. Price to book value has positively insignificant impact on stock performance. Shares traded have negatively significant impact on stock performance. The R-squared value is 0.06 which indicates 6 per cent of variation on stock performance.

Table 2: Analysis of the impact of ESG on Stock Performance Panel Data regression (Dependent Variable – ALPHA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ESG_SCORE	-0.000320	0.001995	-0.160356	0.8727
AGE	-0.002809	0.001369	-2.051612	0.0410
PBV	5.77E-06	6.27E-06	0.920979	0.3577
LOG(SHARES_TRADED)	-0.051041	0.013109	-3.893482	0.0001
STDDEV	0.063889	0.048765	1.310146	0.1910
SKEW	0.009922	0.038209	0.259667	0.7953
KURT	0.002809	0.004386	0.640297	0.5224
C	-3.387011	4.614396	-0.734010	0.4634
R-squared	0.067811	Mean dependent var		0.300907
Adjusted R-squared	0.048897	S.D. dependent var		0.398136
S.E. of regression	0.388280	Akaike info criterion		0.968223
Sum squared resid	52.01269	Schwarz criterion		1.055848
Log likelihood	-162.8913	Hannan-Quinn criter.		1.003090
F-statistic	3.585247	Durbin-Watson stat		2.110653
Prob(F-statistic)	0.000969			

Source: computed from compiled data

Further, researcher examined how ESG impact on beta. Beta is a measure of volatility relative to benchmark of stock index. Table 3 has selected Quantile Regression model to test the impact of ESG on Stock Price Volatility (Beta). The test results are shown in Table 2. The regression result shows that the coefficient of variable ESG score is negative and statistically insignificant. It indicates that the release of ESG report does not achieve the effect transmitting the firm's specific information.

Table 3: Analysis of the impact of ESG on Stock Price Volatility Quantile Regression (Dependent Variable – BETA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ESG_SCORE	-0.003211	0.002380	-1.349328	0.1781
AGE	0.005142	0.001573	3.269167	0.0012
PBV	-2.04E-05	3.02E-05	-0.675927	0.4995
LOG(SHARES_TRADED)	0.022830	0.016282	1.402115	0.1618
STDDEV	0.523803	0.087452	5.989581	0.0000
SKEW	0.130991	0.057528	2.277002	0.0234
KURT	-0.007827	0.003762	-2.080461	0.0382
C	14.68770	22.32731	0.657836	0.5111
Pseudo R-squared	0.279955	Mean dependent var		0.927252
Adjusted R-squared	0.265345	S.D. dependent var		0.386757
S.E. of regression	0.305610	Objective		40.20011
Quantile dependent var	0.900000	Restr. Objective		55.83000
Sparsity	0.788999	Quasi-LR statistic		158.4782
Prob(Quasi-LR stat)	0.000000			

Source: computed from compiled data

It also indicates that the coefficient of variable age is positive and statistically significant at 1% level; indicate that there is more stock price volatility. Price to book value has negatively insignificant impact on stock price volatility. Shares traded have positively insignificant impact on stock price volatility. The R-squared value is 0.27 which indicates 27 per cent of variation on stock price volatility.

In addition, in order to further explore whether individual variable Environment, Social and Governance is measure individual impact on stock price volatility. Table 4 the result show that the coefficient of variable Environmental, and Price Book Value is negative and statistically significant, it indicate that disclosure of high quality of CSR report leads to less synchronicity and vice-versa. Coefficient of variable Social and Age is positive and statistically significant. Coefficient value of variable Governance is negatively insignificant. Coefficient of variable share traded is positive and statistically insignificant. R-squared value is 0.317 which indicate that approximately 32 per cent variation in stock price synchronicity.

Table 4: Analysis of the impact of Environmental, Social and Governance on Stock Price Synchronicity
Panel Least Squares Regression (Dependent Variable – SYNCHRONICITY)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ENVIRONMENTAL	-0.025202	0.004673	-5.393398	0.0000
SOCIAL	0.010252	0.004380	2.340778	0.0198
GOVERNANCE	-0.003636	0.005150	-0.705950	0.4807
AGE	0.014925	0.003121	4.782817	0.0000
PBV	-4.46E-05	1.39E-05	-3.214387	0.0014
LOG(SHARES_TRADED)	0.014094	0.029719	0.474227	0.6357
STDDEV	0.539153	0.143834	3.748439	0.0002
SKEW	0.352157	0.087835	4.009313	0.0001
KURT	-0.034267	0.010235	-3.348202	0.0009
C	30.99071	10.22914	3.029648	0.0026
R-squared	0.317562	Mean dependent var	-1.345035	
Adjusted R-squared	0.299007	S.D. dependent var	1.021949	
S.E. of regression	0.855630	Akaike info criterion	2.554930	
Sum squared resid	242.3261	Schwarz criterion	2.667302	
Log likelihood	-425.6156	Hannan-Quinn criter.	2.599701	
F-statistic	17.11399	Durbin-Watson stat	1.245956	
Prob(F-statistic)	0.000000			

Source: computed from compiled data

5. CONCLUSIONS AND SUGGESTIONS

This paper studied the value of ESG information on firm specific information and capital market pricing efficiency based on the sample of Indian BSE ESG 100 listed companies in the 2013 to 2019. The results showed that overall value of ESG disclosure for improving the efficiency of the capital market pricing. There is significant negative impact between ESG disclosure and stock price synchronicity, it indicate that more ESG disclosure leads to less price synchronicity and vice-versa. Under different disclosure motive there is significance difference impact of ESG on stock price synchronicity.

The research in this paper is of great significance for understanding the role of ESG information and external information concern subject. This paper shows that disclosure motivation directly affect ESG information content and stock price synchronicity. There is significant difference in the stock price synchronicity for the

companies that disclose ESG information and the companies that do not. On the whole, the ESG report is more used as self-interest tool by the Indian companies. As Indian companies having less diversify for the CSR allocation, growth in ESG components and stock price changes comparing with global companies. Global companies are using CSR fund to create certain image in public whereas Indian companies are still suffering to sustain in long run as well as to create brand.

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