

Does the market value Impact Investing (II) and Socially Responsible Investing (SRI) Strategies?

ABSTRACT

This study investigates whether the market values impact investing (II, “doing good”) and socially responsible investing (SRI, “not doing bad”) strategies differently by examining the relationship between stock performance of different time horizons and sustainability strengths and concerns using a system of linear equations approach, after controlling for economic sustainability. We show the the negative effect of II has longer horizon effect than the positive effect of SRI strategy on stock returns. Additional tests show that the relationship between stock performance and economic (non-financial) sustainability performance is weakening (strengthening) over time. We also find that the relationship between stock returns and corporate investment strategies depends on resources availability and level of institutional ownership. Results provide policy, practical and research implications by promoting II and SRI investment strategies in generating economic return on investment for shareholders while achieving social and environmental impacts.

Keywords: Impact Investing; Socially Responsible Investing; Sustainability Performance; Stock Returns; Investment Strategies.

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I. Introduction

There is an ample evidence that business organizations pursue profit-with-purpose goals and investors integrate environmental, social and governance (ESG) sustainability factors of performance, risk and disclosure into their investment decisions (Rezaee, 2021). On August 19, the Business Roundtable (BRT), announced the adoption of a new “Statement on the Purpose of a Corporation” that promotes the move toward ESG sustainability of creating shared value creation for all stakeholders (BRT, 2019). The International Organization of Securities Commission (IOSCO) underscores the importance of integrating ESG factors into long-term sustainable investment strategic decisions (IOSCO, 2019). The COVID-19 pandemic forces organizations to pay more attention to ESG sustainability by focusing on safety, health and wellbeing of their employees, suppliers and customers (Rezaee, 2020). The 2020 Government Accountability Office (GAO) report indicates that the majority of investors seek ESG information to better understand risks that could affect financial performance (GAO, 2020). The Global Impact Investing Network (GIIN)¹ refers to impact investing (II) as “investments made with the intention to generate a positive, measurable, social, and environmental impact alongside a financial return,” (GIIN, 2019).² Although the II³ concept has often been used interchangeably with socially responsible investing (SRI), the two concepts have important differences. SRI is commonly referred to as the investment strategy that maximizes financial returns while minimizing any negative impact on the society or environment whereas II is a deliberate investment strategy to achieve both financial returns and social and/or environmental impacts (Hebb, 2013; Rezaee and Fogarty, 2019). Thus, this study investigates whether the market values II (“doing good”) and SRI (“not doing bad”) strategies by examining the relationship between short- and long-horizon stock performance and sustainability strengths and concerns using a system of linear equations approach.

The distinction between II and SRI investment strategies is important for several reasons. First, Naughton, Wang and Yeung (2019) suggest that investor sentiment plays a role in firms' commitment to CSR/ESG and find that there is a positive association between abnormal returns and CSR activities when investors place a valuation premium on CSR performance. Second, investors are now pay more attention to ESG initiatives and investments as asset managers of the Big 3 investment families (BlackRock, State Street and Vanguard) consider ESG risks and opportunities in their investment strategies (Rezaee and Fogarty, 2019) and global companies and regulators underscore the importance of ESG initiatives and investment (BRT, 2019; IOSCO, 2019). Third, Pastor, Stambaugh and Taylor (2020) examine financial and ESG effects of sustainable investing in a general equilibrium model and find that green assets of firms with positive externalities for society have lower CAPM alphas (expected returns) than brown firms imposing negative externalities. This suggests that investors with stronger ESG preferences with focus on (II) with portfolios the tilt more toward green assets earn lower expected returns than investors with focus on SRI of investing in brown assets. Our study provides empirical evidence for the investment equilibrium of Pastor et al., (2020). Finally, it is important to distinguish between II and SRI strategies, as the two concepts are fundamentally different (O'Donohoe, Leijonhufvud and Saltuk, 2010; Hebb, 2013). For II, the investment managers are trying to maximize financial performance as well as to have positive and measurable effects on the environment and society (positive screening). II includes investing in employees, the environment and communities by allocating resources to human capital, underserved individuals and communities and business initiatives with a defined environmental and social purpose. Positive effects on the environment, employees, communities and society necessitate investment in assets the achieve specific ESG issues of climate change, water, food, renewal energy, clean

technology and safety, health and wellbeing of employees, suppliers and customers and thus cannot be achieved without allocating scarce resources that could otherwise be used to maximize firms' financial economic performance. Socially responsible investing (SRI), on the other hand, entails a systematic consideration by firms and their directors and executives to minimize the possible negative impacts of business operations on communities, society and the environment. Business activities to generate the desired financial returns and minimize the negative social and environmental impacts through SRI does often not require corporate managers to allocate resources to ESG initiative rather engage in business activities with minimal negative impact on the environment and society (negative screening). Engagement in II is expected to be rewarding for firms as attempting to being good citizen whereas involvement in SRI is viewed as firms are not behaving badly toward society and the environment.⁴

The theoretical intuition for our prediction of the relationship between II and SRI investment strategies and stock returns is based on the value enhancing theory and the shareholder expense theory as well as the stakeholder primacy and shareholder primacy concept as explained in the third section. The concept of shareholder primacy suggests that the main objective of a firm is to generate financial economic returns to its shareholder. Under the shareholder primacy concept, any socially conscious investing can refute the prevailing investment theme of creating shareholder value by increasing stock prices and/or dividends for investors. The emergence of investor interest in long-term growth and ESG sustainability factors introduces the concept of stakeholder primacy where investors, particularly the index funds (e.g., BlackRock, State Street, Vanguard), encourage public companies to adopt ESG sustainable investment strategies that create shared value for all stakeholders by being socially and ethically acceptable. We develop and test two alternative hypotheses about the competing

(complementing) relationship between II (SRI) strategies and stock performance as depicted in Figure 1. The competing hypothesis posits a negative relationship between the II strategy and stock performance, whereas the complementing hypothesis suggests a positive association between the SRI strategy and stock performance. These possibilities and alternative hypotheses introduce tensions into our research question of whether and how non-financial ESG investment strategies are associated with stock performance and how the market prices the different corporate investment strategies of II and SRI. More specifically, we test whether the stock market prices the existence of sustainability strengths and a lack of sustainability concerns. We use the existence of ESG sustainability strengths as a proxy for II strategy supported by the stakeholder primacy concept and the absence of ESG sustainability concerns as a proxy for the SRI investing strategy advocated by the shareholder primacy concept. We test the relationship between these investment strategies (II and SRI) and stock financial performance, after controlling for economic performance, firm size, profitability, systematic risk and leverage.

Insert Figure 1 Here

In an efficient market, the stock market should react positively to value-increasing investment decisions (Woolridge and Snow, 1990) and Eccles, Serafeim and Krzus (2011) find that market participants are interested in non-financial information like II and SRI strategies. The current debate is centered around the issue of whether investment strategies (II, SRI) that seek to obtain social and environmental impacts create shareholder value and what investment strategies could maximize shareholder wealth in the long term. This shareholder wealth maximization view is important in examining the association between II and SRI strategies and the capital market performance. The 2020 Institutional Investor survey finds that respondents unanimously agreed that ESG risks and opportunities play an important role in their investment decisions with

climate change and human capital management being considered as the top of the ESG sustainability topics (Morrow Sodali. 2020). Lopez-de-Silanes et al. (2019) state that the prior literature finds mixed evidence that, under certain conditions, environmental, social, and governance criteria are individually correlated with firms' positive financial performance. Therefore, this study addresses the asymmetry between doing good through II strategy and not doing bad by employing SRI strategy and thus examines the systematic impacts of II and SRI strategies on stock performance.⁵This study takes the wholistic approach in examining whether and how financial economic sustainability performance (ESP) and non-financial environmental, social and governance (ESG) sustainability performance measures are reflected in stock returns as depicted in Figure 1.

We perform our analyses in two stages. In the first stage, we examine the association between the existence of sustainability strengths and lack of sustainability concerns on stock performance. Following prior studies (e.g. Dhaliwal et al., 2011, 2012, 2014; Ng and Rezaee 2015), we use the provisions included in the MSCI KLD to proxy for corporate investment strategies. Unlike prior studies that use the difference between strengths and concerns as an overall measurement of Corporate Social Responsibility (CSR) performance, we use an alternative research design and first separate corporate performance into financial and non-financial performance. We refer to financial performance as economic performance, which encompasses operational efficiency, growth opportunity, and research efforts. Although there may be disagreement about the relative importance of these performance measures, there is no controversy with respect to the direction of association between stock performance and these measures. We treat the maximization of financial economic performance as the main objectives

of firms and our focus is on the corporate investment strategies that involve the ESG dimensions of sustainability when we consider non-financial performance.

We map the different KLD ESG sustainability dimensions and attributes into the II and SRI strategies as illustrated in Appendix A. Sustainability strengths and concerns are classified into seven categories and we use six categories (except for product) in the MSCI KLD database to proxy for different types of investing strategies. Strengths are related to provisions that have a positive impact on the prescribed areas of interests. For example, Charitable Giving (*COM-str-A*) is a strength with respect to community and this provision is related to the fact that “the company has consistently given over 1.5% of trailing three-year net earnings before taxes (NEBT) to charity or has otherwise been notably generous in its giving” (MSCI/KLD, 2015). This provision is consistent with our definition of II, as the company has pro-actively taken actions (in this case the giving of 1.5% of NEBT to charity) to benefit society. On the other hand, there are concern provisions in the respective areas, which are viewed to be harmful to the community. For example, Negative Economic Impact (*COM-con-B*) is a concern with respect to the community. According to MSCI KLD, companies would be assigned this concern if their actions have caused major controversies concerning their economic impact on the community. These controversies can include issues related to environmental contamination, water rights disputes, plant closings, "put-or-pay" contracts with trash incinerators, or other company actions that adversely affect the quality of life, tax base, or property values in the community (MSCI/KLD, 2015). The absence of these concerns is consistent with our definition of SRI strategies, as the firm is seen as having a less negative impact on society but does not receive direct benefit from the absence of this concern.

We show that endogeneity is a challenge in our analyses and therefore we use seemingly unrelated regressions (SURs) to capture the inter-relationships between important variables. Results show that while stock performance is positively affected by the financial economic performance, corporate investment policies with respect to environment and society also affect both financial performance and stock returns. Specifically, since the market is pricing economic performance positively, it suggests that the key objective of corporations is still to maximize economic profit and/or growth and it is important to control for economic performance when investigating the relationship between other investing strategies (II and SRI) and stock performance.

After controlling for economic performance, we find that the market prices the existence of sustainability strengths negatively (doing good), that is, II is associated with negative stock returns. These results are consistent with our hypotheses that sustainability strengths require additional resource allocation and investment, which may hinder the economic performance of the firms and these results are consistent with the shareholder primacy concept. Simultaneously, the market prices the absence of sustainability concerns positively (not doing bad), that is, the market associates SRI with positive returns and this is consistent with the stakeholder primacy concept. We interpret these results as the market assigns positive value to firms that are not engaging in harmful activities to the environment and society. Our assumption is that not engaging in these activities may not involve additional costs and the market is pricing restraints from these activities positively. The market seems to realize that although investment strategies that address sustainability concerns not only generate short-term positive returns, they may also be a benefit to the corporations in the long run. Additional analyses show that the negative effect of II on stock performance is relatively small in magnitude, as compared to the positive return

induced by economic performance. Whether the relatively small negative impact on stock returns induced by II strategies is good or bad news for investors is left for the readers to judge.

In the second stage, we further address additional research questions relevant to our study. First, we investigate the time trend of associations between investment strategies and stock performance. Our prediction is that stocks of firms with II-focus ESG-friendly portfolios could underperform stocks of firms with SRI-focus in the short-term, but they could even outperform in the long run as flows into sustainable investment products increase. We find that the relationship between stock performance and financial (non-financial) performance is weakening (strengthening) over time, which is consistent with anecdotal and survey evidence that investors are increasingly paying attention to non-financial sustainability factors and integrating them when making corporate investment decisions (IRRCi, 2018; Boze et al., 2019; IOSCO, 2019). Second, we examine whether the availability of corporate resources, proxied by firm sizes, moderates the relationship between investment strategies (II, SRI) and stock performance. We find that that the positive relationship between stock returns and the absence of sustainability concerns disappears when the resources to invest in sustainability are lower (when the firm is small). A possible explanation for this result is that firms need to be financially healthy to invest in social and environmental initiatives and to avoid activities that could harm society and the environment. Finally, we investigate the impact of institutional investors on the pricing of different investment strategies as the anecdotal evidence suggests that institutional investors and the index funds are the driving force behind the movement towards the integration of non-financial ESG into investment decisions (CFA Institute, 2018). Corporate investment strategies of II and SRI, are likely to be considered as the criteria that institutional investors use to evaluate corporations. We find that the relationship between investment strategies and stock

performance is marginally weaker for corporations with lower institutional ownership. These results support anecdotal evidence that institutional investors are more interested in using ESG information in their investment decisions (CFA Institute, 2018; Boze et al., 2019). Another possible explanation for this result is that retail investors may not be able to fully understand the impacts of ESG sustainability investment policies on corporate values as they tend to do little to encourage their companies to adopt these policies and to practice good ESG initiatives.

This study contributes to the literature in several ways. First, this is the original study that addresses the asymmetry between “doing good” and “not doing bad” by distinguishing between II and SRI strategies and examining the differences of the impacts of these investment strategies. The differences between II and SRI are subtle, but they are important for understanding how the market prices different types of corporate investment strategies. The distinction between II and SRI strategies is becoming more relevant in the aftermath of the COVID-19 pandemic as firms are expected to invest in human capital and social and environmental initiatives to ensure safety, health and wellbeing of employees, customers and suppliers. Second, we are not aware of other studies that simultaneously consider objectives of different stakeholders under the stakeholder primacy concept, while the main objective of corporations is still to maximize shareholder wealth consistent with the agency/shareholder primacy concept. Third, our study contributes to a line of research on social capital and the economic benefits of social capital in terms of impacts on stock prices and their implications for investors (e.g., Hasan et al., 2017). Fourth, our study contributes to the emerging sustainability literature and results provide policy, practical and research implications in the post-COVID-19 era. Results support the recent anecdotal evidence that investors, particularly institutional investors are increasingly considering investment strategies with long-term social and environmental factors (Edelman Trust Barometer, 2018;

Boze et al., 2019). The results also support the emerging concept of profit-with-purpose corporations that create shared value for all stakeholders by achieving both financial economic performance and non-financial ESG performance. This concept has recently been advocated by portfolio managers and investor advisors (Fink, 2019).

Finally, results confirm the recent ESG investment initiatives that have been taken by the CFA institute requiring that CFA charter-holders conduct proper research and examination of all material financial and non-financial information relevant to their investment decisions and consider the ESG factors of performance, risk and disclosure as part of their robust analyses for any actively managed fundamental investment portfolio (CFA Institute, 2018). Public companies have increasingly disclosed more ESG performance information and this trend is expected to continue as investors and other entities with over US\$5 trillion in assets under management, have sent a petition to the SEC requesting the establishment of a comprehensive framework requiring public companies to disclose ESG sustainability performance (SEC, 2018). Addressing II and SRI strategies and related disclosures provide investors with sufficient information to make voting and investment decisions.

This study is organized as follows: We first discuss theoretical foundations and review related literature in section 2. Based on the discussions, hypotheses are then developed in section 3. Research design and results are reported in Section 4. We address additional questions and perform further additional analyses in Section 5. We report the results of robustness tests in Section 6 and Section 7 concludes.

II. Theoretical Framework, Literature Review, and Hypothesis Development

II.1 Theoretical Framework

The emergence of focus on the achievement of long-term sustainable financial economic performance and non-financial ESG sustainability performance have changed corporate strategic plans and investment decisions. There are two aspects of CSR/ESG investment, which should relate to how

managers proceed with their corporate decisions. The first aspect is the traditional “shareholder value maximization” based on the value enhancing theory where management attempts to improve earnings for shareholders in the context of the “shareholder primacy” concept under the agency/shareholder theory (Palladino and Karlsson, 2018). The second aspect is the broader “stakeholder/society value creation” based on the shareholder expense theory where management maximizes the sum of the various stakeholders’ surpluses (e.g., creditors, employees, customers, suppliers, society and the environment) under the “stakeholder primacy” concept in compliance with the stakeholder theory (Palladino and Karlsson, 2018). In 2007, the Rockefeller Foundation introduced the concept of impact investing (hereafter II) highlighting the importance and relevance of corporate investment strategies that provide positive social and environment impacts (Harji and Jackson, 2012; Höchstädter and Scheck, 2015). The value enhancing theory posits that ESG investment strategies (II and SRI) generate competitive advantages that create long-term shareholder value and thus reflected positively in stock prices. Conversely, the shareholder expense theory holds that ESG investment strategies (II and SRI) create expenses for shareholders and thus resulting in lower market values. For example, Aupperle et al. (1985) and Barnea and Rubin (2010) argue that the commitment to ESG sustainability can lead to over-investment that are not in the best interest of the shareholders.

Under the shareholder primacy concept, a single-task agency problem may exist where management only focuses on maximizing shareholder value. Shareholders monitor corporate activities and influence management incentives and compensation through corporate governance measures and policies such as proxy access, majority voting and say-on-pay votes. At the same time, managerial explicit (e.g., bonuses and stock options) and implicit (e.g., career-concerns) incentives also ensure alignment between management and shareholder value maximization as reflected in the costs of capital and firm values. In support of the shareholder primacy concept, Friedman (1970) states that the social responsibility of a business is to increase profits and that the managers of firms should make decisions to maximize market values of the firms, while conforming to the basic rules of the society, like the law and ethical customs.

Resulting externalities should be addressed by governmental interference and firms should concentrate on generating profit for shareholders. In this case, addressing social welfare is equivalent to hurting shareholders and thus there is no room for II or SRI strategies.

In recent years, however, there has been a move worldwide towards the stakeholder primacy concept of corporations intended to fundamentally rebalance power among stakeholders. The concept of stakeholder primacy suggests that public companies focus on corporate purposes beyond shareholder-value creation and thus management should also consider the interest of every stakeholder who provides capital to the firms including financial, operational, human, societal, and environmental capitals. This suggests that public companies in the long-term must not only secure financial returns for shareholders but also make a positive contribution to society and the environment (Berger, 2019). These studies introduce the concept of shareholder welfare and they argue that shareholder welfare and market value are not the same (Elhauge, 2005; Graff and Small, 2005; Baron, 2007; Benabou and Tirole, 2010; Morgan and Tumlinson, 2012; Magill et al., 2015; Hart and Zingales, 2017). For example, Hart and Zingales (2017) discuss the objective function for a firm and suggest that companies should focus on shareholder welfare rather than market value when making business decisions in order to benefit the investors. It is important to note that a company's shareholders (in the case of institutional investors, those who invest in the institutions) are ultimately ordinary people, who in their daily lives are concerned about money, but not just about money. They care about the society and the environment in which they live.

Traditionally, investors have not done enough to change management short termism preference when creating shareholder value under the stakeholder primacy concept. However, realizing the harmful effects of externalities induced by for-profit-only business entities, the behaviors of investors appear to be changing in recent years. A group of investors, particularly the index funds including BlackRock, State Street and Vanguard have started to pay attention to managerial decisions that may cause detrimental effects on the environment and society and thus encouraged public companies to implement long-term sustainable investment policies with focus on ESG initiatives. Indeed, the World Economic Forum (WEF) released its New Paradigm on corporate governance in 2016, which articulates a set of

stewardship principles to support sustainable long-term investment on ESG initiatives (WEF, 2016). The combination of both shareholder primacy and stakeholder primacy concepts is therefore relevant to this study (Hill and Jones, 1992). We use two investment strategies in the context of shareholder primacy and stakeholder primacy concepts to capture managerial business decisions that are related to shareholders and stakeholders and we examine how investors are going to react to these decisions. We use SRI strategy to capture the shareholder primacy concept while II strategy is a proxy for stakeholder primary concept. Both shareholder theory of shareholder primacy concept and stakeholder theory of stakeholder primacy concept explain the economic function of sustainability performance and ESG disclosures in maximizing positive or minimizing negative externalities of sustainability activities. In compliance with both shareholder primacy and stakeholder primacy concepts, management should balance interests of all stakeholders in such a way to maximize a firm's aggregate welfare of all stakeholders assuming that maximizing welfare is in line with maximizing firm long-term value.

II.2 Literature Review

The concepts of impact investing (II) and socially responsible investing (SRI) were not relatively utilized by economists in the early years, especially for financial economists. A stream of management studies find positive association between CSR performance and corporate performance. For example, Flammer (2015) finds that the adoption of CSR proposals leads to positive announcement returns and superior accounting performance and this effect is mainly due to increase in labor productivity and sales growth. Servaes and Tamayo (2013) examine the impact of CSR on firm value and find that the relationship only exists for firms with high customer awareness. However, Oikonomou, Brooks and Pavelin (2012) examine the impact of corporate social performance (CSP) on financial risk and utility and find that CSP is negatively but weakly related to systematic firm risk and that corporate social irresponsibility is positively and strongly related to financial risk. Using a regression discontinuity approach, Although Oikonomou et al. (2012) find a negative relationship between CSP and risk, their study only focuses at the wealth-protective effects of CSP while market pricing of these strategies is not

taken into account. Several other studies (e.g. Fama and French, 1995, 2007; Hart and Zingales, 2017) address non-pecuniary preferences of investors in different settings. A separate stream of research therefore emerges, and studies begin to consider the impact of managerial decisions on other stakeholders and the environment. It is, however, important to distinguish between these two corporate investment strategies, as they have significantly different impacts on the welfare of stakeholders. II is a relatively new term and it refers to investment that “are primarily made to create social impact, but also have the potential for financial returns on investment” (Clarkin and Cangioni, 2016). Besides focusing on financial returns, II strategies also have specific and active social and/or environmental objectives.

Positive externalities on the environment and society cannot be achieved without allocating scarce resources, and these resources could be used to maximize firms’ financial/economic performance instead. Thus, II is defined as a strategy that strives for acceptable financial returns while aiming for positive environmental and social impact. The concept of II is also known as social finance, social impact investing, or blended value investing (Martin, 2013). SRI, on the other hand, is an investment strategy that only require management to make operational and investment decisions with minimal negative impacts on the environment and society without demanding the allocation of scarce resources.

Investors and the capital market value these corporate investment strategies that are related to II and SRI. Saltuk et al. (2014) survey 125 international impact investors who reported that they were managing over \$46 billion of impact investments. The European Sustainable Investment Forum also estimates that the total value of impact investing in Europe amounts to €8.75 billion (Eurosif, 2012). A report co-authored by J.P. Morgan, the Rockefeller Foundation and the GIIN estimates the potential value of impact investments to be in the range of \$400 billion to \$1 trillion by 2020 (O’Donohoe et al., 2010). According to Forbes⁶, financial giants like Black Rock, Goldman Sachs and Bain Capital have established special units to make impact investments and there are 28 impact investment funds in the *2017 Best for the World Funds list* that have had their impacts verified by a third party and reported in such a way that comparisons are possible, which shows that the market is paying unprecedented attention to II and SRI.

Taken together, as the II and SRI strategies are relatively new, there are only a handful of studies that examine II whereas there are quite a number of studies that investigate the effect of SRI on stock returns. A common theme in prior studies is that they tend to examine II and SRI funds, which by definition, are funds that choose their investment not solely based on financial returns. For example, Barber, Morse and Yasuda (2018) examine the performance of II and SRI funds, by comparing them to venture capital (VC) funds to determine whether investors are willing to accept lower financial returns in favor of achieving some environmental and social objectives such as “to reduce greenhouse gas emissions,” “to encouraging the development of women and minority-owned firms,” and “to alleviate poverty in developing countries”. Our study contributes to the investment funds literature by: (1) examining the stock performance of firms conducting II and SRI strategies rather than the funds that invest in these stocks; and (2) distinguishing between corporate objectives that generate positive externalities and those that avoid negative externalities.

Prior studies and authoritative reports (e.g., Rezaee, 2016; Boze, Krivitski, Larcker, Tayan, and Slotnicka 2019; IRRCi, 2018; IOSCO, 2019) show that investors take into account non-financial ESG sustainability information when making investment decisions. ESG factors represent both business performance opportunities and risks that could have significant effects on financial performance (Ng and Rezaee, 2015), corporations tend to voluntarily disclose their ESG policies, practices and performance information (Rezaee, 2016). Prior research, as reviewed in the second section, tend to examine the relationship between these two ESG investment strategies (II and SRI) and stock performance in an isolated fashion. For example, Waddock and Graves (1997) and McWilliams and Siegel, (2001) find a positive link between corporate social performance (CSP), which consists partially of both II and SRI strategies, and stock performance. However, these studies treat II and SRI strategies as the same type of investment strategy and do not examine the differential impacts of the two strategies. Hong and Kacperczyk (2009) investigate how the market price “sin” stocks⁷ by showing that investors behave according to social norms and are against the funding of operations of “sin” stocks, even at a financial cost of abstaining from these stocks. In other words, Hong and Kacperczyk (2009) examine the impacts of

“not doing bad” investment strategies on corporate decisions. Luo and Balvers (2017) model the pricing implications of social screens adopted by SRI and find abnormal return to sin stock. Our study attempts to bridge the gap in the literature by examining whether and how the capital market differentially prices “doing good” (II) and “not-doing-bad” (SRI) corporate strategies.

II.3 Hypotheses Development

Jensen and Meckling (1976) show that there is a Pareto equilibrium that the market prices agency problems, when managers (the agents) may not be acting in the best interests of the owners of the firm (the principals), accordingly by lowering the value of the firms involved. Fama (1980) shows that separation of ownership and control is an equilibrium for corporations and investors, given that the firms operate in a competitive market and managers are constantly scrutinized by the managerial labor market. The adoption of shareholder primacy concept has traditionally pressured management to generate short-term returns for shareholders. However, institutional investors and portfolio asset managers by adopting the emerging stewardship principles of corporate governance have encouraged corporations to adopt long-term sustainable investment and ESG initiatives. Nonetheless, there could be a tension between shareholders and the other stakeholders of the firm under the stakeholder primacy (Rezaee, 2016). As a result, managers commonly face dilemmas of making business decisions that could avoid such a tension of either maximizing market values of the firms, even at the expenses of having negative effects on stakeholders or making business decisions that benefit other stakeholders at the expense of shareholders.

A recent survey of 500 institutional investors reveals that these investors increasingly consider investment strategies with long term social and environmental factors (Edelman Trust Barometer, 2018). BlackRock CEO, Larry Fink in the January 2019 letter to CEOs states that “every company must not only deliver financial performance, but also show how it makes a positive contribution to society.” (Fink, 2019). This view that public companies should serve a social purpose is also shared by other institutional investors and global advisors (e.g., State Street, 2019; Vanguard, 2018). Under the current business environment of a profit-with-purpose corporate concept (Rezaee, Tsui, Cheng and Zhou, 2019; Rezaee

and Fogarty, 2019), especially in the post-COVID-19 era, management has two options: (1) investing in activities to have positive impacts on society and the environment (II strategy), which requires allocation of resources to ESG initiatives that could otherwise be used to generate value for shareholders; or (2) avoiding operating activities that could have a negative impact on society and the environment (SRI strategy) without unnecessary usage of scarce resources. Thus, we posit that II and SRI investment strategies that are intended to create social and environmental impacts can have implications for investors by affecting shareholder wealth in the long term. Given that the shareholder primacy concept is still prevailing as public companies are under significant pressure to produce near-term returns for shareholders, we posit that II and SRI investment strategies are associated with negative and positive returns respectively and we have the following two hypotheses in alternative forms.

HYPOTHESIS 1A. Excess stock returns are negatively associated with corporate impact investing (II) after controlling for economic performance.

HYPOTHESIS 1B: Excess stock returns are positively related to corporate socially responsible investing (SRI) after controlling for economic performance.

III. Sample Selection and Variable Construction

A. Sample Selection

Our initial sample starts with companies included in the MSCI KLD database for year 1991 to 2015 with a sample size of 39,054. The number of firms included in the dataset varies from 397 firms in 1991 to 2,250 firms in 2015. We use the number of strengths in different areas to proxy for II corporate investment strategy and the number on concerns (multiplied by -1) as proxies of SRI strategy. We then calculate economic performance using data from Compustat and the Center for Research in Security

Prices (CRSP), which has three components – operating efficiency, growth opportunities and research efforts. Unfortunately, not all firm year observations could be match with data from Compustat and CRSP. The final dataset has size of 21,884 firm year observations, after eliminating observations with missing control variables.

B. Variables Construction

1. Economic Performance

Economic performance is a multi-dimensional measure that captures managerial decisions as well as market measures relevant to operations and growth and thus reflects both short-term and long-term profitability and investment for future growth. These variables are common in prior studies in determining corporate values.⁸ Collectively, we include seven different financial statement and market variables - (1) return on equity for the current year (ROE); (2) sales scaled by total assets (SALES); (3) sales growth scaled by total assets (SALESGR); (4) ratio of market to book value of equity (MVBV); (5) Tobin's Q (TOBINSQ); (6) research and development expenses scaled by total assets (RD); and (7) a dummy variable that represents the dividends (DIVIDOMS) – as a proxy for economic performance⁹ (Ng and Rezaee, 2015). Although the construction of ECON is not without challenges, we argue that the variable could still be recognized as a good proxy for the general concept of economic performance.

2. Investment Strategies of II and SRI

This study uses the provisions included in the MSCI KLD database to construct corporate investment strategy variables. There are seven categories of provisions in the MSCI KLD database: (1) Community; (2) Corporate Governance; (3) Diversity; (4) Employee Relations; (5) Environment; (6) Human Rights and (7) Product. We group all the strengths and concerns (except product) separately into two indexes – MSCISTR and MSCICON – to construct II and SRI variables. In addition, we follow prior studies (Ng and Rezaee, 2015) and group community, diversity, employment relation, and human rights into the social category (SOCSTR and SOCCON) to highlight the corporate investment strategies that are related to the social dimension of sustainability. Similarly, we use provisions in the governance

(GOVSTR, GOVCON) (environment (ENVSTR, ENVCON)) category as a proxy of governance (environment) investment strategies. We measure II using the number of strength provisions (ENVSTR, SOCSTR, GOVSTR and MSCISTR) capture sustainability strengths. On the other hand, we use the number of concerns multiplied by (-1) (ENVCON, SOCCON, GOVCON and MSCICON) to capture the lack of concerns as a proxy for SRI. Appendix A shows how we map MSCI KLD data into six categories of II and SRI.

[Insert Appendix A Here]

3. Market Performance

We use three different stock return variables to capture the market performance of stocks. First, we use the actual return to capture stock performance. In order to test the robustness of our conclusion, we also use excess returns and abnormal returns¹⁰ as alternative measures of stock performance. Stock returns are calculated as the buy-and-hold returns for the stock during the fiscal year of the firms. We use stock returns to represent how the market evaluates different investment strategies. We define stock performance using these definitions because commonly accepted definitions of II and SRI are investments that create social or environmental impacts while also providing a return of principal, with additional returns ranging from zero to the market rate. Excess returns are therefore defined as the difference between actual and risk-free returns. Abnormal returns, on the other hand, are defined as the difference between actual and market returns. We made these choices because although some funds are willing to accept lower returns for good sustainability performance, these funds still are obliged to have minimal returns. It is common practice for the firms to use risk free rate or market returns as their reference, so we use two benchmark returns (Risk free rate (R_f) and market return (R_m)) to test this assumption.

4. Control Variables

Control variables include firm size, leverage, profitability, operating cash flows and market beta. Variable definitions are given in Appendix B. We select these control variables based on two selection

criteria. There should be prior studies that show these variables affect stock returns in significant manner while these variables should not be correlated to our key test variables in significant ways. For example, prior studies (e.g. Schwert, 1983; Fama and French, 1995) have shown that firm size is a key determinant of stock returns. Profitability and operating cash flows are also key determinants of stock returns (e.g., Ball and Brown, 1968; Dechow, 1994; Ball, Gerakos and Linnainmaa, 2016). There is a vast literature discussing the role of market beta as the key determinant of stock returns (Black, 1993) for an in-depth discussion.

[Insert Appendix B Here]

IV. Methodology and Results

A. Descriptive Statistics

Descriptive statistics for variables used in this study are given in Table 1 Panel A. Average values stock returns and excess returns (Ret, ExRet and AbRet) are modest and reasonable (17.39%, 15.54% and 6.95% respectively). In terms of investment strategy, MSCISTR (proxy for II) has 1st and 99th percentiles of 1 and 12 respectively and has a mean value of 1.53 while MSCICON (proxy for SRI) has 1st and 99th percentiles of -1 to -9. These statistics show that there are large degrees of variability for these variables. The cases, unfortunately, are not the same for corporate investment strategies that are derived from E, S and G components of sustainability separately. For example, ENVSTR (proxies for II strategy in the area of environmental sustainability) are mostly zero, with a 99th percentile statistics of 4, which translate to about two hundred firms out of a sample of more than 20,000 observations have adopted II strategy in terms of environmental sustainability. This is the key shortcoming of the data and results should be interpreted with care. However, analyses of different components of sustainability is only an additional test for our study.

Panels B1 and B2 of Table 1 report descriptive statistics of top and bottom 30% subsamples according to MSCI. First, comparison between Panel B1 and B2 shows that companies with high MSCI KLD index are also having higher economics performance (mean value of 0.1318 versus 0.1033), which confirms our conjecture the sustainability performance and economic performance are related in a

complex setting and should be taken into account simultaneously when analyzing the relationship.

Second, we can see that variability in terms of different proxies of corporate investment strategies are much higher in these subsamples. For example, ENVSTR has a mean of 0.6848 in Panel B1 while the 1st and 99th percentile statistics are 1 and 15 respectively. Variability is therefore not an issue in these settings. Panel C of Table 1 reports the correlations amongst the variables. Correlations between different tests and control variables are modest and multi-collinearly should not be a problem.

[Insert Table 1 about here]

B. Seemingly Unrelated Regressions (SURs)

Campbell (2007) highlights the importance of taking into account the possible complex relationships among different constructs when investigating the matter, as prior studies tend to examine how corporate social behavior affect financial performance and seldom vice versa. We believe that the relationships between stock returns, economic performance, II and SRI are complex and endogenous, and have to be captured by a system of linear equations. To confirm this claim, we conduct Breusch and Pagan (1979) tests and find that the residuals from the ordinary least squares (OLS) regressions are not independent. In order to address this issue, this study uses seemingly unrelated regressions (SURs) (equation 1A, 1B, 1C and 1D) to capture the complex relationship between stock returns, economic performance, II and SRI strategies. There are four equations in this set of SURs. The first equation (1A) is our key regression and our key test variables include MSCISTR and MSCICON, which represent how the market prices II and SRI strategies respectively, after controlling for economic performance (ECON). Equations 1B to 1D capture the relationship between ECON, II and SRI strategies in a simultaneous manner. Since corporations tend to have limited resources, II and SRI strategies also mean that there are less resources for economic sustainability investment. Equation 1B controls for the possible impacts that II and SRI strategies may have on ECON, while equations 1C and 1D capture how ECON may also affect II and SRI strategies. Control variables include size (LNMVE), leverage (LEV), profitability (DLOSS),

operating cash flows (OCF) and risk (BETA), which are also common in models of stock returns. At the same time, we also include firm and year fixed effects in the regressions:

$$(Ret/ExRet/AbRet = \alpha + \beta_1 ECON + \beta_2 MSCISTR + \beta_3 MSCICON + \beta_4 LNMVE + \beta_5 LEV + \beta_6 DLOSS + \beta_7 OCF + \beta_8 BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon) \quad (1A)$$

$$(ECON = \alpha + \beta_1 MSCISTR + \beta_2 MSCICON + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon) \quad (1B)$$

$$(MSCISTR = \alpha + \beta_1 ECON + \beta_2 LNMVE + \beta_3 LEV + \beta_4 DLOSS + \beta_5 OCF + \beta_6 BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon) \quad (1C)$$

$$(MSCICON = \alpha + \beta_1 ECON + \beta_2 LNMVE + \beta_3 LEV + \beta_4 DLOSS + \beta_5 OCF + \beta_6 BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon) \quad (1D)$$

where

Ret	= Actual stock returns during fiscal year;
ExRet	= Excess stock returns (Ret – R _f) during fiscal year;
AbRet	= Abnormal stock returns (Ret – R _M) during fiscal year;
ECON	= Economic Performance (average of GR, OP and RES);
MSCISTR	= Number of sustainability strengths for year t;
MSCICON	= Number of sustainability concerns for year t times (-1);
LNMVE	= Size: natural log of market value of equity;
LEV	= Ratio of total debt to asset during beginning of the period;
DLOSS	= Loss Dummy;
OCF	= Ratio of operation cash flow to asset during beginning of the period;
BETA	= Market model beta;

Ind F.E. = Industry Fixed Effect;

Year F.E. = Year Fixed Effect.

C. Results

Results for equations 1A-1D are given in Table 2. The left panel reports the three versions of equation (1A). Results are similar for the three different versions of stock returns. First, ECON is a key determinant of stock returns (coefficients are between 0.36 and 0.37) while the coefficients for MSCISTR and MSCICON, which represent the pricing of II and SRI strategies, are relatively small (coefficients are between -0.02 and 0.01). The impacts of economic performance are also relatively more significant (T-Stat are between 34.05 and 34.43). Interestingly, results also show that the coefficients for MSCISTR are consistently negative and significant while the coefficients of MSCICON are significantly positive. In other words, these results show that the market is pricing ECON positively while the impact of ECON is far more important than that for II and SRI strategies. The market is treating economic performance ECON as the key determinant of market values, while II and SRI strategies only affect stock returns in relatively small magnitudes. Although the magnitudes are comparatively smaller, results show that the market is pricing SRI positively, while II is associated with lower returns. These results are consistent with our conjecture that “doing-good” is negatively associated with stock returns. At the same time, coefficients for control variables are also consistent with prior literature.

Results on the right panel also show the complex relationship between economic performance and investment strategies (II, SRI). The negative relationship between economic performance and MSCISTR highlights the fact that II is likely to induce a negative impact on ECON, probably due to competition for limited corporate resources. These results are consistent with our assumption that II requires additional resources, while these resources could be used to improve economic performance. At the same time, the positive relationship between economic performance and MSCICON shows that SRI has a positive impact on stock returns and that the positive relationship is likely to be induced by stronger

economic performance. The remaining two equations are also consistent with our conjecture that economic performance and investment strategies are competing for the same corporate resources in the case of II, while SRI strategies may improve economic performance by providing a better environment to conduct business operations.

[Insert Table 2 about here]

D. Additional Tests

This section provides additional tests that are related to our main research question of whether II and SRI strategies are associated with stock performance. In the first subsection, we examine how the importance of II and SRI strategies changes over time. We then examine how the different components of II and SRI, namely the E, S and G components of sustainability, are related to stock returns. Since the resources needed and parties involved, are likely to be different for these elements, their impacts on stock performance should be different. Next, we explore the impact of availability of corporate resources and existence of institutional ownership on the pricing of corporate investment strategies. We posit that when corporations have abundant assets, they are more likely to allocate resources for II and SRI strategies. We also explore the impact of institutional investors on the pricing of II and SRI strategies. Since investments made by institutional investors are highly transparent and these investors are the main driver of movement towards sustainability (CFA Institute, 2018; Fink, 2019), we posit that corporate investment strategies are related to the levels of institutional ownership. We find that stock returns are affected by corporate investment strategies, rather than affecting these strategies.

1. Trend Analysis

As discussed in section 2, investors have started to pay attention to non-financial ESG sustainability performance and it has direct effects on corporate investment strategies (II and SRI). As more and more investors are paying attention to these investment strategies, their impacts on stock returns should be increasing over time. We investigate the trends of these relationships by introducing a trend variable (TREND) to the system of equations in prior sections. In this set of simultaneous regressions, the

trend variable interacts with the key test variables (ECON, MSCISTR, and MSCICON) and the coefficients of the interaction terms show whether the relationships are getting stronger over time as tested in the following regression models.

$$\begin{aligned}
 (Ret/ExRet/AbRet = & \alpha + \beta_1ECON + \beta_2MSCISTR + \beta_3MSCICON + \beta_4TREND + \\
 & \beta_5ECON \times TREND + \beta_6MSCISTR \times TREND + \beta_7MSCICON \times TREND + \beta_8LNMVE + \beta_9LEV + \\
 & \beta_{10}DLOSS + \beta_{11}OCF + \beta_{12}BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon)
 \end{aligned}
 \tag{2A}$$

$$\begin{aligned}
 (ECON = & \alpha + \beta_1MSCISTR + \beta_2MSCICON + \beta_3TREND + \beta_4MSCISTR \times TREND + \\
 & \beta_5MSCICON \times TREND + \beta_6LNMVE + \beta_7LEV + \beta_8DLOSS + \beta_9OCF + \beta_{10}BETA + \sum Ind F.E. + \\
 & \sum Year F.E. + \varepsilon)
 \end{aligned}
 \tag{2B}$$

$$\begin{aligned}
 (MSCISTR = & \alpha + \beta_1ECON + \beta_2TREND + \beta_3ECON \times TREND + \beta_4LNMVE + \beta_5LEV + \beta_6DLOSS + \\
 & \beta_7OCF + \beta_8BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon)
 \end{aligned}
 \tag{2C}$$

$$\begin{aligned}
 (MSCICON = & \alpha + \beta_1ECON + \beta_2TREND + \beta_3ECON \times TREND + \beta_4LNMVE + \beta_5LEV + \beta_6DLOSS + \\
 & \beta_7OCF + \beta_8BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon)
 \end{aligned}
 \tag{2D}$$

The results of the above regression models are presented in Table 3. As shown in Table 3, the coefficient for the interaction term between ECON and TREND is significantly negative for all types of stock returns. These results show that although economic performance is an important determinant of stock returns (the coefficients of ECON are 0.55), the importance of economic performance is decreasing slowly over time (coefficient of ECON \times TREND is only -0.01). The coefficient for MSCISTR (MSCICON) is negative (positive) and the coefficients of the interaction terms with TREND are both

positive and significant (significant at 10% and 5% respectively), which show that both II and SRI strategies are associated with increasing additional positive returns over time. In other words, stock returns are related to both II and SRI strategies in a positive manner as the market is increasingly paying attention to corporate investment strategies over time.

[Insert Table 3 about here]

2. Investment strategies related to E, S and G separately

In the previous section, we use MSCISTR and MSCICON to proxy for II and SRI strategies. Both MSCISTR and MSCICON include elements that are related to the environmental (E), social (S), and governance (G) dimensions of sustainability. However, the nature of investment strategies related to E, S, and G should be completely different and depending on the characteristics of each dimension, these investment strategies should affect stock returns differently. First, II and SRI strategies that are related to the environment dimension of sustainability could be important. On one hand, corporations that follow II strategies could be investing substantially in its respective areas and these huge corporate investments could have negative effects on stock returns. On the other hand, corporations that follow SRI strategies could be only trying to avoid disastrous circumstances, while they could be benefiting from having strong environmental sustainability. Therefore, we expect II and SRI strategies that are related to environmental dimension of sustainability to have a significant impact on stock returns.

In terms of the social dimension of sustainability, investment strategies should have completely different impacts on stock returns. II strategies with respect to the social dimension of sustainability require the allocation of significant amount of additional resources, and therefore would be negatively related to stock returns. Social SRI strategies, on the other hand, may not benefit the corporations in a significant manner, since the associated effect may not directly translate to profits or benefits. Finally, investment strategies regarding governance sustainability could affect stock performance in different ways. II strategies with respect to governance sustainability are often related to new corporate policies and do not commonly require substantial additional investment and resources, and therefore their impacts on stock returns should be minimal. SRI strategies related to governance sustainability however, could

directly benefit the firms in several positive ways, since the companies may make better decisions and operate more efficiently when the firms have less governance concerns.

We use the system of equations (1) with different test variables to investigate the investment strategies that are related to the E, S, and G dimensions of sustainability and the results are reported in Table 4. Panel A reports results with respect to the environmental dimension of sustainability, while panel B (C) reports results for the social (governance) dimension of sustainability.

[Insert Table 4 about here]

The results in Table 4 confirm our conjecture about market pricing of corporate investment strategies with respect to the E, S, and G dimensions of sustainability. According to Panel A, II (SRI) strategies with respect to the environmental dimension of sustainability are priced negatively (positively) by the market. Coefficients for ENVSTR (ENVCON) are negative (positive) and significant at 1% (10%) level of significance. These results show that the market is negatively pricing investment strategies that are associated with pro-active improvement in the environment, which could be due to additional resource allocation to the environmental initiatives. However, the capital market positively pricing investment strategies that avoid substantial negative effects on the environment, like meeting minimum requirements in industrial wastage disposal by avoiding legal liabilities related to pollution.

Panel B reports the results when test variables are SOCSTR and SOCCON. Coefficients for SOCSTR are significant (at 1%) and negative while the coefficients for SOCCON are not significant in all three settings. These results show that II strategies, with respect to the social dimension of sustainability, have a negative impact on stock returns while social SRI strategies do not significantly impact stock returns. Finally, Panel C presents the results for investment strategies with respect to the governance dimension of sustainability and the results are the exact opposite of those in the case of social dimension of sustainability. The coefficients for GOVSTR are not significant but coefficients for GOVCON are positive and significant with 1% significance in all three settings. These results show that

the market is not penalizing II strategies respective to the governance dimension of sustainability, probably because strong governance sustainability improves financial performance without requiring additional investment and thus governance SRI strategies are going to produce positive effects on stock performance. These results are also consistent with those of prior research (e.g., Gompers, Ishii, and Metrick, 2003) that find a positive link between corporate governance measures and abnormal stock returns.

3. Impact of Availability of Resources on the Pricing of Corporate Investment Strategy

Investment strategies often require the use of corporate resources (Stein, 1997; Kraatz and Zajac, 2001). Although companies may have different corporate investment strategies, the investment strategies cannot be carried out when the companies have limited resources. In this section, we investigate the effect of corporate resources, proxied by the amount of corporate assets, on the relationship between corporate investment strategies (II, SRI) and stock returns.

We separate our main sample into high and low total assets subsamples by taking the top and bottom 30% of the sample ranked based on total assets. We apply equations 1A-1D to the subsamples differently and the results are reported in Table 5. The results for high (low) asset subsamples are presented in Panel A (B). Coefficients for MSCISTR are negative and significant (at 1% significance) in all cases of stock returns in Panel A while all of the coefficients for MSCISTR are not significant in Panel B. Coefficients for MSCICON are also not significant in all settings in the two panels. These results show that the market is more likely to penalize II strategies when the corporations have abundant resources. For firms with abundant resources, the market could be anticipating additional investment to enhance economic performance and therefore the market negatively prices II strategies. II strategies could be seen as misappropriation of assets by the market for these firms. This may not be a problem for small firms and therefore, the results for MSCISTR disappear in Panel B. The SRI strategies also do not affect the stock returns of large or small firms.

[Insert Table 5 about here]

We are also interested in whether available resources have an impact on the trend of these investment strategies by applying equation 2A-2D to the subsamples of high and low total assets and the results are reported in Table 6. Similar to Table 5, Panel A (B) reports the results for large (small) total assets subsamples. Results in this table extend the arguments in Table 5. First, although large firms do not value SRI investment strategies, results show that there is trend of investors paying increasing attention to SRI (the coefficient for $MSCICON \times TREND$ is positive and significant at 10% level). These results, on one hand, show that market does not price II strategies positively and these results suggest that companies should invest in activities that improve corporate performance. Results also confirm our conjecture that firms are increasingly paying attention to both II and SRI over time. Second, for firms with abundant resources, results in Panel A show that there is an increasing trend of positive pricing of II strategies over time (the coefficients of $MSCI \times TREND$ are positive and significant in all settings). The situation, however, is different when corporate resources are low (Panel B). Although the market is positively pricing II (the coefficient for $MSCISTR$ is positive and significant at 5% level), the trend is diminishing over time (the coefficient for $MSCISTR \times TREND$ is negative and significant at 5% level). In other words, the market is paying less attention to II strategies for small firms over time as these investment strategies are less likely to have large impacts for firms with limited resources.

[Insert Table 6 about here]

4. Impact of Institutional Ownership on the Pricing of Investment Strategies

Recently, institutional investors and financial advisors (e.g., BlackRock, State Street, Glass Lewis, Vanguard) have started to select companies' stocks based on their sustainable long-term investment strategies and ESG factors (Rezaee and Fogarty, 2019). These institutional investors including mutual funds are usually, and particularly, interested in firms that have specific investment strategies other than profit-making activities. Anecdotal evidence suggests these fund managers tend to select stocks based on how corporate managers make investments. For example, Impact America Fund¹¹ is a social investment fund that invests in the health and wellness, fintech, education, essential services, and financial inclusion sector, which focuses on tech solutions serving underserved, low-income communities.

Investment decisions of these fund managers suggest (e.g., State Street, 2019; Vanguard, 2018; Fink, 2019) that the relationship between corporate investment strategies (II, SRI) and stock performance is stronger when institutional ownership is high.

Table 7 presents the results after controlling for institutional ownerships. Panel A (B) reports the results for equations 1A-1D for firms with high (low) institutional ownership¹². Economic performance is still the key determinant of stock returns, both when institutional ownership is high or low, but the effect tends to be significantly higher when institutional ownership is lower (0.22-0.24 for high institutional ownership versus 0.41-0.43 for low institutional ownership). This suggests that institutional investors are paying less attention to economic performance when making investment decisions. The coefficients for MSCICON are all positive and significant in Panel A, which translate to the fact that when institutional ownership is high, SRI strategies are positively rewarded. However, coefficients for MSCISTR are all negative, which show that II strategies are negatively compensated. These results show that although II strategies are negatively priced by the market, as they are negatively affecting corporate profitability, institutional investors tend to value SRI strategies more.

Results are, however, different in Panel B. Only coefficients for MSCISTR are negative while coefficients for MSCICON are not significant. In the case of low institutional investor ownership (a substitute for high individual investor ownership), the market seems to penalize II strategies, while SRI strategies are not really rewarded. Individual investors tend not to understand the benefits associated with SRI strategies and these strategies do not induce positive stock returns. When we compare the magnitudes of the coefficients for MSCISTR, the coefficients are only -0.01 in magnitude in Panel A while they are -0.02 in Panel B. These results further show that individual investors do not value SRI while they penalize the company even more when the companies follow II strategies. In summary, results presented in Table 7 show that when institutional ownership is high, the market tends to reward SRI strategies more and penalize II strategies less, which is consistent with our conjecture that institutional ownership affects the way the market rewards investment strategies.

[Insert Table 7 about Here]

For completeness, we also conduct the trend analyses for high and low institutional ownership and results are presented in Table 8. Panel A (B) of Table 8 reports the results for high (low) institutional ownership subsamples. First, Panel A reports that the coefficients for $ECON \times TREND$ are not significant in all settings and these results show that the importance of economic performance does not change over time when institutional ownership is high. However, the same coefficient is significantly negative for all dependent variables when institutional ownership is low (Panel B). Results in Panel A and B together show that individual investors are focusing less on economic performance as time goes by while institutional investors have not changed their emphasis on economic performance over time. This may not be surprising, since the media is increasingly reporting corporate decisions regarding engagements in social and environmental activities. When institutional investors' ownership is high, the coefficients for $MSCISTR \times TREND$ are significantly negative when dependent variables are AbRet (-0.001 significant at 10%) and ExRet (-0.04 significant at 1%), but the same coefficient is significantly positive (0.002 significant at 10%) when the dependent variable is Ret. These differences could stem from the different benchmarks used to calculate stock performance. When stock performance is proxied by actual return (Ret), results show that in this case, the negative impact of II strategies is weakening over time and this is because the benchmark is zero return.

The negative effect of stock performance with respect to II strategies are weakening, as the improvement in stock performance is larger than zero over time. The cases are different when the benchmarks are risk-free returns and market returns when stock performance is proxied by excess (ExRet) or abnormal (AbRet) returns. The negative effect of II strategies are strengthening over time when benchmark returns are risk-free and market returns. Taken together, the improvements in returns over time, that are due to II strategies, are positive but these returns could be more than zero but less than risk-free or market returns. At the same time, the coefficients of $MSCICON \times TREND$ are not significant in all models in Panel A, which means that there is no change in the pricing of SRI investment strategies over time.

[Insert Table 8 about Here]

Results in Panel B are significantly different from those in Panel A. First, coefficients of $ECON \times TREND$ are negative and significant in all settings, which means that the importance of economic performance in determining stock returns is decreasing over time when institutional ownership is low, but the magnitude of these decreasing effects are relatively low (coefficients of $ECON \times TREND$ are all - 0.01). The coefficients of both $MSCISTR \times TREND$ and $MSCICON \times TREND$ are not significant, which show that there is no change in the pricing of investment strategies over time when institutional ownership is low. Combining the results in both Panel A and B, we can see that institutional ownership is a key determinant of the pricing of investment strategies that are related to other stakeholders and the importance of II has changed significantly over time when institutional ownership is high. Simultaneously, there is no change in the effect of SRI over time when institutional ownership is high. In summary, institutional investors favor firms that are making SRI, and their positive pricing of these investment strategies has not changed over time. However, institutional investors do not reward II unambiguously and they penalize stock by having slightly lower returns. However, there is no trend associated with the pricing of investment strategies when institutional ownership is low.

V. Conclusion

This study examines the relationship between two different corporate investment strategies and stock performance, after controlling for economic performance, which includes corporate operational efficiency, growth opportunities and research efforts. Economic performance is still the key driver of stock returns, while the choices of levels of II and SRI strategies are left with managers. We define impact investment (II), which is a proxy of “doing good” corporate investment strategy, and socially responsible investment (SRI), which is a proxy of “not doing bad” corporate investment strategy, using the existence of sustainability strengths and absence of sustainability concerns as proxies respectively. Firms following II strategies are willing to compromise profit-maximizing activities by investing directly in activities that benefit other stakeholders. Firms that pursue SRI strategies are also willing to forgo profit-seeking activities which may hurt other stakeholders, but they are not actively involved in activities that benefit stakeholders. We find that stock returns tend to be marginally lower (higher) for firms that follow II (SRI)

strategies. We also show that stock returns that are associated with II and SRI strategies are significant, but the magnitudes are relatively small when compared to those induced by economic performance. As a result, shareholder returns would not be significantly diminished even if managers have decided to pursue II. Since the negative effect of lower stock returns are only marginal for II strategies, whether managers should focus on economic gain and ignore their impacts on stakeholders are left as choices of individual corporate managers.

We also find the impact of II and SRI are increasing over time and this trend shows that the increasing attention paid to non-financial ESG sustainability has driven managers to consider the benefits of stakeholders when making investment decisions. When the impact of ESG components of E, S, and G dimensions of sustainability are analyzed separately, the relationships between investment strategies and stock performance are significantly different. Both II and SRI strategies related to the environmental dimension of sustainability have significant impacts on stock returns. For the social (governance) dimension of sustainability, only the II (SRI) strategy has negative (positive) impact on stock returns. We interpret that these differences mainly stem from the different ways that these investment strategies affect shareholders in both the short and long run. Finally, we show that both corporate resources availability and institutional ownership are key determinants of the importance of II and SRI strategies. Firms with more resources are more likely to be penalized for pursuing II. Also, firms with high (low) institutional ownership tend to reward (ignore) SRI.

Conclusions in this study are subjected to a number of caveats. Although results in this study show that the impacts of II and SRI strategies on stock returns are significant but small, we have not taken into account exogenous effects that could have been induced by the respective II and SRI strategies. These effects include sentiment and marketing effects. First, the II and SRI strategies may affect the sentiment of investors. As shown in section 5, institutional investors with special investment themes are more likely to invest in firms that have sound II and SRI strategies. However, Barkemeyer et al. (2014) show that sustainability reports are related to impression management rather than accountability after performing a

sentiment analysis on CEO statements of corporate sustainability reports. This shows that the impact of II and SRI strategies on stock performance could depend on investor sentiment.

Second, as II and SRI strategies increasingly attract the attention of investors, they can also increase corporate exposure in social media. Solomon et al. (2014) show that fund holdings with high past returns attract extra flows, but only if these stocks were recently featured in the media. This finding motivates firms to engage in II and SRI strategies in order to increase their media exposure, even if these investment strategies do not have substantial impact on stock returns. Future research should therefore pay attention to sentiment and marketing effects when analyzing corporate investment strategies that are relevant to non-financial ESG sustainability investment.

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Appendix A
KLD Dimensions, Attributes, and Proxies for II and SRI Investing Strategies

KLD Dimensions/ Categories ^a	KLD Attributes as Proxies for II Investment Strategy (Positive CSR/ESG Ratings) ^a	KLD Attributes as Proxies for SRI Investing Strategy (Negative CSR/ESG Ratings)
Community	<ul style="list-style-type: none"> • Charitable giving • Innovative giving • Support for housing • Support for education • Strong indigenous people relations • Volunteer programs 	<ul style="list-style-type: none"> • Investment controversies • Negative economic impact • Poor indigenous people relations • Tax disputes • Investment controversies
Diversity	<ul style="list-style-type: none"> • CEO (female, minority, etc.) • Promotion policies committed to women, minorities, disabled, and LGBT • Diverse board of directors • Work/life benefits • Women and minority contracting • Employment for the disabled • Gay and lesbian policies • Strong union relations 	<ul style="list-style-type: none"> • Affirmative action controversies • Non-representation of women, minorities, disabled, and LGBT • Lack of diversity on the board of director
Employee Relations	<ul style="list-style-type: none"> • No-layoff policy • Cash profit sharing • Employee involvement • Strong retirement benefits • Strong health and safety program 	<ul style="list-style-type: none"> • Poor union relations • Health and safety concerns • Major workforce reductions • Significantly underfunded pension or inadequate retirement benefits
Environment	<ul style="list-style-type: none"> • Beneficial products and services • Pollution prevention • Recycling • Clean energy • Communications • Maintain property, plant and equipment above average environmental performance 	<ul style="list-style-type: none"> • Hazardous waste • Regulatory problems • Ozone depleting chemicals • Substantial emissions • Agricultural chemicals • Climate change
Human Rights	<ul style="list-style-type: none"> • Positive social record in South Africa • Strong indigenous people relations • Labor rights initiatives 	<ul style="list-style-type: none"> • Operations in certain countries with unrest • Labor rights concerns • Poor indigenous people relations

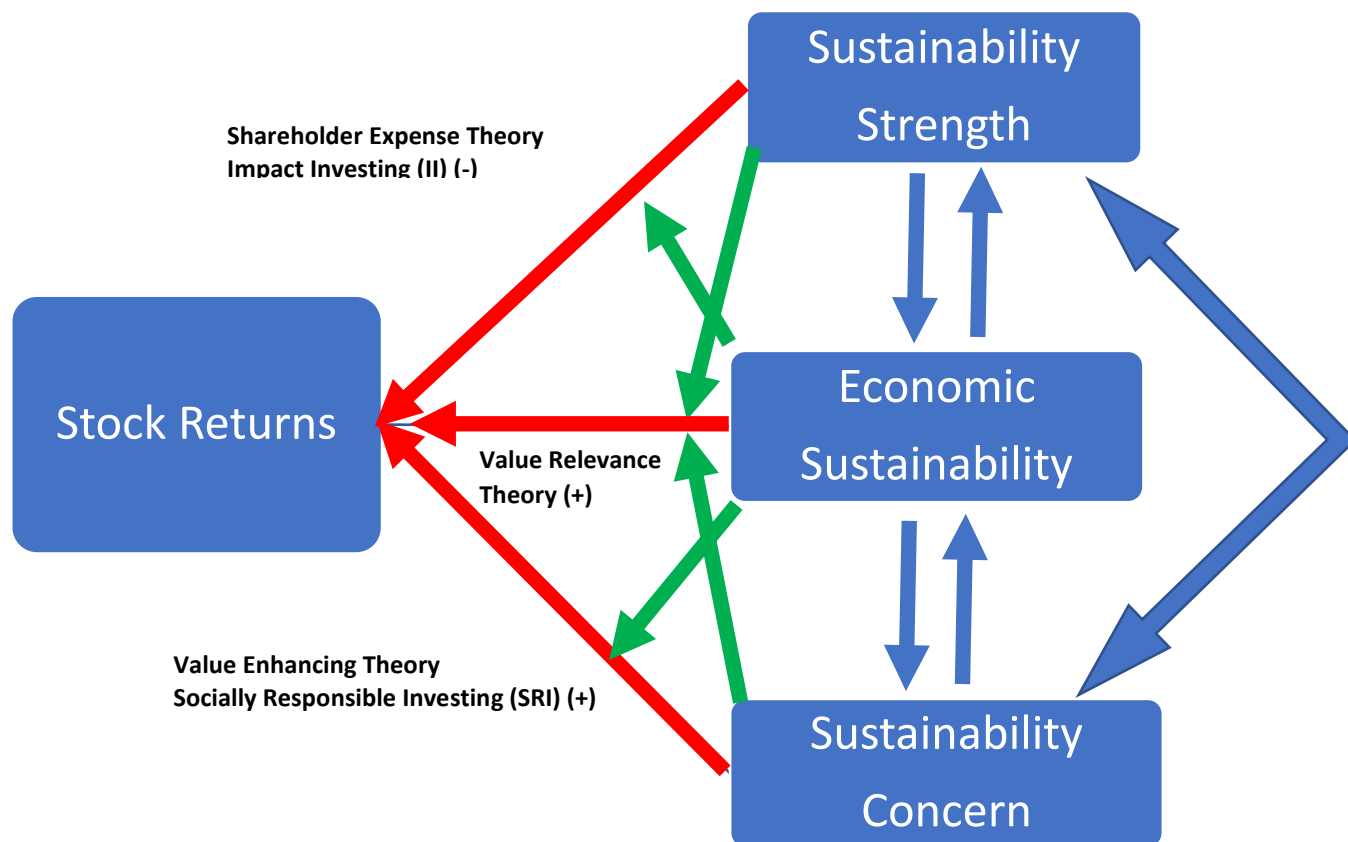
KLD Dimensions/ Categories ^a	KLD Attributes as Proxies for II Investment Strategy (Positive CSR/ESG Ratings) ^a	KLD Attributes as Proxies for SRI Investing Strategy (Negative CSR/ESG Ratings)
Governance	<ul style="list-style-type: none"> • Limited compensation • Ownership of strong governance firms • Transparency / strong reported • Political accountability • 	<ul style="list-style-type: none"> • High compensation • Ownership of poor governance firms • Accounting problems • Transparency / weak reporting • Political accountability

^a KLD is an independent rating agency specializing in ESG sustainability performance assessment. KLD generates ESG performance data in seven categories. KLD provides sustainability data for the largest 3,000 U.S. companies. KLD data are gathered from regulatory filings, corporate disclosures, inquiries of corporate executives, the media, and networks. This study uses the MSCI KLD Research and Analytics (KLD) database to measure impact investing (II) and socially responsible investing (SRI) investment strategies. KLD analysts perform an annual assessment of many positive attributes (strengths) and negative attributes (concerns) in seven social dimensions: community relations, diversity, employee relations, environment, product quality and safety, governance and human rights. We use all categories except product quality category that relates to the economic financial sustainability. The full list of categories/dimensions and attributes rated by KLD can be found at <https://wrds-www.wharton.upenn.edu/pages/support/manuals-and-overviews/msci/>.

Appendix B
Variable Definitions

Variable	Definitions
Ret _t	t year Nominal Returns – Buy and hold stock returns over the following t years
ExRet _t	t year Excess Returns – Buy and hold stock returns minus buy and hold risk free returns over the following t years
AbRet _t	t year Abnormal Return– Buy and hold stock returns minus buy and hold market returns over the following t years
ECON	Economic Sustainability Performance
MSCI	MSCI KLD sustainability performance Index
MSCISTR	MSCI KLD sustainability strength Index
MSCICON	MSCI KLD sustainability concerns Index multiple by -1
ENV	MSCI Environmental sustainability performance Index
ENVSTR	MSCI Environmental sustainability strength Index
ENVCON	MSCI Environmental sustainability concerns Index multiple by -1
SOC	MSCI social sustainability performance Index
SOCSTR	MSCI social sustainability strength Index
SOCCON	MSCI social sustainability concerns Index multiple by -1
GOV	MSCI governance sustainability performance Index
GOVSTR	MSCI governance sustainability strength Index
GOVCON	MSCI governance sustainability concerns Index multiple by -1
TREND	TREND variable: equals fiscal year minus 1990
LNMVE	Size: natural log of market value of equity
LEV	Ratio of total debt to asset during beginning of the period
DLOSS	Loss Dummy:
OCF	Ratio of operation cash flow to asset during beginning of the period
BETA	Market Model Beta
INSTOWN	Institutional Ownership during fiscal year end.
Firm F.E.	Firm Fixed Effects
Year F.E.	Year Fixed Effects

Figure 1
II and SRI Model



Red Arrows: main effects

Green Arrows: interactive effects

Blue Arrows: effects amongst sustainability strength and concerns, as economic sustainability

TABLE 1
Descriptive Statistics

Panel A: Full Sample (N=21844)

	Mean	P1	Q1	Median	Q3	P99	StdDev
Ret	0.1739	-0.7195	-0.1248	0.1068	0.3682	1.9799	0.5259
ExRet	0.1554	-0.7413	-0.1463	0.0886	0.3489	1.9748	0.5274
AbRet	0.0695	-0.6964	-0.2044	0.0002	0.2373	1.7502	0.4774
ECON	0.1510	-0.7240	-0.2622	0.0883	0.4462	1.8685	0.5558
MSCI	-0.1208	-6	-1	0	1	8	2.4500
MSCISTR	1.5374	0	0	1	2	12	2.3990
MSCICON	-1.6582	-9	-2	-1	0	0	1.8415
ENV	0.0589	-3	0	0	0	3	0.8284
ENVSTR	0.2763	0	0	0	0	4	0.7162
ENVCON	-0.2174	-3	0	0	0	0	0.6598
SOC	0.1085	-3	-1	0	1	7	1.8875
SOCSTR	1.0327	0	0	0	1	8	1.7366
SOCCON	-0.9242	-4	-1	-1	0	0	0.9988
GOV	-0.2046	-2	-1	0	0	1	0.6613
GOVSTR	0.1364	0	0	0	0	1	0.3648
GOVCON	-0.3410	-2	-1	0	0	0	0.5475
LMV	7.3947	4.3313	6.2003	7.2308	8.3943	11.6322	1.6039
LEV	0.2144	0	0.0181	0.1840	0.3270	0.9168	0.2071
DLOSS	0.2034	0	0	0	0	1	0.4026
OCF	0.1021	-0.4542	0.0605	0.1087	0.1630	0.3973	0.1307
BETA	1.2040	0.2474	0.8673	1.1494	1.4902	2.5700	0.4968

Panel B1: High MSCI (N= 6624)

	Mean	P1	Q1	Median	Q3	P99	StdDev
Ret	0.1608	-0.6999	-0.1022	0.1038	0.3272	1.7541	0.4810
ExRet	0.1403	-0.7271	-0.1244	0.0874	0.3085	1.7421	0.4820
AbRet	0.0532	-0.6805	-0.1907	-0.0039	0.2005	1.5877	0.4381
ECON	0.1318	-0.7319	-0.2847	0.0378	0.4164	1.9565	0.5761
MSCI	2.5548	1	1	2	3	11	2.2211
MSCISTR	3.6611	1	2	3	5	15	3.0261
MSCICON	-1.1063	-8	-2	-1	0	0	1.6068
ENV	0.5091	-1	0	0	1	4	1.0162
ENVSTR	0.6848	0	0	0	1	4	1.0658
ENVCON	-0.1757	-3	0	0	0	0	0.5797
SOC	1.9875	-1	1	1	3	8	1.9665
SOCSTR	2.4872	0	1	2	3	10	2.2280
SOCCON	-0.4997	-4	-1	0	0	0	0.8119
GOV	-0.0071	-2	0	0	0	2	0.6760
GOVSTR	0.2615	0	0	0	0	2	0.4858
GOVCON	-0.2686	-2	0	0	0	0	0.4954
LNME	8.0490	4.5999	6.6610	7.9697	9.3219	11.9167	1.7548
LEV	0.2157	0	0.0488	0.1959	0.3242	0.8303	0.1899
DLOSS	0.1550	0	0	0	0	1	0.3620
OCF	0.1196	-0.3265	0.0739	0.1204	0.1725	0.3877	0.1121
BETA	1.1209	0.1710	0.7906	1.0632	1.3845	2.5440	0.4938

Panel B2: Low MSCI (N=5426)

	Mean	P1	Q1	Median	Q3	P99	StdDev
Ret	0.1743	-0.7435	-0.1453	0.1110	0.3840	2.0559	0.5446
ExRet	0.1563	-0.7548	-0.1641	0.0903	0.3654	2.0550	0.5465
AbRet	0.0792	-0.7069	-0.2051	0.0101	0.2559	1.7987	0.4936
ECON	0.1033	-0.7279	-0.2969	0.0568	0.4057	1.6232	0.5200
MSCI	-2.8220	-7	-3	-2	-2	-2	1.2187
MSCISTR	0.5422	0	0	0	1	7	1.2741
MSCICON	-3.3642	-11	-4	-3	-2	-2	1.9676
ENV	-0.3793	-4	0	0	0	1	0.8686
ENVSTR	0.1015	0	0	0	0	2	0.3681
ENVCON	-0.4808	-4	-1	0	0	0	0.9560
SOC	-1.5182	-4	-2	-2	-1	2	1.0658
SOCSTR	0.3745	0	0	0	0	5	0.9776
SOCCON	-1.8927	-5	-2	-2	-1	0	0.9900
GOV	-0.6086	-2	-1	-1	0	1	0.6658
GOVSTR	0.0394	0	0	0	0	1	0.2066
GOVCON	-0.6480	-2	-1	-1	0	0	0.6445
LNME	7.2042	4.1710	6.0432	7.1003	8.1874	11.4093	1.5770
LEV	0.2231	0	0.0229	0.1984	0.3385	0.9072	0.2069
DLOSS	0.2217	0	0	0	0	1	0.4154
OCF	0.0933	-0.4543	0.0532	0.0997	0.1536	0.4066	0.1325
BETA	1.2536	0.2883	0.9190	1.2150	1.5479	2.5721	0.4960

Panel C: Correlation matrix (N=21844)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1)Ret	N/A	1***	0.94***	0.23***	-0.03***	0.03***	-0.03***	0.02**	-0.03***	0	0	0.07***	0.09***	-0.01	-0.11***	0.1***	0.05***
(2)ExRet	1***	N/A	0.94***	0.23***	-0.03***	0.03***	-0.02***	0.02***	-0.03***	0	-0.01	0.07***	0.08***	-0.01	-0.1***	0.1***	0.06***
(3)AbRet	0.88***	0.88***	N/A	0.24***	-0.03***	0.01*	-0.03***	0.02**	-0.03***	-0.01**	0	0.03***	0.08***	0	-0.1***	0.11***	0.04***
(4)ECON	0.18***	0.18***	0.19***	N/A	-0.12***	0.16***	-0.14***	0.22***	-0.09***	0.08***	-0.03***	0.04***	-0.02**	-0.11***	-0.01	0.12***	0.12***
(5)MSCISTR	-0.01*	-0.02***	-0.01	-0.12***	N/A	-0.36***	0.69***	-0.31***	0.94***	-0.15***	0.39***	-0.22***	0.54***	0.05***	-0.11***	0.11***	-0.15***
(5)MSCICON	0.02**	0.02***	-0.01	0.13***	-0.15***	N/A	-0.25***	0.66***	-0.34***	0.78***	-0.13***	0.58***	-0.36***	-0.07***	0.04***	-0.03***	0.05***
(7)ENVSTR	0	0	-0.01	-0.18***	0.55***	-0.15***	N/A	-0.28***	0.46***	-0.12***	0.22***	-0.1***	0.41***	0.09***	-0.1***	0.06***	-0.11***
(8)ENVCON	-0.01	0	-0.01	0.26***	-0.22***	0.45***	-0.27***	N/A	-0.28***	0.29***	-0.12***	0.17***	-0.33***	-0.11***	0.06***	-0.03***	0.08***
(9)SOCSTR	-0.01*	-0.02***	0	-0.09***	0.88***	-0.15***	0.34***	-0.19***	N/A	-0.13***	0.23***	-0.25***	0.53***	0.03***	-0.1***	0.11***	-0.15***
(10)SOCCON	0	0	-0.01	0.06***	0	0.8***	-0.05***	0.19***	0.02***	N/A	-0.12***	0.25***	-0.09***	0	-0.01**	0.02***	-0.05***
(11)GOVSTR	-0.01*	-0.01**	-0.01	-0.03***	0.35***	-0.06***	0.15***	-0.07***	0.11***	-0.1***	N/A	0.01*	0.05***	-0.05***	-0.03***	0.03***	-0.01*
(12)GOVCON	0.07***	0.07***	0.02***	0.03***	-0.18***	0.57***	-0.09***	0.13***	-0.22***	0.21***	0.04***	N/A	-0.29***	-0.02***	0.03***	-0.06***	0.02***
(13)LNMVE	0.17***	0.16***	0.17***	-0.07***	0.45***	-0.22***	0.36***	-0.3***	0.45***	0.01*	-0.01**	-0.27***	N/A	0.17***	-0.29***	0.28***	-0.16***
(14)LEV	0	0	0	-0.22***	0.08***	-0.08***	0.14***	-0.18***	0.07***	0.01	-0.06***	-0.04***	0.25***	N/A	-0.01**	-0.02***	-0.06***
(15)DLOSS	-0.18***	-0.18***	-0.18***	0	-0.11***	0.02***	-0.1***	0.07***	-0.09***	-0.03***	-0.03***	0.04***	-0.3***	-0.05***	N/A	-0.5***	0.23***
(16)OCF	0.17***	0.17***	0.19***	0.21***	0.12***	0	0.05***	0	0.12***	0.05***	0.02**	-0.05***	0.29***	-0.08***	-0.47***	N/A	-0.14***
(17)BETA	0.01	0.02***	-0.01	0.13***	-0.15***	-0.01	-0.11***	0.06***	-0.15***	-0.08***	-0.01	0.01*	-0.18***	-0.1***	0.22***	-0.15***	N/A

Pearson (Spearman) correlation above (below) diagonal. ***, ** and, * indicate significance at a p-value of less than the 1% level, 5% level, and 10% level, respectively.

Table 2
Systematic Relationship between Stock Returns, Economic Performance
and Sustainability Strength and Concerns

$$Ret_t/ExRet_t/AbRet_t = \alpha + \beta_1 ECON + \beta_2 MSCISTR + \beta_3 MSCICON + \beta_4 LNMVE + \beta_5 LEV + \beta_6 DLOSS + \beta_7 OCF + \beta_8 BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon$$

$$ECON = \alpha + \beta_1 MSCISTR + \beta_2 MSCICON + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon$$

$$MSCISTR = \alpha + \beta_1 ECON + \beta_2 MSCICON + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon$$

$$MSCICON = \alpha + \beta_1 ECON + \beta_2 MSCISTR + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon$$

Panel A: One Year Return (t=1)

Dep Var.	AbRet _t	ExRet _t	Ret _t	ECON	MSCISTR	MSCICON
INTERCEPT	-0.2280*** (-4.32)	-0.0159 (-0.30)	0.0410 (0.76)	-0.6821*** (-11.99)	-3.8143*** (-17.00)	1.1205*** (6.55)
ECON	0.2229*** (35.59)	0.2250*** (35.22)	0.2251*** (35.24)		-0.7230*** (-27.19)	0.4892*** (24.23)
MSCISTR	-0.0141*** (-8.93)	-0.0145*** (-9.01)	-0.0145*** (-9.02)	-0.0460*** (-27.19)		-0.2097*** (-41.73)
MSCICON	0.0060*** (2.87)	0.0061*** (2.86)	0.0061*** (2.87)	0.0542*** (24.23)	-0.3652*** (-41.73)	
LN MVE	0.0421*** (15.59)	0.0439*** (15.93)	0.0439*** (15.95)	0.0522*** (17.91)	0.6822*** (66.23)	-0.3168*** (-38.14)
LEV	0.0348** (2.20)	0.0348** (2.16)	0.0348** (2.16)	-0.0339** (-1.98)	-0.3439*** (-5.07)	-0.0961* (-1.87)
DLOSS	-0.1088*** (-11.62)	-0.1144*** (-11.99)	-0.1145*** (-12.00)	0.0404*** (3.99)	0.2438*** (6.08)	-0.2164*** (-7.13)
OCF	0.0458 (1.54)	0.0390 (1.28)	0.0388 (1.28)	0.9094*** (28.81)	0.4113*** (3.22)	0.6239*** (6.46)
BETA	0.0444*** (6.19)	0.0501*** (6.84)	0.0500*** (6.83)	0.1370*** (17.79)	-0.2287*** (-7.44)	-0.0124 (-0.53)
Ind. F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	21843	21843	21843	21843	21843	21843
Adj. R²	0.137515374	0.264921055	0.260685359	0.253612792	0.370524664	0.386572185
F-Value	47.43***	105.96***	103.69***	101.29***	174.74***	187.01***

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and, * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Panel B: Three Year Return (t=3)

Dep Var.	AbRet _t	ExRet _t	Ret _t	ECON	MSCISTR	MSCICON
INTERCEPT	0.2537** (2.39)	0.7207*** (6.75)	0.8483*** (7.95)	-0.6946*** (-11.81)	-3.9780*** (-17.03)	1.1433*** (6.47)
ECON	0.1991*** (15.64)	0.1971*** (15.38)	0.1972*** (15.39)		-0.7132*** (-25.47)	0.5001*** (23.73)
MSCISTR	-0.0134*** (-4.21)	-0.0133*** (-4.14)	-0.0133*** (-4.16)	-0.0447*** (-25.47)		-0.2134*** (-41.06)
MSCICON	0.0042 (0.99)	0.0041 (0.96)	0.0041 (0.96)	0.0554*** (23.73)	-0.3778*** (-41.06)	
LN MVE	0.0215*** (3.90)	0.0211*** (3.79)	0.0212*** (3.81)	0.0519*** (16.96)	0.6952*** (63.93)	-0.3184*** (-36.57)
LEV	0.2072*** (6.37)	0.2079*** (6.34)	0.2079*** (6.34)	-0.0453** (-2.51)	-0.3518*** (-4.87)	-0.0900* (-1.66)
DLOSS	-0.1697*** (-8.77)	-0.1741*** (-8.94)	-0.1744*** (-8.95)	0.0389*** (3.62)	0.2602*** (6.06)	-0.2055*** (-6.37)
OCF	0.4967*** (8.22)	0.4937*** (8.11)	0.4933*** (8.11)	0.8991*** (27.33)	0.4115*** (3.07)	0.6535*** (6.49)
BETA	-0.0345** (-2.35)	-0.0322** (-2.18)	-0.0322** (-2.17)	0.1353*** (16.70)	-0.2358*** (-7.24)	-0.0223 (-0.91)
Ind. F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	20049	20049	20049	20049	20049	20049
Adj. R²	0.073352327	0.174409511	0.165601599	0.2549198	0.379039756	0.392974081
F-Value	22.16***	57.47***	54.05***	93.69***	166.37***	176.39***

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and, * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Panel C: Five Year Return (t=5)

Dep Var.	AbRet _t	ExRet _t	Ret _t	ECON	MSCISTR	MSCICON
INTERCEPT	0.4175** (2.14)	1.3163*** (6.69)	1.5517*** (7.89)	-0.6515*** (-10.85)	-4.0445*** (-15.34)	1.4395*** (7.24)
ECON	0.2416*** (9.46)	0.2408*** (9.36)	0.2411*** (9.37)		-0.7398*** (-21.47)	0.5641*** (21.83)
MSCISTR	-0.0036 (-0.63)	-0.0031 (-0.53)	-0.0032 (-0.55)	-0.0379*** (-21.47)		-0.2078*** (-35.98)
MSCICON	-0.0033 (-0.43)	-0.0031 (-0.40)	-0.0031 (-0.40)	0.0514*** (21.83)	-0.3694*** (-35.98)	
LN MVE	-0.0180* (-1.70)	-0.0184* (-1.73)	-0.0182* (-1.71)	0.0434*** (13.33)	0.7259*** (56.72)	-0.3670*** (-36.22)
LEV	0.4152*** (6.46)	0.4115*** (6.35)	0.4115*** (6.35)	-0.1022*** (-5.16)	-0.4203*** (-4.80)	-0.1116* (-1.70)
DLOSS	-0.2856*** (-7.52)	-0.2949*** (-7.71)	-0.2952*** (-7.72)	0.0203* (1.73)	0.2704*** (5.24)	-0.2157*** (-5.57)
OCF	1.0080*** (8.45)	0.9896*** (8.23)	0.9889*** (8.22)	0.9640*** (26.85)	0.4230*** (2.60)	0.8234*** (6.78)
BETA	0.0462* (1.68)	0.0527* (1.90)	0.0528* (1.90)	0.1357*** (16.15)	-0.2804*** (-7.50)	-0.0338 (-1.20)
Ind. F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	16220	16220	16220	16220	16220	16220
Adj. R²	0.06466121	0.17155648	0.16485522	0.27577907	0.37987554	0.3760149
F-Value	16.15***	46.39***	44.26***	85.60***	137.10***	134.89***

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and, * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Table 3
Systematic Relationship between Stock Returns, Economic Performance
and Sustainability Strength and Concerns – The Impact of Economic Performance on Sustainability Strength
and Concerns

$$ExRet = \alpha + \beta_1 ECON + \beta_2 MSCISTR + \beta_3 MSCICON + \beta_4 ECON \times MSCISTR + \beta_5 ECON \times MSCICON + \beta_6 LNMVE + \beta_7 LEV + \beta_8 DLOSS + \beta_9 OCF + \beta_{10} BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$ECON = \alpha + \beta_1 MSCISTR + \beta_2 MSCICON + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon$$

$$MSCISR = \alpha + \beta_1 ECON + \beta_2 MSCICON + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon$$

$$MSCICON = \alpha + \beta_1 ECON + \beta_2 MSCISTR + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Ind F.E. + \sum Year F.E. + \varepsilon$$

Panel A: ExRet = ExRet1

Dep Var.	ExRet1	ECON	MSCISTR	MSCICON
INTERCEPT	-0.0318 (-0.59)	-0.6821*** (-11.99)	-3.8143*** (-17.00)	1.1205*** (6.55)
ECON	0.2474*** (29.39)		-0.7230*** (-27.19)	0.4892*** (24.23)
MSCISTR	-0.0149*** (-9.20)	-0.0460*** (-27.19)		-0.2097*** (-41.73)
MSCICON	0.0076*** (3.54)	0.0542*** (24.23)	-0.3652*** (-41.73)	
ECON × MSCISTR	-0.0134*** (-4.97)			
ECON × MSCICON	0.0026 (0.69)			
LNMVE	0.0445*** (16.16)	0.0522*** (17.91)	0.6822*** (66.23)	-0.3168*** (-38.14)
LEV	0.0358** (2.22)	-0.0339** (-1.98)	-0.3439*** (-5.07)	-0.0961* (-1.87)
DLOSS	-0.1139*** (-11.93)	0.0404*** (3.99)	0.2438*** (6.08)	-0.2164*** (-7.13)
OCF	0.0478 (1.57)	0.9094*** (28.81)	0.4113*** (3.22)	0.6239*** (6.46)
BETA	0.0503*** (6.87)	0.1370*** (17.79)	-0.2287*** (-7.44)	-0.0124 (-0.53)
Ind. F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
N	21843	21843	21843	21843
Adj. R ²	0.265818196	0.253612792	0.370524664	0.386572185
F-Value	103.70***	101.29***	174.74***	187.01***

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Panel B: ExRet = ExRet3

Dep Var.	ExRet3	ECON	MSCISTR	MSCICON
INTERCEPT	0.3083*** (3.18)	-0.5237*** (-9.82)	-3.7675*** (-17.86)	1.5584*** (9.76)
ECON	0.1991*** (11.77)		-0.7103*** (-25.40)	0.5147*** (24.46)
MSCISTR	-0.0135*** (-4.17)	-0.0446*** (24.46)		-0.2134*** (-41.02)
MSCICON	0.0030 (0.70)	0.0571***	-0.3770*** (-41.02)	
ECON × MSCISTR	-0.0081 (-1.52)			
ECON × MSCICON	-0.0027 (-0.36)			
LN MVE	0.0193*** (3.47)	0.0532*** (17.40)	0.6963*** (64.12)	-0.3169*** (-36.38)
LEV	0.2027*** (6.17)	-0.0428** (-2.36)	-0.3487*** (-4.83)	-0.0837 (-1.54)
DLOSS	-0.1781*** (-9.12)	0.0412*** (3.83)	0.2626*** (6.12)	-0.2013*** (-6.23)
OCF	0.5192*** (8.51)	0.8914*** (27.06)	0.4007*** (2.99)	0.6256*** (6.21)
BETA	-0.0300** (-2.02)	0.1347*** (16.61)	-0.2368*** (-7.27)	-0.0254 (-1.04)
Ind. F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
N	20049	20049	20049	20049
Adj. R ²	0.171217553	0.252821704	0.379064122	0.391821268
F-Value	55.50***	93.93***	168.65***	177.93***

Panel C: ExRet = ExRet5

Dep Var.	ExRet5	ECON	MSCISTR	MSCICON
INTERCEPT	1.3033*** (6.61)	-0.6515*** (-10.85)	-4.0445*** (-15.34)	1.4395*** (7.24)
ECON	0.2684*** (7.62)		-0.7398*** (-21.47)	0.5641*** (21.83)
MSCISTR	-0.0037 (-0.64)	-0.0379*** (-21.47)		-0.2078*** (-35.98)
MSCICON	-0.0018 (-0.23)	0.0514*** (21.83)	-0.3694*** (-35.98)	
ECON × MSCISTR	-0.0008 (-0.08)			
ECON × MSCICON	0.0165 (1.17)			
LN MVE	-0.0182* (-1.71)	0.0434*** (13.33)	0.7259*** (56.72)	-0.3670*** (-36.22)
LEV	0.4119*** (6.36)	-0.1022*** (-5.16)	-0.4203*** (-4.80)	-0.1116* (-1.70)
DLOSS	-0.2954*** (-7.72)	0.0203* (1.73)	0.2704*** (5.24)	-0.2157*** (-5.57)
OCF	0.9934*** (8.25)	0.9640*** (26.85)	0.4230*** (2.60)	0.8234*** (6.78)
BETA	0.0518* (1.87)	0.1357*** (16.15)	-0.2804*** (-7.50)	-0.0338 (-1.20)
Ind. F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
N	16220	16220	16220	16220
Adj. R ²	0.171531077	0.275779074	0.379875541	0.376014903
F-Value	45.19***	85.60***	137.10***	134.89***

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Table 4
Trend Analysis of the Relationship between Stock Returns, Economic Performance and Sustainability Strength and Concerns

$$ExRet = \alpha + \beta_1 ECON + \beta_2 MSCISTR + \beta_3 MSCICON + \beta_4 ECON \times TREND + \beta_5 MSCISTR \times TREND + \beta_6 MSCICON \times TREND + \beta_7 LNMVE + \beta_8 LEV + \beta_9 DLOSS + \beta_{10} OCF + \beta_{11} BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$ECON = \alpha + \beta_1 MSCISTR + \beta_2 MSCICON + \beta_3 MSCISTR \times TREND + \beta_4 MSCICON \times TREND + \beta_5 LNMVE + \beta_6 LEV + \beta_7 DLOSS + \beta_8 OCF + \beta_9 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$MSCISTR = \alpha + \beta_1 ECON + \beta_2 ECON \times TREND + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$MSCICON = \alpha + \beta_1 ECON + \beta_2 ECON \times TREND + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

Panel A: ExRet = ExRet1

Dep Var.	ExRet1	ECON	MSCISTR	MSCICON
INTERCEPT	-0.3210*** (-6.64)	-0.4960*** (-9.76)	-3.4988*** (-17.63)	1.7521*** (11.56)
ECON	0.2859*** (15.45)		-0.2912*** (-3.82)	1.1271*** (19.75)
MSCISTR	0.0008 (0.18)	-0.0119** (-2.44)		-0.4122*** (-29.38)
MSCICON	-0.0155*** (-2.67)	0.0987*** (16.49)	0.0368 (1.62)	
ECON × TREND	-0.0037*** (-3.83)		-0.0250*** (-6.21)	-0.0344*** (-11.38)
MSCISTR × TREND	-0.0009*** (-3.38)	-0.0021*** (-7.86)		0.0114*** (15.07)
MSCICON × TREND	0.0014*** (3.83)	-0.0027*** (-7.33)	-0.0271*** (-19.54)	
LNMVE	0.0426*** (15.30)	0.0575*** (19.63)	0.6671*** (65.32)	-0.3238*** (-39.14)
LEV	0.0316* (1.95)	-0.0286* (-1.67)	-0.2882*** (-4.29)	-0.0634 (-1.24)
DLOSS	-0.1181*** (-12.32)	0.0421*** (4.16)	0.2627*** (6.62)	-0.1953*** (-6.48)
OCF	0.0430 (1.40)	0.8916*** (28.23)	0.3646*** (2.87)	0.5060*** (5.25)
BETA	0.0470*** (6.34)	0.1355*** (17.65)	-0.2682*** (-8.75)	-0.0440* (-1.88)
Ind. F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
N	21843	21843	21843	21843
Adj. R²	0.2539	0.2528	0.3824	0.3942
F-Value	98.80***	100.87***	183.72***	193.10***

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Panel B: ExRet = ExRet3

Dep Var.	ExRet3	ECON	MSCISTR	MSCICON
INTERCEPT	0.2326** (2.41)	-0.5131*** (-9.71)	-3.6253*** (-17.45)	1.7778*** (11.29)
ECON	0.2620*** (7.15)	(-2.02)	-0.2531*** (-3.19)	1.1343*** (19.25)
MSCISTR	0.0028 (0.31)	-0.0102** (16.19)	(1.33)	-0.4162*** (-28.75)
MSCICON	-0.0352*** (-3.07)	0.1001***	0.0315	
ECON × TREND	-0.0042** (-2.14)		-0.0267*** (-6.36)	-0.0342*** (-10.96)
MSCISTR × TREND	-0.0008 (-1.62)	-0.0021*** (-7.69)		0.0114*** (14.62)
MSCICON × TREND	0.0025*** (3.51)	-0.0027*** (-7.12)	-0.0276*** (-19.20)	
LN MVE	0.0176*** (3.14)	0.0573*** (18.63)	0.6787*** (63.00)	-0.3250*** (-37.48)
LEV	0.2042*** (6.21)	-0.0396** (-2.19)	-0.2890*** (-4.04)	-0.0556 (-1.03)
DLOSS	-0.1737*** (-8.89)	0.0401*** (3.73)	0.2796*** (6.58)	-0.1820*** (-5.68)
OCF	0.5080*** (8.29)	0.8804*** (26.74)	0.3564*** (2.67)	0.5300*** (5.28)
BETA	-0.0446*** (-2.98)	0.1338*** (16.56)	-0.2804*** (-8.63)	-0.0555** (-2.26)
Ind. F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
N	20049	20049	20049	20049
Adj. R ²	0.1697	0.2541	0.3916	0.4006
F-Value	54.90***	93.27***	175.34***	182.08***

Panel C: ExRet = ExRet5

Dep Var.	ExRet5	ECON	MSCISTR	MSCICON
INTERCEPT	1.3111*** (6.64)	-0.6468*** (-10.78)	-3.2892*** (-12.62)	1.9061*** (9.63)
ECON	0.4654*** (6.50)	(-0.24)	-0.1834* (-1.93)	1.1596*** (16.41)
MSCISTR	-0.0064 (-0.37)	-0.0013 (13.57)	(3.03)	-0.3836*** (-22.98)
MSCICON	-0.0436** (-2.05)	0.0862***	0.0822***	
ECON × TREND	-0.0141*** (-3.36)		-0.0349*** (-6.28)	-0.0360*** (-8.70)
MSCISTR × TREND	0.0002 (0.23)	-0.0022*** (-7.72)		0.0101*** (10.97)
MSCICON × TREND	0.0026** (1.97)	-0.0022*** (-5.52)	-0.0304*** (-18.21)	
LN MVE	-0.0219** (-2.04)	0.0468*** (14.34)	0.7111*** (56.06)	-0.3737*** (-37.02)
LEV	0.4208*** (6.49)	-0.1007*** (-5.09)	-0.3512*** (-4.06)	-0.0830 (-1.27)
DLOSS	-0.2933*** (-7.66)	0.0201* (1.72)	0.2933*** (5.75)	-0.1955*** (-5.07)
OCF	0.9599*** (7.96)	0.9523*** (26.54)	0.3254** (2.02)	0.7228*** (5.96)
BETA	0.0366 (1.30)	0.1324*** (15.75)	-0.3286*** (-8.77)	-0.0684** (-2.41)
Ind. F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
N	16220	16220	16220	16220
Adj. R ²	0.1720	0.2773	0.3952	0.3822
F-Value	45.35***	85.12***	144.22***	136.57***

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Table 5
Systematic Relationship between Stock Returns, Economic Performance
and Environmental, Social and Governance Strengths and Concerns

$$Ret/ExRet/AbRet = \alpha + \beta_1 ECON + \beta_2 ESGSTR + \beta_3 ESGCON + \beta_4 LNMVE + \beta_5 LEV + \beta_6 DLOSS + \beta_7 OCF + \beta_8 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$ECON = \alpha + \beta_1 ESGSTR + \beta_2 ESGCON + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$ESGSTR = \alpha + \beta_1 ECON + \beta_2 LNMVE + \beta_3 LEV + \beta_4 DLOSS + \beta_5 OCF + \beta_6 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$ESGCON = \alpha + \beta_1 ECON + \beta_2 LNMVE + \beta_3 LEV + \beta_4 DLOSS + \beta_5 OCF + \beta_6 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

Panel A: Environmental Strengths and Concerns (ESG = ENV)

Dep Var.	AbRet	ExRet	Ret	ECON	ENVSTR	ENVCON
INTERCEPT	-1.45*** (-7.14)	-1.37*** (-6.56)	-1.32*** (-6.33)	0.75*** (5.33)	0.52** (2.12)	-0.25 (-1.63)
ECON	0.36*** (34.57)	0.38*** (34.91)	0.38*** (35.05)		-0.05*** (-4.32)	0.09*** (11.20)
ENVSTR	-0.02*** (-2.90)	-0.03*** (-4.22)	-0.03*** (-4.53)	-0.02*** (-4.17)		
ENVCON	0.02* (1.76)	0.02* (1.73)	0.02* (1.69)	0.07*** (11.15)		
LNMVE	0.15*** (23.09)	0.14*** (21.24)	0.14*** (20.59)	0.13*** (29.75)	0.09*** (11.86)	-0.04*** (-8.48)
LEV	-0.06** (-2.54)	-0.08*** (-3.04)	-0.08*** (-3.16)	0.28*** (16.27)	0.18*** (6.04)	-0.06*** (-3.37)
DLOSS	-0.06*** (-5.35)	-0.07*** (-6.19)	-0.07*** (-6.30)	-0.09*** (-11.86)	0 (-0.23)	-0.02** (-2.55)
OCF	0.13*** (2.73)	0.12*** (2.60)	0.13*** (2.69)	1.1*** (35.68)	-0.21*** (-3.73)	-0.08** (-2.13)
BETA	0 (0.39)	0.01 (1.50)	0.01 (1.57)	0.12*** (19.89)	-0.06*** (-5.52)	-0.02*** (-2.91)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	21844	21844	21844	21844	21844	21844
Adj. R²	0.1874	0.2983	0.2916	0.7137	0.4784	0.7480
p-Value	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Panel B: Social Strengths and Concerns (ESG = SOC)

Dep Var.	AbRet	ExRet	Ret	ECON	SOCSTR	SOCCON
INTERCEPT	-1.49*** (-7.31)	-1.41*** (-6.76)	-1.37*** (-6.53)	0.66*** (4.70)	-0.89* (-1.88)	0.11 (0.34)
ECON	0.36*** (34.13)	0.37*** (34.41)	0.38*** (34.53)		-0.56*** (-22.91)	0.1*** (5.81)
SOCSTR	-0.02*** (-5.84)	-0.02*** (-6.69)	-0.02*** (-6.90)	-0.05*** (-22.94)		
SOCCON	0.0001 (-0.09)	0.0001 (0.06)	0.0001 (0.14)	0.02*** (5.93)		
LN MVE	0.15*** (23.41)	0.14*** (21.57)	0.14*** (20.92)	0.14*** (31.51)	0.28*** (19.20)	-0.04*** (-4.09)
LEV	-0.06** (-2.56)	-0.08*** (-3.09)	-0.08*** (-3.21)	0.28*** (16.33)	0.27*** (4.73)	-0.02 (-0.45)
DLOSS	-0.06*** (-5.27)	-0.07*** (-6.08)	-0.07*** (-6.18)	-0.09*** (-11.40)	0.05** (2.00)	-0.04** (-2.18)
OCF	0.13*** (2.79)	0.13*** (2.69)	0.13*** (2.78)	1.08*** (35.28)	0.22** (2.09)	0.03 (0.44)
BETA	0 (0.02)	0.01 (1.11)	0.01 (1.19)	0.11*** (18.02)	-0.19*** (-9.40)	-0.07*** (-5.04)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	21844	21844	21844	21844	21844	21844
Adj. R ²	0.1883	0.2991	0.2925	0.7153	0.6677	0.5071
p-Value	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and, * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Panel C: Governance Strengths and Concerns (ESG = GOV)

Dep Var.	AbRet	ExRet	Ret	ECON	GOVSTR	GOVCON
INTERCEPT	-1.49*** (-7.30)	-1.41*** (-6.74)	-1.36*** (-6.51)	0.69*** (4.90)	-0.07 (-0.47)	0.45** (2.34)
ECON	0.36*** (34.50)	0.38*** (34.83)	0.38*** (34.97)		-0.05*** (-6.53)	0.11*** (10.61)
GOVSTR	-0.0001 (-0.24)	-0.0001 (-0.44)	-0.01 (-0.54)	-0.05*** (-7.63)		
GOVCON	0.04*** (4.90)	0.04*** (5.19)	0.04*** (5.24)	0.06*** (11.32)		
LN MVE	0.15*** (23.17)	0.14*** (21.23)	0.14*** (20.55)	0.13*** (29.85)	0.02*** (3.75)	-0.07*** (-11.02)
LEV	-0.07*** (-2.75)	-0.08*** (-3.31)	-0.09*** (-3.44)	0.27*** (15.66)	-0.03 (-1.55)	0.01 (0.57)
DLOSS	-0.06*** (-5.20)	-0.07*** (-6.02)	-0.07*** (-6.13)	-0.09*** (-11.71)	-0.01 (-1.38)	-0.05*** (-4.89)
OCF	0.13*** (2.81)	0.13*** (2.71)	0.13*** (2.81)	1.1*** (35.64)	-0.02 (-0.54)	-0.05 (-1.07)
BETA	0 (0.42)	0.01 (1.57)	0.02* (1.66)	0.12*** (19.77)	0.01 (1.20)	0.01 (1.39)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	21844	21844	21844	21844	21844	21844
Adj. R ²	0.1879	0.2985	0.2917	0.7138	0.2895	0.4443
p-Value	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and, * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Table 6

Systematic Relationship between Stock Returns, Economic Performance and Sustainability Strength and Concerns – The effect of resource availability (Asset Size?)

$$Ret/ExRet/AbRet = \alpha + \beta_1 ECON + \beta_2 MSCISTR + \beta_3 MSCICON + \beta_4 LNMVE + \beta_5 LEV + \beta_6 DLOSS + \beta_7 OCF + \beta_8 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$ECON = \alpha + \beta_1 MSCISTR + \beta_2 MSCICON + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$MSCISTR = \alpha + \beta_1 ECON + \beta_2 LNMVE + \beta_3 LEV + \beta_4 DLOSS + \beta_5 OCF + \beta_6 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$MSCICON = \alpha + \beta_1 ECON + \beta_2 LNMVE + \beta_3 LEV + \beta_4 DLOSS + \beta_5 OCF + \beta_6 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

Panel A: Large firms (High LOGTA)

Dep Var.	Abret	ExRet	Ret	ECON	MSCISTR	MSCICON
INTERCEPT	-1.79*** (-6.87)	-1.6*** (-5.94)	-1.54*** (-5.70)	0.74*** (3.36)	-0.82 (-0.59)	0.9 (0.89)
ECON	0.19*** (12.76)	0.2*** (12.86)	0.2*** (12.87)		-1.27*** (-16.38)	0.74*** (13.09)
MSCISTR	-0.01*** (-4.53)	-0.01*** (-5.73)	-0.01*** (-6.00)	-0.03*** (-15.79)		
MSCICON	0 (0.80)	0 (0.79)	0 (0.81)	0.03*** (12.34)		
LN MVE	0.16*** (16.48)	0.14*** (14.06)	0.13*** (13.48)	0.14*** (17.05)	0.56*** (11.14)	-0.25*** (-6.92)
LEV	0.01 (0.21)	-0.01 (-0.16)	-0.01 (-0.24)	0.37*** (12.38)	1.36*** (7.09)	-0.12 (-0.83)
DLOSS	-0.08*** (-4.84)	-0.09*** (-5.48)	-0.09*** (-5.55)	-0.06*** (-4.31)	0.18** (2.06)	-0.34*** (-5.48)
OCF	0.21** (2.38)	0.26*** (2.87)	0.27*** (2.97)	1.73*** (23.97)	-0.51 (-1.08)	0.07 (0.20)
BETA	0.05*** (3.41)	0.06*** (3.89)	0.06*** (3.95)	0.18*** (14.77)	-0.6*** (-7.81)	-0.1* (-1.71)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	7281	7281	7281	7281	7281	7281
Adj. R ²	0.1357	0.2822	0.2746	0.7148	0.7085	0.7345
p-Value	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Panel B: Small firms (Low LOGTA)

Dep Var.	AbRet	ExRet	Ret	ECON	MSCISTR	MSCICON
INTERCEPT	-2.59*** (-9.20)	-2.66*** (-9.28)	-2.65*** (-9.22)	-1.54*** (-9.62)	0.07 (0.20)	-1.02*** (-2.75)
ECON	0.45*** (19.03)	0.45*** (18.91)	0.45*** (18.95)		0.02 (0.58)	-0.01 (-0.36)
MSCISTR	0.01 (1.17)	0.01 (1.25)	0.01 (1.24)	0 (0.59)		
MSCICON	0 (0.17)	0 (0.15)	0 (0.18)	0 (-0.38)		
LN MVE	0.34*** (20.15)	0.35*** (20.42)	0.35*** (20.34)	0.27*** (30.97)	0.03 (1.39)	0.04* (1.82)
LEV	-0.07 (-1.23)	-0.08 (-1.36)	-0.08 (-1.37)	0.32*** (9.31)	-0.05 (-0.71)	-0.11 (-1.35)
DLOSS	-0.01 (-0.65)	-0.02 (-0.87)	-0.02 (-0.90)	-0.06*** (-4.88)	-0.03 (-0.96)	0.02 (0.63)
OCF	-0.01 (-0.16)	-0.03 (-0.43)	-0.03 (-0.42)	0.67*** (15.90)	0.02 (0.22)	0.1 (1.00)
BETA	-0.08*** (-4.17)	-0.07*** (-3.74)	-0.07*** (-3.75)	0.03*** (2.93)	-0.05** (-2.20)	0 (0.04)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	7281	7281	7281	7281	7281	7281
Adj. R²	0.2672	0.3576	0.3535	0.7247	0.6437	0.5777
p-Value	0.000	0.000	0.000	0.000	0.000	0.000

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and, * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Table 7
Trend Analysis of the Relationship between Stock Returns, Economic Performance and Sustainability Strength and Concerns– The effect of firm size

$$Ret/ExRet/AbRet = \alpha + \beta_1 ECON + \beta_2 MSCISTR + \beta_3 MSCICON + \beta_4 TREND + \beta_5 ECON \times TREND + \beta_6 MSCISTR \times TREND + \beta_7 MSCICON \times TREND + \beta_8 LNMVE + \beta_9 LEV + \beta_{10} DLOSS + \beta_{11} OCF + \beta_{12} BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$ECON = \alpha + \beta_1 MSCISTR + \beta_2 MSCICON + \beta_3 TREND + \beta_4 MSCISTR \times TREND + \beta_5 MSCICON \times TREND + \beta_6 LNMVE + \beta_7 LEV + \beta_8 DLOSS + \beta_9 OCF + \beta_{10} BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$MSCISTR = \alpha + \beta_1 ECON + \beta_2 TREND + \beta_3 ECON \times TREND + \beta_4 LNMVE + \beta_5 LEV + \beta_6 DLOSS + \beta_7 OCF + \beta_8 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$MSCICON = \alpha + \beta_1 ECON + \beta_2 TREND + \beta_3 ECON \times TREND + \beta_4 LNMVE + \beta_5 LEV + \beta_6 DLOSS + \beta_7 OCF + \beta_8 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

Panel A: Large firms (High LOGTA)

Dep Var.	AbRet	ExRet	Ret	ECON	MSCISTR	MSCICON
Intercept	-1.63*** (-6.23)	-1.46*** (-5.46)	-1.4*** (-5.24)	0.77*** (3.48)	-1.12 (-0.81)	1.86* (1.82)
ECON	0.31*** (10.46)	0.31*** (10.31)	0.31*** (10.31)		-1.45*** (-9.52)	1.34*** (11.88)
MSCISTR	-0.02*** (-3.76)	-0.02*** (-3.75)	-0.02*** (-3.75)	-0.04*** (-7.46)		
MSCICON	-0.01 (-1.53)	-0.01 (-1.50)	-0.01 (-1.50)	0.04*** (7.37)		
TREND	-0.02*** (-8.93)	-0.03*** (-14.90)	-0.03*** (-16.12)	0.01** (-2.08)	0.16*** (17.52)	-0.02*** (-3.08)
ECON × TREND	-0.01*** (-4.90)	-0.01*** (-4.71)	-0.01*** (-4.71)		0.02** (2.45)	-0.04*** (-6.34)
MSCISTR × TREND	0.01*** (3.12)	0.01*** (3.17)	0.01*** (3.17)	0.01** (2.09)		
MSCICON × TREND	0.01* (1.79)	0.01* (1.68)	0.01* (1.68)	0.01** (-2.00)		
LN MVE	0.19*** (18.71)	0.2*** (19.19)	0.2*** (19.21)	0.14*** (16.08)	0.18*** (3.28)	-0.22*** (-5.51)
LEV	0.04 (1.06)	0.04 (1.06)	0.04 (1.06)	0.37*** (12.37)	1.05*** (5.56)	-0.01 (-0.07)
DLOSS	-0.07*** (-4.07)	-0.07*** (-4.33)	-0.07*** (-4.33)	-0.06*** (-4.18)	0.07 (0.82)	-0.33*** (-5.23)
OCF	0.11 (1.20)	0.1 (1.12)	0.1 (1.11)	1.72*** (23.79)	0.26 (0.55)	-0.16 (-0.46)
BETA	0.03** (2.17)	0.04** (2.32)	0.04** (2.31)	0.18*** (14.71)	-0.47*** (-6.00)	-0.18*** (-3.14)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	7281	7281	7281	7281	7281	7281
Adj. R²	0.1490	0.3096	0.3067	0.7155	0.7224	0.7364
p-Value	0.000	0.000	0.000	0.000	0.000	0.000

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Panel B: Small firms (Low LOGTA)

Dep Var.	AbRet	ExRet	Ret	ECON	MSCISTR	MSCICON
Intercept	-2.49*** (-8.53)	-2.4*** (-8.05)	-2.34*** (-7.86)	-1.29*** (-7.74)	0.01 (0.02)	-0.71* (-1.84)
ECON	0.99*** (14.97)	1*** (14.84)	1*** (14.85)		0.02 (0.27)	0.09 (1.06)
MSCISTR	0.07** (2.08)	0.07** (2.06)	0.07** (2.05)	0.01 (0.59)		
MSCICON	-0.03 (-0.65)	-0.03 (-0.78)	-0.03 (-0.77)	-0.01 (-0.18)		
TREND	-0.01* (-1.81)	-0.02*** (-3.85)	-0.02*** (-4.36)	-0.01*** (-5.18)	0 (0.68)	-0.02*** (-3.40)
ECON × TREND	-0.03*** (-8.90)	-0.03*** (-8.86)	-0.03*** (-8.86)		0 (-0.03)	-0.01 (-1.48)
MSCISTR × TREND	-0.01* (-1.76)	0.01* (-1.71)	-0.01* (-1.70)	-0.01 (-0.37)		
MSCICON × TREND	0.01 (0.63)	0.01 (0.73)	0.01 (0.72)	-0.01 (-0.04)		
LN MVE	0.36*** (21.47)	0.38*** (22.13)	0.38*** (22.15)	0.28*** (31.55)	0.03 (1.24)	0.06*** (2.60)
LEV	-0.06 (-0.95)	-0.06 (-1.02)	-0.06 (-1.02)	0.32*** (9.43)	-0.06 (-0.74)	-0.09 (-1.18)
DLOSS	-0.01 (-0.39)	-0.01 (-0.51)	-0.01 (-0.50)	-0.06*** (-4.54)	-0.03 (-0.98)	0.02 (0.79)
OCF	-0.01 (-0.07)	-0.03 (-0.38)	-0.03 (-0.38)	0.66*** (15.73)	0.02 (0.22)	0.1 (1.01)
BETA	-0.08*** (-4.47)	-0.07*** (-4.01)	-0.07*** (-4.02)	0.03*** (2.99)	-0.05** (-2.21)	0 (0.04)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	7281	7281	7281	7281	7281	7281
Adj. R²	0.2795	0.3708	0.3676	0.7262	0.6436	0.5787
p-Value	0.000	0.000	0.000	0.000	0.000	0.000

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Table 8

Systematic Relationship between Stock Returns, Economic Performance and Sustainability Strength and Concerns – The effect of institutional ownership

$$Ret/ExRet/AbRet = \alpha + \beta_1 ECON + \beta_2 MSCISTR + \beta_3 MSCICON + \beta_4 LNMVE + \beta_5 LEV + \beta_6 DLOSS + \beta_7 OCF + \beta_8 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$ECON = \alpha + \beta_1 MSCISTR + \beta_2 MSCICON + \beta_3 LNMVE + \beta_4 LEV + \beta_5 DLOSS + \beta_6 OCF + \beta_7 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$MSCISTR = \alpha + \beta_1 ECON + \beta_2 LNMVE + \beta_3 LEV + \beta_4 DLOSS + \beta_5 OCF + \beta_6 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$MSCICON = \alpha + \beta_1 ECON + \beta_2 LNMVE + \beta_3 LEV + \beta_4 DLOSS + \beta_5 OCF + \beta_6 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

Panel A: High Institutional Ownership

Dep Var.	AbRet	ExRet	Ret	ECON	MSCISTR	MSCICON
INTERCEPT	-1.73*** (-6.73)	-1.65*** (-6.66)	-1.73*** (-6.70)	-0.02 (-0.09)	-0.69 (-0.67)	1.16 (1.55)
ECON	0.24*** (11.59)	0.22*** (11.28)	0.24*** (11.58)		-0.62*** (-7.49)	0.52*** (8.78)
MSCISTR	-0.01*** (-3.55)	-0.01*** (-3.62)	-0.01*** (-3.60)	-0.02*** (-7.96)		
MSCICON	0.01* (1.94)	0.01** (2.14)	0.01* (1.94)	0.04*** (9.19)		
LN MVE	0.2*** (15.05)	0.19*** (15.08)	0.2*** (14.98)	0.15*** (15.51)	0.25*** (4.79)	-0.19*** (-4.88)
LEV	0.04 (0.76)	0.05 (1.01)	0.04 (0.76)	0.22*** (6.26)	0.48*** (2.63)	-0.22 (-1.62)
DLOSS	-0.05*** (-2.81)	-0.04** (-2.27)	-0.06*** (-2.84)	-0.05*** (-3.26)	0.01 (0.11)	-0.15*** (-2.59)
OCF	0.06 (0.66)	0.07 (0.72)	0.06 (0.66)	1.08*** (15.43)	0.64* (1.69)	-0.06 (-0.22)
BETA	0.1*** (5.54)	0.09*** (4.97)	0.1*** (5.53)	0.12*** (8.92)	-0.01 (-0.17)	-0.23*** (-4.49)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	4586	4586	4586	4586	4586	4586
Adj. R²	0.1848	0.3556	0.3466	0.7630	0.6698	0.6558
p-Value	0.000	0.000	0.000	0.000	0.000	0.000

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and, * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Panel B: Low Institutional Ownership

Dep Var.	AbRet	ExRet	Ret	ECON	MSCISTR	MSCICON
INTERCEPT	-0.96*** (-4.15)	-0.76*** (-3.24)	-0.71*** (-3.03)	-0.79*** (-5.76)	-2.5*** (-4.08)	1.07** (2.12)
ECON	0.41*** (14.89)	0.43*** (15.23)	0.43*** (15.32)		-0.72*** (-9.83)	0.73*** (12.22)
MSCISTR	-0.02*** (-2.77)	-0.02*** (-3.43)	-0.02*** (-3.58)	-0.03*** (-8.55)		
MSCICON	0.0004 (0.59)	0.01 (0.89)	0.01 (0.94)	0.05*** (11.20)		
LN MVE	0.16*** (9.79)	0.14*** (8.59)	0.13*** (8.21)	0.17*** (18.52)	0.44*** (10.32)	-0.25*** (-7.17)
LEV	-0.14** (-2.14)	-0.18** (-2.56)	-0.18*** (-2.62)	0.32*** (8.13)	0.71*** (3.95)	-0.18 (-1.24)
DLOSS	-0.07** (-2.38)	-0.08** (-2.54)	-0.08*** (-2.58)	-0.12*** (-6.82)	-0.09 (-1.17)	-0.07 (-1.12)
OCF	0.19* (1.69)	0.19 (1.60)	0.2* (1.67)	1*** (15.11)	-0.2 (-0.64)	-0.62** (-2.49)
BETA	-0.03 (-1.14)	-0.02 (-0.87)	-0.02 (-0.83)	0.06*** (4.21)	-0.38*** (-6.50)	0.17*** (3.49)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	11143	11143	11143	11143	11143	11143
Adj. R²	0.2886	0.3611	0.3550	0.7529	0.7142	0.7071
p-Value	0.000	0.000	0.000	0.000	0.000	0.000

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Table 9
Trend Analysis of the Relationship between Stock Returns, Economic Performance and Sustainability Strength and Concerns– The effect of institutional ownership

$$Ret/ExRet/AbRet = \alpha + \beta_1 ECON + \beta_2 MSCISTR + \beta_3 MSCICON + \beta_4 TREND + \beta_5 ECON \times TREND + \beta_6 MSCISTR \times TREND + \beta_7 MSCICON \times TREND + \beta_8 LNMVE + \beta_9 LEV + \beta_{10} DLOSS + \beta_{11} OCF + \beta_{12} BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$ECON = \alpha + \beta_1 MSCISTR + \beta_2 MSCICON + \beta_3 TREND + \beta_4 MSCISTR \times TREND + \beta_5 MSCICON \times TREND + \beta_6 LNMVE + \beta_7 LEV + \beta_8 DLOSS + \beta_9 OCF + \beta_{10} BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$MSCISTR = \alpha + \beta_1 ECON + \beta_2 TREND + \beta_3 ECON \times TREND + \beta_4 LNMVE + \beta_5 LEV + \beta_6 DLOSS + \beta_7 OCF + \beta_8 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

$$MSCICON = \alpha + \beta_1 ECON + \beta_2 TREND + \beta_3 ECON \times TREND + \beta_4 LNMVE + \beta_5 LEV + \beta_6 DLOSS + \beta_7 OCF + \beta_8 BETA + \sum Firm F.E. + \sum Year F.E. + \varepsilon$$

Panel A: High Institutional Ownership

Dep Var.	AbRet	ExRet	Ret	ECON	MSCISTR	MSCICON
Intercept	-1.17*** (-4.32)	-0.97*** (-3.44)	-0.91*** (-3.24)	0.13 (0.59)	-3.2*** (-2.87)	1.17 (1.44)
ECON	0.3*** (5.55)	0.31*** (5.67)	0.31*** (5.65)		-0.59*** (-2.69)	0.66*** (4.14)
MSCISTR	-0.04** (-2.56)	-0.04*** (-2.58)	-0.04*** (-2.59)	-0.04*** (-3.30)		
MSCICON	0.0009 (0.04)	0 (0.00)	0.001 (0.01)	0.05*** (2.94)		
TREND	-0.02*** (-4.35)	-0.04*** (-6.76)	-0.04*** (-7.21)	-0.01* (-1.66)	0.12*** (5.76)	0.001 (0.05)
ECON × TREND	-0.004 (-1.49)	-0.0042 (-1.51)	-0.004 (-1.50)		0.0002 (0.02)	-0.01 (-0.92)
MSCISTR × TREND	-0.001* (1.85)	-0.04*** (1.94)	0.002* (1.94)	0.001 (1.50)		
MSCICON × TREND	0.0005 (0.40)	0 (0.39)	0.0005 (0.38)	-0.001 (-0.76)		
LN MVE	0.21*** (15.76)	0.22*** (16.23)	0.22*** (16.26)	0.16*** (15.54)	0.19*** (3.57)	-0.19*** (-4.70)
LEV	0.05 (1.04)	0.04 (0.78)	0.04 (0.78)	0.22*** (6.25)	0.48*** (2.61)	-0.21 (-1.57)
DLOSS	-0.04** (-2.00)	-0.05** (-2.42)	-0.05** (-2.43)	-0.05*** (-3.16)	-0.01 (-0.16)	-0.15*** (-2.58)
OCF	0.06 (0.64)	0.05 (0.53)	0.05 (0.52)	1.08*** (15.44)	0.67* (1.77)	-0.07 (-0.24)
BETA	0.08*** (4.46)	0.09*** (4.96)	0.09*** (4.95)	0.12*** (8.77)	-0.001 (-0.01)	-0.24*** (-4.57)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	4586	4586	4586	4586	4586	4586
Adj. R²	0.1885	0.3627	0.3548	0.7632	0.6725	0.6557
p-Value	0.000	0.000	0.000	0.000	0.000	0.000

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and, * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

Panel B: Low Institutional Ownership

Dep Var.	AbRet	ExRet	Ret	ECON	MSCISTR	MSCICON
Intercept	-0.87*** (-3.78)	-0.62*** (-2.65)	-0.56** (-2.40)	-0.68*** (-4.96)	-2.75*** (-4.56)	1.15** (2.30)
ECON	0.52*** (10.32)	0.52*** (10.14)	0.52*** (10.15)		-0.5*** (-3.83)	0.91*** (8.42)
MSCISTR	-0.01 (-1.10)	-0.02 (-1.19)	-0.02 (-1.19)	-0.03*** (-3.84)		
MSCICON	-0.01 (-0.57)	-0.01 (-0.60)	-0.01 (-0.60)	0.03*** (3.72)		
TREND	-0.01*** (-4.62)	-0.03*** (-8.04)	-0.03*** (-8.79)	-0.01*** (-7.38)	0.08*** (11.51)	-0.03*** (-4.49)
ECON × TREND	-0.01*** (-3.06)	-0.01*** (-2.92)	-0.01*** (-2.92)		0.0043 (0.55)	-0.02*** (-3.12)
MSCISTR × TREND	0.0003 (0.39)	0.0004 (0.51)	0.0004 (0.51)	0.0007* (1.79)		
MSCICON × TREND	0.0007 (0.73)	0.0007 (0.80)	0.0007 (0.80)	0.0008 (1.46)		
LN MVE	0.2*** (11.20)	0.21*** (11.70)	0.21*** (11.71)	0.2*** (19.96)	0.18*** (3.91)	-0.16*** (-4.10)
LEV	-0.11* (-1.65)	-0.12* (-1.80)	-0.12* (-1.80)	0.34*** (8.54)	0.48*** (2.75)	-0.09 (-0.62)
DLOSS	-0.06** (-2.15)	-0.06** (-2.08)	-0.06** (-2.08)	-0.11*** (-6.26)	-0.13* (-1.65)	-0.07 (-1.02)
OCF	0.15 (1.34)	0.1 (0.90)	0.1 (0.90)	0.94*** (14.23)	-0.01 (-0.03)	-0.65*** (-2.58)
BETA	-0.04* (-1.79)	-0.04* (-1.68)	-0.04* (-1.68)	0.05*** (4.15)	-0.34*** (-5.82)	0.14*** (2.78)
Firm F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
N	11143	11143	11143	11143	11143	11143
Adj. R²	0.2945	0.3749	0.3714	0.7581	0.7248	0.7099
p-Value	0.000	0.000	0.000	0.000	0.000	0.000

Refer Appendix B for variable definitions. T-statistics are shown right below. ***, ** and * indicate significance at a p-value of less than the 1% level (2-tailed), 5% level (2-tailed), and 10% level (2-tailed), respectively.

¹ <https://thegiin.org/impact-investing/>

² <https://www.forbes.com/sites/jaycoengilbert/2017/10/09/putting-the-impact-in-impact-investing-28-funds-building-a-credible-transparent-marketplace/#97fc48b3e5fa>

³ Deloitte (US) also examines the impact of investment strategy for hedge funds and they define impact investing as “the intentional allocation of capital to generate a positive social or environmental impact that can be and is measured.” (<https://www2.deloitte.com/us/en/pages/financial-services/articles/impact-investments-hedge-funds-esg-business.html>) (accessed April 2019)

⁴ One may argue that corporations still need to make investment when pursuing SRI strategy. We understand that corporations may still need to make some kind of investment when pursuing SRI strategy, but the scale would be far less than the case of II strategy (for example, there may be expenses related to re-designing of the operation procedures), and we can safely treat them as immaterial.

⁵ Some studies separate these investment strategies by the natures of the investors that are pursuing the strategies, and they define these investors as Impact First Investors and Financial First Investors. Impact First investors’ primary goal is to achieve a social or environmental impact, with a secondary goal of financial return. Financial First investors’ primary goal, on the other hand, is to achieve a financial return, with a secondary goal of social or environmental impact. Impact First investors may be willing to accept a lower return on their investment or are willing to take on greater risk, while Financial First investors are more likely to meet their financial return requirements.

⁶ <https://www.forbes.com/sites/jaycoengilbert/2017/10/09/putting-the-impact-in-impact-investing-28-funds-building-a-credible-transparent-marketplace/#300e27e3e5fa>

⁷ They define “sin” stocks as publicly traded companies that involve in the production of alcohol, tobacco and gaming.

⁸ For example, Varaiya, Kerin and Weeks (1987) show that firm value depends on profitability and growth. McAlister, Srinivasan and Kim (2007) show that firm’s advertising and research and development (R&D) expenditures create intangible assets that can lower the firm’s systematic risk. Johnson and Pazderka (1993) also find that firm value and R&D expenditure are positively related.

⁹ ECON is calculated as an average of three variables – operation efficiency (OP), growth opportunities (GR) and research efforts (RES). We follow prior studies (e.g. Larcker et al., 2007; Kanagaretnam et al., 2007; Ng and Rezaee, 2015) and apply exploratory principal component analysis (EPCA) to the eight variables (ROE_t , $SALES_t$, $SALESGR_t$, $MVBV_t$, $TOBINSQ_t$, RD_t , AD_t and $DIVIDOMS_t$) and convert economic performance variables into composite factors. Only factors with absolute value of component loading higher than 0.40 and eigenvalues greater than 1 are retained (Larcker et al., 2007). We use a varimax orthogonal rotation to manage the number of variables that have high loadings on each factor and assign names based on the information of the indicators that are relevant to the factor. Following Ng and Rezaee (2015), we assign ROE_t , $SALES_t$ and $SALESGR_t$ together as an operation efficiency factor (OP_t), $TOBINSQ_t$ and $MVBV_t$ together as a growth opportunity factor (GR_t), and RD_t and $DIVIDOMS_t$ together as a research effort factor (RES_t). We then scale these factors so that they have zero means and standard deviations of one. Due to the low correlation between AD_t and other variable, we decide to exclude AD_t and did not include it in any of the factors. We then calculate $ECON_t$ as an average of OP_t , GR_t and RES_t .

¹⁰ Excess returns are defined as stock returns minus risk-free returns, while abnormal returns are defined as stock returns minus market returns. We use these returns as proxies for investment performance because some investment managers use risk free return or market return as benchmarks for them to accept investment strategies.

¹¹ According to the investment approach of Impact America Fund (<http://impactamericafund.com/about/>), they look for investment opportunities that are (a) High growth, early stage companies (post-seed, pre-series A); (b) savvy, scale-obsessed, and socially conscious founders; (c) tech-enabled business models where socioeconomic impact and revenue grow together; (d) demonstrated traction and cultural competence in a \$1B+ market and (e) in the \$250K-\$3M investment range.

¹² The subsample of low institutional ownership also includes firms with zero institutional ownership and therefore it is significantly larger than the high institutional ownership subsample.