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# The Effect of Corporate Social Responsibility on the Profitability of Publicly Traded Firms within the United States

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# **The Effect of Corporate Social Responsibility on the Profitability of Publicly Traded Firms within the United States**

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A thesis presented for the degree of  
Bachelor of Business Administration in Public Accounting  
& Master of Science in Finance



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## **Abstract**

Throughout the late 20th and early 21st centuries, investors have sparked an interest in the social responsibility and sustainability measures of the firms in which they have ownership in. These qualitative factors are measured through the term, “Corporate Social Responsibility,” (CSR). The factors have been quantified using environmental, social and corporate governance (ESG) indices published by mass data houses such as *Bloomberg* and *Thomson Reuters*. This study bridges the gap between the CSR actions taken by firms and the effects, if any, that those actions have on their profitability. By using historical profitability data and CSR rankings produced by *Bloomberg*, this paper examines the relationship between the variations in profitability of a NYSE publicly traded firm between the years 1990 and 2018, and their associated numerical rank on *Bloomberg’s* ESG Disclosure index. This direct connection between profitability and disclosure of sustainability and social governance factors allows the reader to deduce a relationship between investment in CSR and the payoff of this effort on measurable profitability. This study concludes that there is a moderate to strong positive relationship between certain historical profitability metrics and a firm’s ESG Disclosure Score, and that these relationships are most evident within the Technology and Energy industries.

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## **Introduction**

The Financial Times defines Corporate Social Responsibility (CSR) as a “business approach that contributes to sustainable development by delivering economic, social and environmental benefits for all stakeholders.” This movement is aimed at encouraging companies to be more aware of the impact of their businesses on the rest of society, including their own stakeholders and the environment (Financial Times). The definition of CSR, however, does not include the financial implications for a firm that installs CSR policies into its their business model. Despite unknown confirmed financial effects of implementing CSR measures into a business plan, according to the law of a capitalist economy like that of the US, one would expect to observe financial implications to any significant CSR policies.

Though CSR is a more modern topic within accounting and finance, the evolution of the idea of Corporate Social Responsibility began in the early 20th century. With the development of large businesses between 1900 and 1920, Congress passed new laws to moderate the impact of these companies on society. Immediately following World War II, corporate philanthropy paved the way for two of CSR’s most important principles -- stewardship and charity. Through the 1970s, CSR policy was focused on responsiveness, and what organizations could do to survive by utilizing environmental sustainability practices in their business plan. During the 1990s, the concept of CSR evolved into the definition known today, rooted in stakeholder engagement, social regulation, business ethics, and corporate social performance (Evolution).

Corporate Social Responsibility has evolved dramatically in the last decade, as noted by Thomas Bognanno in Forbes magazine (2018). Corporations have gone past funding their social investments only monetarily; many corporations embrace business objectives which have a social impact and demonstrate real value to the company. Trends that have become apparent in regards to CSR policy include the involvement of corporations in social issues and the integration of employees into global marketing campaigns.

Though previous studies have focused on the effects of CSR measures on profit, stock price, and market capitalization, few have noted the effect of these initiatives on profitability measured with analytic ratios like Return on Assets (ROA), Return on Equity (ROE), Return on Invested Capital (ROIC), and the ratio of Enterprise Value to Earnings Before Interest, Tax, Depreciation and Amortization (EV/EBITDA). Profitability and profit cannot be used interchangeably; profit denotes an absolute value defined as income above costs, while profitability is a relative term that measures efficiency and the extent of income and profit relative to the size and other metrics of the firm (Horton).

## **Literature Review**

Corporate Social Responsibility (CSR) is rooted in many platforms, and is implemented for various reasons. Forte (2013) takes the position that the average U.S. citizen expects companies not to only generate profits, but also conduct themselves in an ethically and socially responsible manner. Dedication to CSR enhances community relations and contributes to a favorable public image, which can also manifest itself into

long-term profits. Forte also noted that social responsibility benefits long-term stock prices as the market deems socially responsible firms less risky.

Many corporations are focused on the short-term return of their corporate actions, but this study concludes that CSR implementation will begin to show equal importance in the medium to long-term returns that will come in response to the improvement in consumer image and reputation. Carroll (1991) elaborates on the consumer's role in implementing Corporate Social Responsibility by demonstrating the decisions that management must make when balancing the corporation's responsibility in providing a maximum financial return to shareholders and the newly adopted commitment to stakeholders and the environment. This study notes that there are four kinds of social responsibility which constitute total CSR: economic, legal, ethical, and philanthropic.

While maximizing profits as part of a corporation's economic responsibility, management must also decide which stakeholders merit and should receive consideration in the decision-making process. Carroll creates a CSR pyramid which concludes that the conflict is not "concern for profits" versus "concern for society," but rather that the firm must engage in decisions and actions that simultaneously fulfill all components which constitute CSR. The CSR firm should strive to make a profit, obey the law, be ethical, and be a good corporate citizen. A socially responsible corporation is not one in which there is only concern for legal, ethical, and philanthropic principles, but also one which has a focus on economic responsibility and profit maximization for its shareholders. Clarkson (1995), proposes that social responsibility can be analyzed and

evaluated by using a framework based on the management of a corporation's relationships with its stakeholders rather than by using a model which focuses on corporate social responsibility methodologies and responsiveness. This study distinguished between stakeholder issues and social issues because corporations and their managers manage relationships with their stakeholders and not with society. In a theoretical sense, the economic and social purpose of the corporation is to create and distribute wealth and value to all primary stakeholder groups without favoring one group over another, though stakeholder value are not defined only by increased share price, dividends or profits. According to Business Dictionary, stakeholder value can also manifest itself through minimized cost and waste while improving the quality of its products, enhanced skill and satisfaction of employees, and contributions to the development of the community from which the business draws its resources and sustenance. This study focuses on the equilibrium that must be maintained between stakeholder groups; if the corporation favored one stakeholder group's interests over another, the disfavored group might seek alternatives and potentially withdraw from the entity entirely. This view negates the idea that profit maximization is the primary goal of a business; it reinforces the principle that CSR is based on social responsibility rather than economic responsibility.

If one accepts the legitimacy and the desirability of adopting Corporate Social Responsibility policies, there is value in recognizing and analyzing the results of those policies. The following research focuses on the effect of CSR on stock price and the equity market. Orlitzky (2013) expands on the idea that the CSR movement may, in the

long run, lead to excess market volatility and stock price bubbles. This study challenges the conventional idea that CSR measures increase the present value of a firm's future cash flows and maximize the market value of the socially responsible firm. Though CSR can materialize into benefits as it increases trust between the firm and its stakeholders, because of its inherent costliness, CSR may also reduce current and future firm cash flows. The costs associated with CSR create noise in the stock market because observers cannot infer that CSR will change a firm's underlying economic fundamentals.

It is difficult to determine the true benefits of CSR in the stock and equity markets due to information asymmetry -- the principle that the seller has more information than the buyer. Because of the information disparity, firms may send false market signals about their commitment to CSR and the economic results of their actions. Orlitzky concludes that this noise and information asymmetry associated with CSR may not only lead to excess stock market volatility but also unjustifiably high stock prices of firms that are widely regarded as socially responsible. Investors may begin to invest in companies, not because of their financial performance, but rather because of the initiation of a social program or initiative. For this reason, it might be difficult for an efficient market to determine if a company's increased performance is rooted in true economic upward mobility, or rather a bubble created by information asymmetry which will be proven to be untrue and ineffective in the long-run.

Becchetti and Ciciretti (2008) come to a similar conclusion in that individual "Socially Responsible" stocks have on average significantly lower returns and variance than control sample stocks when controlling for industry effects. The study is based on

the idea that if socially responsible firms underperform a control sample of firms in regards to shareholders' interests, the incentive to adopt CSR will weaken because of loss of competitive position as well as loss of access to a lower cost of capital. They find that the consequence of social responsibility actions is lower performance in terms of shareholders' returns, ultimately rendering these firms more susceptible to takeover.

Lam, Zhang, and Jacob (2015) examine how stock prices are affected within firms which are socially responsible in certain dimensions of Corporate Social Responsibility but are socially irresponsible in other aspects. Their study concluded that these firms, also known as 'Grey' companies, earn an annual abnormal return of up to 3.6% relative to neutral portfolios containing neither socially responsible nor irresponsible firms. The *stakeholder theory* and *investor recognition theory* predict that socially responsible firms have a higher valuation, lower returns and lower risk compared to socially irresponsible firms. The research of these academics adds to the discussion of firms which do not fall within the category of definitively socially responsible versus irresponsible. Their research also determined that the 'Grey' portfolios are overpriced within the market, contributed in whole by both the "community" and "environment" sub-dimensions of CSR, of which the market mis-prices firm's socially ambiguous actions. Prior research on the relationship between Corporate Social Responsibility initiatives and stock price reactions have determined that there may be a positive relationship between being socially responsible and having lower returns despite higher valuation, but this research explains the ambiguity in measuring this relationship in a typical business environment with imperfections.

After analyzing literature focusing on CSR in the equity market, the following scholarly articles emphasize the impact that CSR has on financial performance. Wood and Jones (1995) add to prior research on the *stakeholder theory*, but use this principle to find a relationship between social and financial performance, rather than market value or to determine the cost of capital in the equity market. This study focuses on Wood's (1991) argument that the stakeholders define the norms for corporate behavior; these normal behaviors are acted upon by firms, and they make judgments about these experiences. In prior research, there was a mismatch of variables which are mixed and correlated with a set of stakeholder-related performance variables that are not theoretically linked. Wood and Jones spotlight the mismatch of variables in their research and determine that the relationship between CSR and financial performance is ambiguous because there is no theory to clarify how they should be related, there is no valid measure of CSR, and there is confusion about which stakeholders are represented by which financial measures. Though Wood and Jones came to an inconclusive result on the relationship between CSR and economic performance, they were again able to conclude that there is a connection between social and financial performance when using market-based theory. As such, social performance hurts the company financially, but it cannot yet be proven if the relationship also works positively, in that good social performance would help a company financially.

In a Forbes magazine David Vogel (2008), breaks down the idea that CSR performance will allow firms to gain a competitive advantage by appealing to a growing number of socially and environmentally oriented consumers, investors and employees.

The hard truth, he finds, is that there is little real-world support to back this idea. CSR does not necessarily pay because 'ethical' products are a niche market, and almost all goods and services continue to be purchased on the basis of price, convenience, and quality. Consistent with Lam, Zhang, and Jacob's (2005) study on 'Grey' companies, Vogel found that few firms were consistently responsible or irresponsible across all of their business operations. Vogel concludes on the idea that managers should try to act more responsibly, but not because the market will reward their business or punish their less responsible competitors.

The following empirical studies by Mikolajek-Gocejna (2016) and Nizamuddin (2018) showcase the impact of Corporate Social Responsibility initiatives and programs on corporate financial performance, while utilizing data from 53 studies and results obtained from 16,119 companies. Mikolajek-Gocejna focuses her research on Socially Responsible Investments (SRI), and whether it pays for organizations to concern themselves with social responsibility, and whether there are any trade-offs to sustainable investing. Her conclusion is that the relationship between CSR and corporate financial performance is a positive one. Upon analysis of the 16,119 companies in this study, the result was that 81.1% of the analyzed companies had data supporting that CSR pays -- that there is a positive correlation between CSR and corporate financial performance. Additionally, only 3.1% of the companies analyzed presented results that CSR costs -- that there is a negative correlation between CSR and corporate financial performance. One of the limitations of this study may be the measurement of CSR; it has history of being a subjective variable used to compare to

objective measures of financial performance. Nizamuddin (2018) focused his research on an examination of the various approaches used in a number of empirical studies for measuring Corporate Social Responsibility and Corporate Financial Performance to discover measurement challenges and alternative methods of measurement.

Nizamuddin notes that the difficulties related to measuring CSR can be focused on the fact that CSR is a non-financial variable that is sought out to be quantified in financial performance. Further, in many countries, CSR reporting is not mandatory but voluntary. Nizamuddin concluded that all approaches to CSR performance measures are biased when used to investigate the relationship between CSR and financial performance. One way to remove this bias would be to implement mandatory disclosure of CSR programs and information. This research also breaks down the use of CSR into unidimensional and multidimensional measures. Unidimensional measures have been used in many empirical studies; multidimensional measures have been employed in reputation indices, questionnaire-based surveys, and content analysis. Ultimately each measurement is limited due to the researcher's subjectivity and bias in selecting variables for CSR and selecting companies to analyze.

The explicit disclosure of Corporate Social Responsibility programs and initiatives began internationally, before being established in the United States. Therefore, there has been extensive research conducted on the relationship between socially responsible firms and economic or financial results. Jain, Keneley, and Thomson (2015) expand on international research on Corporate Social Responsibility by evaluating the extent of CSR reporting by banks in Japan, China, Australia, and India. During the

seven-year period from 2005 to 2011, there was no legislative requirement for CSR reporting in these Asia-Pacific countries, but the extent of reporting in each of these countries increased over time, indicating a growing voluntary commitment to CSR activities. Despite concluding that CSR reporting had increased in international nations, the motives did not seem to be economic but rather based on strategic incentives. The European Commission, the governing body of the European Union (EU) responsible for proposing legislation, implementing decisions, and upholding the EU treaties, has published their position on Corporate Social Responsibility throughout the European Union. The European Commission (2017) states that CSR is important to the interest of enterprises by providing benefits to companies in risk management, cost savings, access to capital, customer relations, HR management, and ability to innovate. Additionally, CSR is important for the EU economy, as CSR makes companies more sustainable and innovative, which contributes to a more sustainable economy. The EU has also created their own agenda for action to support CSR, which includes improving and tracking levels of trust in businesses, enhancing market rewards for CSR, as well as better aligning European and global approaches to CSR. It is evident by the European Union's program to implement better Corporate Social Responsibility initiatives that they believe that support of CSR action could improve the economy of the union as a whole, as well as businesses, as demonstrated by their enhancement of market rewards for CSR. To the EU, social responsibility does not seem to be definitively a social program, but also a matter of financial and economic integration. The European CSR Awards were launched in 2012, funded by the European

Commission, to deliver the European CSR Award Scheme for Partnership, Innovation, and Impact. These awards are designed to give higher visibility to CSR excellence and raise global awareness on the positive impact that business can have on society, bring the best European CSR multi-stakeholder projects into focus, enhance the exchange of CSR best practice across Europe, encourage CSR collaboration between enterprises and stakeholders, and finally, create innovative solutions to tackle sustainability issues.

In light of the European CSR Award Scheme, it is evident that the European Union believes in the benefits of CSR not only on society, but also in the economy, and dedicated itself to awarding those businesses and projects that have succeeded in bringing CSR into their trade. From a business and economic standpoint, winning such an award could bring attention to those business recognized in each accolade category. That could bring a new group of consumers and investors to their business. For this reason, the European Union has succeeded in showing their support for Corporate Social Responsibility, as well as attempting to shed light and success onto those businesses who have taken the CSR initiative and integrated it into their business plan.

Marsat and Williams (2011) performed empirical research internationally on the relationship between CSR and market firm valuation, where they distinguish between the financial benefits resulting from ethical behavior and the possible competitive disadvantages that can result when taking externalities into account. Their study separates their empirical observations and results by industry, year, and region, which allows them to further refine their results based on international expectations. Their results conclude that there is a negative relationship between CSR performance and

firm value, as the market considers the costs of CSR programs to exceed the benefits received, though this may not be reflected in the equity asset valuation process.

## **Hypothesis**

Though prior research has studied the influence of Corporate Social Responsibility on profit, cash flow, and market capitalization, there has not been prior literature produced on the effect of CSR measures on the profitability metrics of a firm for the years 1990 (or earliest year recorded) through 2018. Based on the published literature reviewed above, I believe that there may be a strong relationship between measures of Corporate Social Responsibility and historical profitability metrics.

Valuation metrics are comprehensive measures of a company's performance, financial health, and prospects for future earnings. Because valuation metrics typically compare the market's opinion to actual reported earnings or company book value, these metrics reflect the collective opinions of market analysts and investors about the company's future prospects (Schmidt). Each of the valuation metrics analyzed in this study are rooted in earnings. My hypothesis is that they should have a positive correlation with the level of Environmental, Social, and Governance performance that a firm discloses. In this study I use Bloomberg ESG Disclosure Score as the measure of Corporate Social Responsibility, later described in the Methodology section of this paper.

I hypothesize that if a firm discloses that it has implemented policies directly related to Corporate Social Responsibility, the market should respond positively

manifested by increasing the valuation metrics of the firm. A firm's net income measures the after-tax earnings or profit of the firm, so firms with a higher ESG Disclosure Score should have a higher average net income across the period analyzed. Earnings per share also measures the value of the firm on a per share basis, so a higher ESG Disclosure Score as indicated by Bloomberg should translate to a higher metric of earnings per share. Finally, price to cash flow measures the value of a stock's price relative to its operating cash flow per share (Kenton). A higher ESG Disclosure Score should increase the price per share as a measure of the profitability of the firm, so a higher ESG Disclosure Score should be related to a higher Price to Cash Flow ratio for a firm. These theories are summarized in Hypothesis 1.

*Hypothesis 1: A higher ESG Disclosure Score will be significantly correlated with higher valuation related metrics, including Net Income, Earnings per Share (EPS), and Price to Cash Flow.*

If a higher ESG Disclosure Score elevates the public's favorable perception of a firm and thereby increases the earnings of the firm through a rise in sales revenue, then profit metrics that rely on return should also have a positive correlation with the ESG Disclosure Score.

Three metrics that analyze firm profitability are Return on Equity (ROE), Return on Assets (ROA), and Return on Invested Capital (ROIC). Each of these metrics have earnings in their numerator. Both ROE and ROA have net income in their numerator,

once again demonstrating the relationship between an ESG Disclosure Score and the level of income that a firm is able to generate. ROIC, on the other hand, has operating income (adjusted for tax) in its numerator, but also may show a relationship between earnings and an ESG Disclosure Score.

The profit metrics considered here evaluate return, or simply put, the money that is made or lost on an investment (Kenton). If a firm is designated a higher ESG Disclosure Score, I hypothesize that this firm will also have a higher earnings amount in the numerator due to market and consumer perceptions of the firm, and the profitability ratios (ROE, ROA, and ROIC) will be higher as well. For this reason, Hypothesis 2 claims the positive correlation between a higher ESG Disclosure Score and heightened profitability metrics.

*Hypothesis 2: A higher ESG Disclosure Score will be significantly correlated with higher profit metrics, including Return on Equity (ROE), Return on Assets (ROA), and Return on Invested Capital (ROIC).*

The final metric analyzed in this study is Enterprise Value (EV)/Earnings before Interest, Tax, Depreciation, and Amortization (EBITDA). Though this metric is considered to also be a valuation variable, I have chosen to analyze this measure separately because of its importance in measuring a firm's value and financial performance. This measure bridges the gap between the first two categories of metrics considered: valuation and profitability. The numerator of Enterprise Value is a company's total valuation and is a better alternative to market capitalization because it

adds components including debt, preferred interest, minority interest, and excludes cash and cash equivalents. The denominator of EBITDA is an important representation of an organization's financial performance and can be used to analyze the profitability of an organization as it eliminates the effects of financing and accounting decisions (Wall Street Mojo). EV/EBITDA includes both the value of the firm, as well as its profitability, so one can hypothesize that a higher ESG Disclosure Score would also be related to an increase in the EV/EBITDA multiple due to heightened perception from both consumers and investors. Should investors and consumers have an affinity towards firms with higher ESG Disclosure Scores, this will translate to a higher EV/EBITDA measure as investor opinions are reflected in the numerator and consumer opinions are reflected in the denominator. Hypothesis 3 can be summarized below.

*Hypothesis 3: A higher ESG Disclosure Score will be significantly correlated with higher Enterprise Value (EV) to Earnings before Interest, Tax, Depreciation, and Amortization (EBITDA) ratio.*

In summary, I will evaluate the relationship between historical profitability metrics and Bloomberg's ESG Disclosure Score in order to provide for a correlation between the two variables. Based upon the premise of Corporate Social Responsibility and its impact on both investors and the general consumer, this study hypothesizes that the relationship between ESG Disclosure Score and profitability metrics will be a positive one. In addition, this study concludes that the positive relationship will also be a strong

one, as the two metrics should closely align to the goals of both investors and consumers.

## **Methodology**

In order to examine the relationship or correlation between Corporate Social Responsibility measures and historical profitability metrics, a sample was needed to obtain data on assorted industries. The following industries were evaluated: Technology, Energy, Consumer Non-Durables, Transportation, and Consumer Services. Within the five industries, ten firms were chosen for analysis. There were two criteria for a firm to be included in the sample: (1) the company's stock must be publicly traded on the NYSE, and (2) Bloomberg publishes the ESG Disclosure Score data for the firm. The firms selected for this study are listed in Exhibit 1 of the Appendix.

Bloomberg's ESG Disclosure Score was used to quantify each firm's participation in Corporate Social Responsibility policies. Bloomberg monitors the environmental, social, and governance (ESG) performance of all public companies, regardless of whether they issue a sustainability report. The analysts at Bloomberg then compile all annual reports, sustainability reports, press releases, and third-party research regarding each firm and create a single variable: an ESG Disclosure Score. This score allows investors access to each firm's transparency, risks, and opportunities. On a scale from 0 to 100, Bloomberg analysts rank each firm's transparency of ESG efforts on the basis of 800 different metrics such as energy & emissions, waste data, women on the board, independent directors, and workforce accidents, among others (FrameworkESG).

Exhibit 2 to the Appendix presents the 2018 ESG Disclosure Score published by Bloomberg for all firms analyzed in this study. This data was collected through the use of Bloomberg Terminal.

In order to establish a relationship between historical profitability metrics and a firm's published Bloomberg ESG Disclosure Score, I compiled the following historical measures: Net Income, Earnings per Share (EPS), Price to Cash Flow, Return on Equity (ROE), Return on Assets (ROA), Return on Invested Capital (ROIC), and Enterprise Value to Earnings before Interest, Tax, Depreciation, and Amortization (EV/EBITDA).

Historical metrics were sampled for the period from 1990 (or the first year of business, whichever was earliest) to 2018. The year 1990 was chosen as a starting point for collection of data because, according to the Evolution of Corporate Social Responsibility by Knowledge Tank referenced earlier, that year was when CSR policies began to be important for shareholders and managers of the firm. This year should also correspond to an increase in CSR measures being incorporated into firm culture, the variable being measured.

After determining the information needed to analyze the relationship between ESG Disclosure Scores and historical profitability metrics, the data was collected from YCharts, a Chicago-based financial data research company, that allows investors and data analysts to download financial metrics for specific firms without the use of terminals. I calculated an average of each financial metric category for each individual firm. Ultimately, the final data set included Average Net Income, Average EPS, Average

Price to Cash Flow, etc., for all fifty firms included in this study. This data is presented in Exhibit 3 of the Appendix.

The resulting 350 individual and unique financial data points, were regressed against the 2018 ESG Disclosure Scores published by Bloomberg. Within the cross-sectional regression model, each industry was analyzed separately, and each historical financial metric was analyzed individually. For example, within the Technology industry, the ten data points representing average Net Income for each of the ten firms within this industry were directly regressed against the corresponding ten ESG Disclosure Scores for these Technology firms. The same process was performed to depict the relationship between the Technology industry's ESG Disclosure Score and its underlying average Earnings per Share, and the other five measures of financial performance. Exhibit 5 of the Appendix presents the relationship between ESG Disclosure Score and historical profitability metrics, broken down by industry. The results of this study are discussed in the following section.

## **Results & Discussion**

After analyzing the regression statistics for each historical profitability metric within all five industries, the following findings are observed for each industry. The industries with the highest correlation and significance between ESG Disclosure Score and historical profitability metrics are the Technology sector and the Energy sector. Within each of these industries, there are four financial metrics that are significantly and strongly correlated with the underlying firms' ESG Disclosure Score. At the other end of

the study, the Consumer Services industry only presents one profitability metric that has a moderately strong correlation with the underlying firms' ESG Disclosure Score. The results of the study are broken down below. In this study, a correlation coefficient near 0.6 was considered to have a strong relationship between the two variable, per the table below.

**Table 1: Strength of Regression Association**

Strength of Association	Coefficient, <i>r</i>	
	Positive	Negative
Small	.1 to .3	-0.1 to -0.3
Medium	.3 to .5	-0.3 to -0.5
Large	.5 to 1.0	-0.5 to -1.0

Source: Stats.StockExchange.com

As stated earlier, the Technology and Energy industries show the largest, and most significant, correlations between historical profitability metrics and ESG Disclosure Score. The Technology sector is most significantly, and strongly, correlated to ESG Disclosure Score with the financial metric of ROA. This is significant when considering the industry because technology firms will invest a large portion of revenue into research and development expenses. For this reason, it is important to note that a technology firm has such a strong and significant correlation between ROA and ESG Disclosure Score. This correlation can be interpreted to mean that an increasing ESG

Disclosure Score is systematically associated with an increase in ROA. This same finding is manifested for the Energy sector as well.

The Consumer Non-Durables and Transportation sectors demonstrate a moderately-strong and significant relationship between select profitability metrics and ESG Disclosure Score. The Consumer Non-Durables sector's ESG Disclosure Score is most significantly and strongly correlated to the EV/EBITDA profitability metric. This variable is significant in relation to the industry because as mentioned earlier, this metric measures both valuation in the numerator and profitability in the denominator. For a Consumer Non-Durable firm, the relationship is closely monitored because a ratio that is too high could imply overvalue of the stock, and a ratio that is too low could imply that the stock is undervalued. These factors are closely monitored for a firm selling physical products to consumers because their stock is closely watched in the market, and is explanatory of the future for a firm of such characteristics. The Transportation sector's ESG Disclosure Score is also significantly correlated with the EV/EBITDA multiple. The correlation implies that a firm's ESG Disclosure Score will vary most closely with the firm's valuation and underlying earnings.

The Consumer Services sector's ESG Disclosure Score was not significantly correlated with profitability metrics out of all of the industries analyzed in this study. Those regression results indicate that the policies of the firms in that industrial classification display weak correlations between ESG Disclosure Score and the Price to Cash Flow and ROE ratios. A relationship between ESG Disclosure Score and Price to Cash Flow ratio implies that an increase in investor awareness of ESG Disclosure will

increase the price per share traded in the market. Though this relationship may exist, the data in the sample does not support an inference of a significant systematic relationship between the two variables. This research finds a relationship between ESG Disclosure Score and ROE, which implies that an increased level of ESG Disclosure to the public will increase net income and the return generated on a firm's given level of equity. Again, the inference in this study is only suggestive. A firm systematic relationship between these two variables requires a larger data set.

Considering the five industries together, some tentative inferences emerge from the statistical findings. *Hypothesis 1* questions the relationship between ESG Disclosure Score and valuation related metrics, including Net Income, Earnings per Share, and Price to Cash Flow. Based upon the economic results, we can infer that there is a strong and significant correlation between Net Income and ESG Disclosure Scores within those industries that rely heavily on research and development, including Technology, Energy and Transportation. We can infer that there is not a significant systematic relationship between ESG Disclosure Score and Earnings per Share since the data only indicates that there is a significantly positive relationship between these two variables in the Energy sector. Finally, we conclude that there is a moderately-significant relationship between Price to Cash Flow and ESG Disclosure Score. Our findings show that there is a positive, yet weak, relationship between the two variables within three different sectors.

*Hypothesis 2* considers the relationship between ESG Disclosure Score and profitability related metrics, including ROE, ROA and the ROIC. Based upon the

econometric findings, we can infer that the relationship between these variables are strongest. Each of the five industries included in this study had at least one case of a significant relationship between ESG Disclosure Score and a profitability ratio. Of the three profitability metrics analyzed, Return on Invested Capital had the strongest statistical significance. The relationship between ROIC and ESG Disclosure Score was extremely significant in one industry and negative in two industries, and was marginally significant in one other. From this relationship, we may infer that a higher disclosure of ESG efforts will be associated with an increased earnings in the numerator of the ROIC formula, and allow for a greater return on shareholders' investments. If the inference is valid and durable, we can conclude that a higher ESG score will be associated with a greater return on the shareholders' investments.

*Hypothesis 3* examines the relationship between ESG Disclosure Score and the EV/EBITDA metric. The latter variable is a metric for the profitability as well as the valuation of a firm. The econometric findings suggest that there is a significant and strong positive relationship between these two variables within three sectors, the Energy, Consumer Non-Durables, and Transportation industries. These three industries represent a wide variety of firms, which indicates that it is possible that the relationship between EV/EBITDA and ESG Disclosure Score is random and may be attributable to other factors as well. In order to disentangle and isolate specific relationships among the data, it may be necessary to analyze a much larger statistical sample drawn from other firms within each industry. What we can conclude, however, is that there is a significant relationship between EV/EBITDA and ESG Disclosure Score amongst many

firms, and this relationship is also a strong positive one, with an average correlation of 0.56.

## **Conclusion**

Following the exploration of the correlation between Bloomberg's published ESG Disclosure Score and various historical profitability metrics, this study tentatively infers that there are certain relationships that can be noted amongst industries. Given the theoretical relationship that might exist between the CSR policies implemented by firms and the reactions that those policies might be expected to generate from investors and consumers, this study showed surprising results that did not necessarily align with this thought process. Though all significant relationships between financial metrics and ESG Disclosure Score did present a fairly high correlation between the variables, the number of significant relationships were few. In conclusion, we are able to state that there exists some positive relationships between various historical profitability metrics and ESG Disclosure Scores, though the relationships and correlation differ amongst industries. This study also suggests that future research should be conducted by enlarging the statistical sample of firms in each industry and adding other industries. Additional research would allow academics to reach firmer conclusions respecting the relationship between historical profitability metrics and ESG Disclosure Score.

## Appendix

### Exhibit 1: Analyzed Firms

Technology	Energy	Consumer Non-Durables	Tranportation	Consumer Services
Google	BP	Anheuser-Busch	American Airlines	1-800-Flowers
Intel Corp.	Chesapeake Energy Corp.	Avon	Delta Airlines	Abercrombie & Fitch
Apple	Chevron	Colgate-Palmolive	FedEx	Arbor Realty Trust
SNAP, Inc.	ExxonMobil	General Mills	Hub Group	Bed Bath & Beyond
Microsoft	General Electric	Hasbro	JetBlue	Best Buy
Cisco Systems	Hess Corp.	Hershey	Knight Transportation	Macy's
Logitech	Noble Energy	Kellogg Co.	Old Dominion Freight Line	Park Hotels and Resorts
Nokia	RPC	Lululemon	Southwest Airlines	Target
Oracle	Woodward	Nike	UPS	The New York Times
Salesforce	WPX Energy	Pepsico	Werner Enterprises	Walmart

### Exhibit 2: Analyzed Firms & Respective Bloomberg ESG Disclosure Score (2018)

Technology	ESG Disclosure Score	Energy	ESG Disclosure Score	Consumer Non-Durables	ESG Disclosure Score	Tranportation	ESG Disclosure Score	Consumer Services	ESG Disclosure Score
GOOGL	43.4	BP	69.7	BUD	43.8	AAL	50.0	FLWS	19.0
INTC	61.6	CHK	38.2	AVP	32.6	DAL	48.8	ANF	26.8
AAPL	53.1	CVX	52.3	CL	55.8	FDX	66.1	ABR	11.8
SNAP	16.5	XOM	56.0	GIS	50.4	HUBG	17.4	BBBY	27.3
MSFT	61.2	GE	45.9	HAS	58.7	JBLU	36.0	BBY	52.2
CSCO	57.0	HES	70.5	HSY	43.0	KNX	16.9	M	34.4
LOGI	36.0	NBL	57.3	K	38.4	ODFL	17.4	PK	18.2
NOK	62.1	RES	16.9	LULU	26.8	LUV	44.6	TGT	57.9
ORCL	29.3	WWD	30.2	NKE	54.5	UPS	54.1	NYT	18.6
CRM	39.7	WPX	16.9	PEP	50.8	WERN	14.0	WMT	32.1

Source: Bloomberg Terminal

### Exhibit 3: Historical Profitability Metrics

Technology							
Ticker	Avg. Net Income	Avg. EPS	Avg. Price to Cash Flow	Avg. ROE	Avg. ROA	Avg. ROIC	Avg. EV/EBITDA
GOOGL	8.17	12.00	54.42	25.30%	15.44%	18.23%	22.36
INTC	7.03	1.25	28.34	21.89%	15.28%	19.67%	9.05
AAPL	13.40	2.31	17.99	20.16%	11.11%	17.64%	11.52
SNAP	-1.40	-1.96	0.00	-81.71%	-71.17%	-81.71%	0.00
MSFT	10.76	1.19	27.24	30.69%	19.72%	28.05%	16.87
CSCO	19.15	0.73	35.31	23.11%	16.41%	21.28%	19.15
LOGI	0.09	0.86	31.14	16.80%	9.41%	14.66%	25.59
NOK	2.14	0.46	93.76	18.51%	9.70%	16.04%	16.01
ORCL	4.17	0.85	31.33	31.08%	15.90%	25.87%	14.33
CRM	0.00	-0.05	63.24	5.26%	5.44%	21.63%	108.62

Energy							
Ticker	Avg. Net Income	Avg. EPS	Avg. Price to Free Cash Flow	Avg. ROE	Avg. ROA	Avg. ROIC	Avg. EV/EBITDA
BP	8.50	2.49	62.73	12.68%	-6.15%	9.12%	12.19
CHK	-0.41	-0.38	7.73	-208.64%	7.14%	0.80%	7.61
CVX	10.14	5.16	28.90	15.90%	10.13%	12.69%	5.75
XOM	19.85	3.87	30.98	20.54%	3.41%	16.97%	6.98
GE	9.04	0.85	39.00	13.90%	2.06%	2.75%	20.96
HES	0.40	1.19	53.77	6.05%	1.82%	29.58%	23.87
NBL	0.15	0.53	91.49	7.95%	9.80%	4.96%	15.22
RES	0.06	0.28	257.41	14.93%	45.28%	13.65%	7.78
WWD	0.09	1.23	39.97	13.38%	12.71%	9.53%	9.65
WPX	-0.49	-2.61	0.00	-13.24%	5.13%	-8.39%	5.91

Consumer Non-Durables							
Ticker	Avg. Net Income	Avg. EPS	Avg. Price to Free Cash Flow	Avg. ROE	Avg. ROA	Avg. ROIC	Avg. EV/EBITDA
BUD	4.60	2.96	18.03	14.72%	39.78%	7.19%	13.15
AVP	0.28	0.57	29.92	24.94%	-74.43%	26.16%	10.35
CL	1.37	1.32	27.43	-73.90%	14.52%	24.47%	13.73
GIS	1.02	1.54	27.44	36.22%	9.17%	15.03%	10.79
HAS	0.23	1.50	16.25	14.96%	6.60%	9.46%	8.51
HSY	0.46	1.88	151.25	46.01%	11.45%	16.86%	12.24
K	0.82	2.08	27.91	46.48%	9.69%	14.96%	11.86
LULU	0.14	0.97	76.27	28.05%	22.73%	28.66%	17.13
NKE	1.45	0.67	45.69	22.78%	14.32%	19.57%	11.40
PEP	4.10	2.58	23.00	33.63%	10.55%	17.52%	12.40

**Transportation**

Ticker	Avg. Net Income	Avg. EPS	Avg. Price to Free Cash Flow	Avg. ROE	Avg. ROA	Avg. ROIC	Avg. EV/EBITDA
AAL	0.11	-3.89	61.92	42.45%	-0.35%	-9.85%	11.83
DAL	0.17	-3.40	15.44	-29.49%	-1.19%	1.80%	7.77
FDX	1.12	3.80	380.83	11.16%	4.81%	7.91%	88.93
HUBG	0.05	1.32	65.76	11.93%	5.97%	10.58%	9.01
JBLU	0.20	-0.20	30.05	7.12%	3.44%	1.00%	9.29
KNX	0.08	0.78	132.33	16.01%	10.69%	14.48%	9.54
ODFL	0.10	1.25	68.85	15.06%	8.37%	11.42%	7.29
LUV	0.66	0.98	30.44	13.43%	5.60%	9.49%	9.07
UPS	3.06	3.06	30.35	94.39%	9.41%	17.51%	13.82
WERN	0.07	0.97	40.91	12.34%	7.18%	11.08%	4.86

**Consumer Services**

Ticker	Avg. Net Income	Avg. EPS	Avg. Price to Free Cash Flow	Avg. ROE	Avg. ROA	Avg. ROIC	Avg. EV/EBITDA
FLWS	0.01	0.04	23.70	-8.39%	-0.20%	0.06%	13.62
ANF	0.16	1.70	35.70	28.64%	15.08%	24.01%	7.17
ABR	0.03	0.62	7.99	4.87%	1.51%	2.77%	0.00
BBBY	0.43	1.90	66.42	25.74%	16.14%	24.35%	12.33
BBY	0.49	1.18	21.82	16.54%	5.97%	12.77%	8.66
M	0.57	1.34	12.08	9.55%	2.94%	4.61%	6.24
PK	0.64	5.06	24.67	18.99%	9.04%	11.26%	11.06
TGT	1.59	2.07	65.69	17.55%	5.57%	8.16%	8.23
NYT	0.12	0.71	27.52	9.73%	3.68%	6.19%	10.76
WMT	8.72	2.33	47.63	21.73%	8.95%	13.21%	13.03

Source: [www.YCharts.com](http://www.YCharts.com)

## Exhibit 4: Regression Results | ESG Disclosure Scores & Profitability Metrics

<b>Technology</b>							
<i>Regression Statistics</i>	<i>Net Income</i>	<i>EPS</i>	<i>Price to Cash Flow</i>	<i>ROE</i>	<i>ROA</i>	<i>ROIC</i>	<i>EV/EBITDA</i>
Multiple R	0.6016	0.1393	0.4102	0.6649	0.6894	0.6551	0.0671
R Square	0.3619	0.0194	0.1683	0.4421	0.4752	0.4292	0.0045
Standard Error	5.6393	3.9504	25.3213	0.2649	0.2074	0.2607	32.2375
t Stat	2.13**	0.3978	1.2722**	2.5179**	2.6917**	2.4526**	-0.1901
P-Value	0.0658**	0.7012	0.239**	0.0359**	0.0274**	0.0398**	0.8540
Observations	10	10	10	10	10	10	10

<b>Energy</b>							
<i>Regression Statistics</i>	<i>Net Income</i>	<i>EPS</i>	<i>Price to Cash Flow</i>	<i>ROE</i>	<i>ROA</i>	<i>ROIC</i>	<i>EV/EBITDA</i>
Multiple R	0.4276	0.5856	0.2688	0.1743	0.6443	0.5505	0.5388
R Square	0.1829	0.3429	0.0722	0.0304	0.4151	0.3031	0.2903
Standard Error	6.6061	1.8763	75.3657	0.7293	0.1118	0.0908	5.7594
t Stat	1.3381**	2.0433**	-0.7892	0.5007	-2.3826**	1.8651**	1.809**
P-Value	0.2177**	0.0753**	0.4527	0.6300	0.0444**	0.0991**	0.108**
Observations	10	10	10	10	10	10	10

<b>Consumer Non-Durables</b>							
<i>Regression Statistics</i>	<i>Net Income</i>	<i>EPS</i>	<i>Price to Cash Flow</i>	<i>ROE</i>	<i>ROA</i>	<i>ROIC</i>	<i>EV/EBITDA</i>
Multiple R	0.2399	0.1492	0.3188	0.4026	0.2959	0.4745	0.5252
R Square	0.0575	0.0223	0.1016	0.1621	0.0876	0.2251	0.2758
Standard Error	1.6501	0.8237	41.6367	0.3362	0.3040	0.0648	2.0695
t Stat	0.6988	0.4267	-0.9512*	-1.2442**	0.8761	-1.5246**	-1.7455**
P-Value	0.5045	0.6809	0.3693*	0.2486**	0.4065	0.1658**	0.1190**
Observations	10	10	10	10	10	10	10

<b>Transportation</b>							
<i>Regression Statistics</i>	<i>Net Income</i>	<i>EPS</i>	<i>Price to Cash Flow</i>	<i>ROE</i>	<i>ROA</i>	<i>ROIC</i>	<i>EV/EBITDA</i>
Multiple R	0.5593	0.0148	0.3760	0.2232	0.4741	0.3323	0.6010
R Square	0.3129	0.0002	0.1414	0.0498	0.2248	0.1104	0.3612
Standard Error	0.8292	2.6007	107.0047	0.3258	0.0364	0.0794	21.4802
t Stat	1.9085**	-0.0420	1.1477*	0.6476	-1.5232**	-0.9964*	2.127**
P-Value	0.0927**	0.9675	0.2842*	0.5354	0.1662**	0.3482*	0.0661**
Observations	10	10	10	10	10	10	10

<b>Consumer Services</b>							
<i>Regression Statistics</i>	<i>Net Income</i>	<i>EPS</i>	<i>Price to Cash Flow</i>	<i>ROE</i>	<i>ROA</i>	<i>ROIC</i>	<i>EV/EBITDA</i>
Multiple R	0.1868	0.0399	0.4409	0.3222	0.0887	0.1614	0.0597
R Square	0.0349	0.0016	0.1944	0.1038	0.0079	0.0260	0.0036
Standard Error	2.7682	1.4646	19.5107	0.1098	0.0578	0.0865	4.3016
t Stat	0.5377	0.1129	1.3893*	0.9626**	0.2518	0.4624	0.1692
P-Value	0.6054	0.9129	0.2021*	0.3639**	0.8076	0.6561	0.8698
Observations	10	10	10	10	10	10	10

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