

COLLECTED ESSAYS

ESG: MYTHS and REALITIES

ESG Investing and Asset Returns

Steven Globerman

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Executive Summary

ESG investing is an investment strategy that incorporates environmental, social, and governance (ESG) information in the investment decision-making process. There is a growing interest in ESG investing, and thus a large and growing empirical literature examining the returns to ESG investing. At the same time, the demand for more and better information about firms' ESG activities is increasing. In response to this demand, many jurisdictions (e.g., the US Securities and Exchange Commission) are considering ESG reporting mandates to encourage ESG investing by helping the investors smoothly identify firms with better ESG metrics (green firms) from the inferior ones (brown firms).



In this essay, we provide a summary of the previous theoretical and empirical academic studies examining the relationship between ESG investing and asset returns. We then explain how these findings can be arguably relevant for evaluating the public policy of mandatory ESG reporting. We only focus on how this policy can potentially change the cost of capital and consequently give firms incentives to improve their ESG performance, which is the intended goal of this policy.

Many claim that the return to ESG investing is negative. The main conceptual framework that supports this claim is that investors have non-pecuniary preferences for green firms, and thus they are willing to accept lower expected returns for holding stocks and bonds that green firms issue. Thus, these firms benefit from lower financing costs (cost of capital) in the capital market. So green firms can invest more and grow more. Moreover, brown firms will have an incentive to improve their ESG practices to lower their financing costs to remain competitive. If the channel through investors' preferences works, ESG investing may have a positive social outcome as long as empirical evidence confirms that ESG investing can significantly



trade-off between ESG investing (doing good) and asset returns (doing well). The main conceptual framework that can support their claim is that green firms have higher profitability or lower ESG-related risks, while investors cannot readily identify green firms from brown ones. Therefore, green assets are underpriced and so provide higher expected returns for investors who hold them. In this scenario, mandatory ESG reporting might be justified as long as firms can provide better and more ESG information to investors under the mandatory regime.

In this essay, we find that the results of empirical studies examining the relationship between ESG investing and asset returns (cost of capital) are inconclusive. Many studies find positive or negative relationships, while many do not find any significant relationship. This result can shed light on the claim that mandating ESG reporting can have a positive social impact by systematically changing firms' costs of capital. If there is no agreement on how ESG investing is associated with risk-adjusted investment returns (cost of capital), advocates of mandating ESG reporting face a burden of proof to show that this policy can have a net positive social impact.

1. Introduction




ESG investing is an investment strategy that incorporates environmental, social, and governance (ESG) information in the investment decision-making process. Investors can find information about the ESG activities of the firms mainly through ESG rating agencies, as well as reports issued by companies. Rating agencies provide information to the public about the ESG performances of the firms. For example, firms with lower carbon emissions (E), a higher regard for employees' health and safety in the workplace (S), and more diversity in leadership (G) have better ESG ratings.

Asset managers are increasingly applying¹ ESG investing² to buy stocks and bonds of firms that are aligned with ESG goals. As a result, there is a large and growing empirical literature examining the returns to ESG investing. Investors can have different incentives to incorporate ESG information in their investment decision-making. Some investors may find ESG

decrease the expected returns (decrease the cost of capital for firms). In this scenario, mandating ESG reporting may be justified if investors have difficulty identifying green firms from brown firms, and if firms can provide better ESG information to investors under the mandatory regime.

In contrast, many ESG advocates claim that there is no

information financially material. This material information can help investors better evaluate the financial risks and returns of a firm. Some investors may have social objectives in addition to financial incentives and would like to buy the stocks and bonds of firms with better ESG performance. Both groups of investors would like to have access to relevant information about the ESG activities of the firms.

ESG INVESTMENT GRADE RATING		
EXCELLENT	AAA, AA	
FAIR	A, BBB, BB	
POOR	B, CCC	

With growing interest in ESG investing and demand for more and better information about firms' ESG activities, many jurisdictions (e.g., the U.S. Securities and Exchange Commission) are considering ESG reporting mandates to encourage ESG investing by helping investors to identify firms with better ESG metrics (green firms) from the inferior ones (brown firms).

In this essay, we provide a summary of the theoretical and empirical academic literature examining the returns to ESG investing. We then explain how these findings can be arguably relevant for evaluating the public policy of mandating more expansive ESG reporting. A comprehensive cost-benefit analysis is needed to fully evaluate this public policy. In this essay, we do not do a cost-benefit analysis of mandated changes to ESG reporting. Rather, we discuss a specific potential source of benefit that can arise from price changes of capital market assets.³

In a public policy debate, one should identify the market failure that allegedly creates a need for regulation, as well as how the regulation can solve the issue. In the ongoing discussion about mandatory ESG reporting, the main ostensible market failure is that firms underperform in their ESG activities compared to the socially optimal level. For example, it can be argued that firms should have lower carbon emissions (E in ESG), or higher diversity in leadership (G in ESG). There can be various sources of this market failure. The potential source focused on in this report is that investors are broadly uninformed about the ESG performance of firms and, therefore, cannot identify green firms from brown firms. Investors can potentially use ESG ratings that ESG agencies provide to identify green firms. However, Berg, Koelbel, and Rigobon (2019) document that the ESG ratings from the main six rating providers disagree substantially.

How can mandating ESG reporting drive change by giving firms an incentive to improve their ESG performance?⁴ The potential channel that we focus on is that mandating more ESG reporting can make investors better informed about the ESG performance of individual firms and thereby change their investment decisions in the capital market. Firms raise funds (capital) through the capital market, whether through issuing stocks, bonds, or borrowing from financial institutions. If investors can better identify green firms, they may invest more in green firms and divest from brown firms. This reallocation in investors'

“The policy of mandating more expansive ESG reporting can drive change and therefore improve social efficiency through asset price changes in the capital market.”

portfolios can increase the prices of the stocks and bonds of green firms. Green firms therefore benefit from lower financing costs in the capital market. Hence, green firms can invest more and grow relative to brown firms. Moreover, brown firms will have an incentive to improve their ESG practices to lower their financing costs to remain competitive. Therefore, the policy of mandating more expansive ESG reporting can drive change and therefore improve social effi-

ciency through asset price changes in the capital market.

How can the empirical findings of returns to ESG investing for investors (cost of capital for firms) be relevant for evaluating the public policy of mandatory ESG reporting? We examine the theoretical literature on ESG investing. In particular, we discuss how various theoretical frameworks might justify the mandate, and what these frameworks predict for returns to ESG investing. If the empirical tests documented in the literature are consistent with the relevant conceptual framework, the existence of a net social benefit to mandatory ESG reporting could be potentially justified. Below, we highlight two dominant conceptual frameworks that can be identified in the literature.

In this essay, we provide a summary of the academic literature surrounding ESG investing to assess whether there is conclusive evidence on the relationship between ESG investing and asset returns. In the next section, we summarize the theoretical studies examining the relationship between ESG investment and asset returns. The goal of this section is not to review complicated mathematical models. Instead, we want to summarize the channels through which ESG investing can potentially affect the expected returns to and cost of capital. In section 3, we discuss the empirical studies examining the relationship between ESG investing and returns. We conclude that the empirical evidence is inconclusive. In Section 4, we provide some explanations for why the empirical results examining the relationship between ESG investing and returns find mixed results.

In Section 5, we conclude from inconclusive empirical results examining returns to ESG investing that we do not know whether mandatory ESG reporting can reduce the cost of capital for green firms. As such, the advocates of mandating ESG disclosures should clarify how mandating ESG reporting can have any net positive social impact.

2. Theoretical frameworks

In contrast to the argument made by some prominent investment managers that “Green Investing” offers higher risk-adjusted returns to investors, many academics assert that the return to ESG investing is negative (e.g., Hong and Kacperczyk, 2009).⁵ The main conceptual framework that supports this claim is that investors have non-pecuniary preferences for green firms, and thus they are willing to accept lower returns for holding stocks and bonds

that are issued by green firms (Berk and van Binsbergen, 2021). In fact, investors should sacrifice financial returns (doing well) for following their ESG concerns (doing good). In this framework, ESG investing implies better social outcomes only if investors tilt their investment portfolio toward green firms so that they can materially increase the stock and bond prices of these firms compared to brown firms. If investors can materially increase the asset prices of green firms, these firms will face lower financing costs (lower cost of capital) so

“If investors can materially increase the asset prices of green firms, these firms will face lower financing costs (lower cost of capital) so that they can invest more and grow more, which drives better social outcomes.”

that they can invest more and grow more, which drives better social outcomes. If the channel through investors’ preferences works, ESG investing may have positive social outcomes as long as empirical evidence confirms that ESG investing is associated with significantly lower expected returns (lower cost of capital for firms). In this scenario, mandating ESG reporting may be justified if investors cannot distinguish green firms from brown firms, and if firms provide better ESG information to investors under the mandatory regime.

Second, many ESG advocates claim that the outperformance of ESG strategies is beyond doubt; there is no trade-off between ESG investing (doing good) and asset returns (doing well) (Kynge, 2017, September 3). The main conceptual framework that can support their claim is that green firms have higher profitability and/or lower ESG-related risks, while these firms do not inform their investors of this material information. Therefore, green assets are underpriced and so provide higher expected returns for investors who hold them. In this scenario, mandatory ESG reporting might be justified as long as firms can provide better and more ESG information to investors under the mandatory regime.

The standard conceptual framework to analyze the interaction between ESG investing and asset returns is based on the single-period Capital Asset Pricing Model (CAPM) developed by Sharpe (1964) and Mossin (1966). CAPM describes the relationship between the expected return and the risk of investing in a security. The model shows that the expected return, or simply the average return, on a security is equal to the risk-free return plus a market risk premium. The market risk mainly exists because economic cycles are unpredictable. If the economy is in a boom, dividends and stock prices are higher; if the economy is in a recession, the dividends and prices are lower. An investor who buys a well-diversified portfolio of stocks (e.g., an S&P 500 index fund) expects to receive an excess return compared to holding government-issued bonds, which provide guaranteed coupons regardless of economic cycles. Note that market risk exists even in a well-diversified portfolio. The implication of CAPM is that if the expected return of the stock of firm A (say 7 percent) is higher than that of firm B (say 6 percent), it means that firm A is riskier with higher price volatility. Because of the extra risk in stock A, the investors who buy those stocks expect to get an extra 1 percent return. Therefore, other than risk premium, stock A should not provide an excess return (Alpha).

Alpha is a term widely used by investors. It is a measure of the performance of an investment after removing the risk premium. Based on CAPM, the alpha of all stocks should be zero. The extensions to CAPM (e.g., the three-factor pricing model) incorporate risk factors in addition to the market risk to explain the expected returns. The intuition behind all these extensions is the same. As long as there is a known risk factor, it is already reflected in the price and return of the stock as a higher risk premium. Adjusting for all these risks, the stock should not be able to outperform the benchmark index (zero alpha).

In this section we discuss two main channels through which ESG investing can affect expected returns: 1) investors' preferences and 2) ESG-related risks. Then we discuss under what conditions theory predicts that ESG investing can provide higher expected returns.

Investors' preferences

Investors' taste for ESG criteria is the primary channel in the theoretical models to rationalize how ESG investing can affect expected returns. Heinkel, Kraus, and Zechner (2001) is

“Green investors boycott, in an investment sense... brown firms. In this environment, there are fewer investors available (less demand) to hold the stock of brown firms, causing those share prices to fall.”

the first paper that incorporates tastes for ESG in an asset pricing model. The authors assume that green investors do not like the firms with polluting technologies (E in ESG). These green investors boycott, in an investment sense, the brown firms. In this environment, there are fewer investors available (less demand) to hold the stock of brown firms, causing those share prices to fall. This implies a lower cost of capital for the green firms as they can issue stocks with higher prices and raise more financial capital. This creates incentives for the brown firms to follow practices to become green, which results

in presumed positive social outcomes. The lower cost of capital means lower expected returns for green investors in equilibrium. Yet green investors are not unhappy because they enjoy non-pecuniary returns, i.e., increased personal satisfaction from holding green stocks.

The claim that green investors get a lower expected return in equilibrium while green stocks' prices increase to higher levels can be confusing. To clarify, I provide a simple example. Suppose that there are two firms: a green firm (say a battery maker), and a brown firm (a fossil fuel firm). For simplicity, suppose that both are initially trading at the identical stock price of \$100. Moreover, let's assume that the expected return of both is identical at 6 percent. Now assume that investors become concerned about ESG issues and would like to hold firms with better ESG ratings. The short-term effect of this change is that the stock price of the green firm increases as investors bid up the price of the green firm's shares in order to buy them, and the stock price of the brown firm drops as demand for those shares declines. Suppose that the green firm is now priced at \$105 and the brown firm is priced at \$95. During the period over which the price of green is rising and the price of brown is falling, investors' return will be higher for the green company than for the brown company. However, after

the transition period, the expected return of the green firm falls below 6 percent, say to 5 percent, and the expected return to the brown firm rises above 6 percent, say to 7 percent.

Why will the green firm have a lower future expected return in the new equilibrium? The reason is that, in the new equilibrium, investors' desire to hold green firms for reasons beyond their expected monetary return. So the investors who hold green stocks are fine with a lower monetary return of 5 percent because they get the equivalent of a 1 percent non-monetary return from being socially responsible. Similarly, the investors who hold brown stocks expect to receive a higher monetary return of 7 percent to compensate for the non-monetary loss of 1 percent.⁶ So both groups of investors get a total return of 6 percent in equilibrium (i.e., after the transition period) if we consider both monetary and non-monetary returns. Therefore, during the period of transition in which the preferences of investors are being reflected in changing stock prices, green stocks outperform brown stocks. After the transition period, green stocks will underperform the brown stocks. This can be one explanation for why the results of empirical studies investigating the effect of ESG investing on asset returns are mixed. We discuss this further in a later section.



Berk and van Binsbergen (2021) argue that ESG investing implies lower expected returns (cost of capital). They argue that for ESG investing to have an impact it must change the cost of capital materially. They find a simple expression for the change in the cost of capital from ESG investing: (1) the fraction of ESG investors, (2) the fraction of green stocks, and (3) the correlation between the asset returns of the green and brown stocks. They carefully estimate these parameters from data. They find that the effect on the cost of capital is small, and, hence, the expected returns for green investors and brown investors are almost equal. They argue that the risk and return of the green stocks and brown stocks are highly similar, so they are highly substitutable. An investor can easily get the same expected return and risk in a portfolio with or without brown stocks. Another reason for finding a small effect is their claim that only 2 percent of the investors are green investors, which is a very small fraction.

Expected ESG-related risks

In addition to investors' preferences, risk can also affect the expected returns for green or brown firms. If ESG is a risk factor, it can affect the expected return of the stocks in addition to other risk factors like market risk. For example, fossil fuel producers may face risks associated with climate or regulatory shocks to which renewable energy producers are immune. Cornell (2021) argues that if ESG is a risk factor, brown stocks should have a higher risk premium coming from ESG-related risk. Investors that buy green stocks will get



lower expected returns. Yet they are happy because they have a portfolio that hedges them against ESG-related risks. If there are ESG-related risks and investors do not know about them, the green stocks are underpriced. So those who hold them can enjoy higher risk-adjusted expected returns (positive alpha). If investors learn that there are ESG-related risks and green stocks can reduce that risk, they start buying those stocks which implies an increase

in their stock prices. As in the case of the transition period discussed for preferences, green investors enjoy temporary higher returns. However, in the new equilibrium, the expected returns of the green investors are lower. Yet they are happy because they have a portfolio that insures them against ESG-related risks.

Luo and Balvers (2022) study the theoretical effect of divestment in brown stocks. They identify a boycott factor risk premium and show that this is positive. Pastor, Stambaugh, and Taylor (2020) also provide a model featuring agents with ESG preferences and ESG investing as a strategy for a hedge against climate risk. In equilibrium, green assets have negative CAPM alphas, whereas brown assets have positive alphas. Green assets' negative alphas stem from investors' preference for green holdings and from green stocks' ability to hedge climate risk. Therefore, the expected returns of green investors are lower in equilibrium.

Is there any theory that shows green stocks can outperform brown stocks?

So far, we have argued that both investors' preferences and ESG-related risks imply lower expected returns to ESG investing in equilibrium. We also argued that during a transition period when green stock prices increase, green stocks outperform brown stocks, but thereafter, brown stocks outperform green stocks. Beyond this channel, few other studies try to rationalize how green assets can outperform brown assets except under specific, usually transitory, conditions.

Unexpected ESG-related risks

Pastor, Stambaugh, and Taylor (2020) argue that if ESG concerns strengthen unexpectedly, green assets can outperform brown ones despite having lower expected returns. For example, if the government surprises investors by introducing new regulations that penalize firms with high carbon emissions, the demand for firms with low carbon emissions (good performance of E in ESG) increases. This results in higher prices for those stocks, so during the period that new information is incorporated into the asset prices, green stocks outperform brown stocks. Note that the shock should be unexpected. If it is an expected shock, it is already reflected in asset prices and an ESG-related risk premium. Moreover, note that this channel again provides higher returns for green assets only during a transition period.

ESG, profitability, and mis-pricing

Pedersen, Fitzgibbons, and Pomorski (2020) derive a model that includes investors whose preferences depend on ESG scores. Moreover, ESG scores can be used as a signal for profitability of the firms. They assume there are three types of investors: ESG-unaware, ESG-aware, and ESG-motivated. ESG-unaware investors are those who do not know that ESG scores are a signal for the profitability of the firm, so they do not consider ESG scores in their investment decision-making. ESG-aware investors know that there is a link between profitability and ESG scores, so they use this information. ESG-motivated investors are aware investors who also enjoy non-pecuniary utility from holding stocks with high ESG scores. Like previous studies, if the economy includes ESG-aware and ESG-motivated investors, ESG-motivated investors bid up the price of high ESG-scoring stocks. In equilibrium, the average ESG score of the ESG-motivated investors is higher, and their expected returns are lower compared to ESG-aware investors. If the economy only includes ESG-aware investors, the expected return of stocks is independent of ESG scores. The reason is that ESG scores are assumed to be a signal of profit, not risk. If firms with high ESG scores have higher profits compared to the low ESG score ones, the stock prices of firms with high ESG scores will be higher such that the expected returns of firms with any ESG score are equal. They argue that there is a case in which high ESG-scoring stocks outperform low ESG-scoring stocks. This is the case where the economy has a large enough fraction of ESG-unaware investors and ESG is a positive signal for profitability. If these assumptions hold, high ESG-scoring stocks deliver high expected returns. This is because high ESG-scoring stocks are profitable, yet their prices are lower than they should be, leading to relatively high future returns.

Disagreement in ESG ratings

The relationship between ESG investment and performance can also be ambiguous due to uncertainty in ESG ratings. When attempting to assess the impact of ESG information on investment performance it should be clear what is meant by “ESG information.” There are a large number of organizations attempting to answer that question. Li and Polychronopoulos (2020) report that as of year-end 2019 they had identified 70 different firms that provide some sort of ESG ranking system. This problem would not be so bad if all the ratings were effectively similar, but this is not the case. There is a substantial literature documenting the divergence of ESG ratings for the same firms. The rating organizations differ not only in how to measure the various ESG criteria but also on the criteria that are deemed worthy of measurement.

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How does disagreement among ESG rating providers affect the relationship between ESG investing and expected returns? Avramov, Cheng, Lioui, and Tarelli (2021) answer this

question. They study the asset pricing and portfolio implications of an important barrier to sustainable investing: uncertainty about the corporate ESG profile. Consistent with previous studies in which there were no uncertainties surrounding the ESG rating of a firm, they show that ESG ratings are negatively associated with future performance when there is little uncertainty. They further show that the ESG-performance relationship could be insignificant or positive when uncertainty increases.

Berg, Fabisik, and Sautner (2020) document widespread changes (re-writing) to the historical ratings of Refinitiv ESG, a key ESG rating provider, which offers one of the most comprehensive ESG databases in the industry. To document the rewriting of the ESG scores, the researchers twice downloaded the same Refinitiv ESG data for the same set of firm-years at different points in time. They downloaded the first (“initial”) version of the data in September 2018, and the second (“rewritten”) version two years later in September 2020. Across these two downloads, they document large re-writings of ESG ratings. They demonstrate that these changes affect tests that relate ESG ratings to returns. They find no difference between the stock returns during the COVID-19 pandemic in the initial data when they classify the data to high E&S and low E&S scores. However, they find higher returns for high E&S score stocks in the re-written data. They further show that the data rewriting is an ongoing rather than a one-off phenomenon.

3. Literature Review—Empirical Evidence

In this section, we discuss empirical evidence from previous studies for the relationship between ESG investing and asset returns. We first summarize the studies that find a neg-

“One important concern in this literature is that many brown stocks are concentrated in particular industries, so the results might reflect risk differences that are uncontrolled by the models and are attributable to industry-specific risks.”

ative association, then those that find no association, and finally those that find a positive association. The empirical strategy for most studies is to define two groups of assets (green and brown), and then compare their risk-adjusted returns. For example, green stocks can be those with higher ESG ratings and brown stocks can be those with lower ESG ratings. The main challenge in this line of research is to find risk-adjusted expected returns. If we want to compare the expected returns of green stocks with brown stocks, we should make sure the expected return does not include any risk differences that are not

controlled for. In the language of CAPM, this line of research tries to correctly estimate the alpha. Berk and van Binsbergen (2021) argue that one important concern in this literature is that many brown stocks are concentrated in particular industries, so the results might reflect risk differences that are uncontrolled by the models and are attributable to industry-specific risks.

Negative performance from ESG investing

Hong and Kacperczyk (2009) find that “sin stocks” (tobacco, alcohol, and gambling firms) are less widely held by norm-constrained institutions such as pension plans as compared to mutual or hedge funds that are natural arbitrageurs. Sin stocks also have higher expected returns than otherwise comparable stocks, consistent with them being neglected by norm-constrained investors and facing greater litigation risk heightened by social norms.



Raghunandan and Rajgopal (2022), show that ESG funds appear to underperform financially relative to other funds within the same asset manager and year, and to charge higher fees.

Bolton and Kacperczyk (2021) argue that firms with higher total carbon dioxide emissions (E in ESG) earn higher returns, controlling for size, book-to-market, and other return predictors. Barber, Morse, and Yasuda (2021) show that investors derive non-pecuniary utility from investing in dual-objective Venture Capital (VC) funds, thus sacrificing returns.

Baker, Bergstresser, Serafeim, and Wurgler (2018) and Zerbib (2019) focus on the bond market instead of the stock market. Baker, Bergstresser, Serafeim, and Wurgler (2018) study green bonds, which are bonds whose proceeds are used for environmentally sensitive purposes. After an overview of the US corporate and municipal green bonds markets, they study pricing and ownership patterns using a simple framework that incorporates assets with non-pecuniary utility. They find that green municipal bonds are issued at a premium to otherwise similar ordinary bonds. Zerbib (2019) used green bonds as an instrument to identify the effect of non-pecuniary motives, specifically pro-environmental preferences (E in ESG), on bond market prices. They found a small negative premium: the yield of a green bond is lower than that of a conventional bond. On average, the premium is -2 basis points—or (negative) two hundredths of one percent.

Chava (2014) focuses both on the equity and bond markets to analyze the impact of a firm’s environmental profile on its cost of equity and debt capital. Using the implied cost of capital derived from analysts’ earnings estimates, Chava found that investors demand significantly higher expected returns on stocks excluded by environmental screens (such as hazardous chemicals, substantial emissions, and climate change concerns) compared to firms without such environmental concerns. Lenders also charge a significantly higher interest rate on the bank loans issued to firms with these environmental concerns. These results suggest that exclusionary socially responsible investing and environmentally sensitive lending can have a material impact on the cost of equity and debt capital of affected firms.

El Ghouli et al. (2011) examine the effect of corporate social responsibility (CSR) on the cost of equity capital for a large sample of US firms. They find that firms with better CSR scores enjoy cheaper equity financing. In particular, their findings suggest that investment in improving responsible employee relations (S in ESG), environmental policies (E in ESG), and product strategies contribute substantially to reducing firms' cost of equity. Their results also show that participation in two "sin" industries, namely, tobacco and nuclear power, increases firms' cost of equity. These findings support arguments in the literature that firms with socially responsible practices have a higher valuation and lower risk.

No significant difference in performance from ESG investing

Fish, Kim, and Venkatraman (2019) ask whether or not an investor would sacrifice a portfolio's performance in order to achieve a socially responsible portfolio. They collected ESG scores from Bloomberg and historical performance on various securities in both the United States and Europe in order to construct various portfolios. They show that minimal differences existed between the returns of the ESG-weighted portfolios and the non-weighted portfolios.



Hartzmark and Sussman (2019) find that investors value sustainability: being categorized as low sustainability resulted in net outflows of more than \$12 billion while being categorized as high sustainability led to net inflows of more than \$24 billion. Experimental evidence suggests that sustainability is viewed as positively predicting future performance, but they do not find evidence that high-sustainability funds outperform

low-sustainability funds. The evidence is consistent with the view that non-pecuniary motives influence investment decisions.

Unlike other studies, Berk and van Binsbergen (2021) do not estimate risk-adjusted returns. Instead, they identify the effect of ESG scores on expected returns by following firm changes in ESG status. When firms are either included or excluded from the leading socially conscious US index (FTSE USA 4Good) they find no detectable effect on the cost of capital (expected returns). They conclude that current ESG investment strategies have had little impact and will likely have little impact in the future.

Positive performance from ESG investing

Edmans (2011) focuses on employee satisfaction (E in ESG) and stock returns and shows evidence that the "100 Best Firms to Work for in America" outperformed the industry benchmarks between 1984 and 2009.

Khan (2019) finds nonfinancial performance measures, such as ESG measures, are potentially leading indicators of companies' financial performance. He developed new corporate

governance and ESG metrics. The new metrics predicted stock returns in a global investable universe over the tested period, which suggests potential investment value in the ESG signals.

Nagy, Kassam, and Lee (2015) find that ESG can add alpha. They find portfolios that incorporate ESG as an investment signal outperformed the MSCI World Index over the sample period while also increasing their ESG profile.



Gompers, Ishii, and Metrick (2003) argue shareholder rights (G in ESG) vary across firms. Using the incidence of 24 governance rules, they constructed a “Governance Index” to proxy for the level of shareholder rights at about 1,500 large firms during the 1990s. An investment strategy that bought firms in the lowest decile of the index (strongest rights) and sold firms in the highest decile of the index (weakest rights) would have earned abnormal returns of 8.5 percent per year during the sample period. They found that firms with stronger shareholder rights had higher firm value, higher profits, higher sales growth, lower capital expenditures, and made fewer corporate acquisitions.

Kempf and Osthoff (2007) ask whether investors can increase their performance by incorporating socially responsible screens into their investment process. To answer this question, they implement a simple trading strategy based on socially responsible ratings from KLD Research and Analytics: they buy stocks with high socially responsible ratings and sell stocks with low socially responsible ratings. They find that this strategy leads to abnormally high returns. The maximum abnormal returns are reached when investors employ the best-in-class screening approach, use a combination of several socially responsible screens at the same time, and restrict themselves to stocks with extreme socially responsible ratings.

4. Why is the Empirical Evidence Mixed?

There are three plausible reasons for the mixed empirical evidence: 1) there is a transition period; 2) there is no standard ESG measure; and 3) there are uncontrolled risks.

Transition period

Cornell (2021) argues we might observe contrasting evidence for the relationship between ESG ratings and returns during a transition period to a new equilibrium. For example, when the investors begin to realize that moving to a greener portfolio will reduce ESG-related risks or more investors gain non-pecuniary utility from holding green assets, green asset prices and investors holding the assets earn excess returns. So, the results of the empirical studies may quite depend on what period is studied.

Pedersen, Fitzgibbons, and Pomorski (2020) find that if an ESG score is a signal for higher profitability of the firms and a significant fraction of investors are unaware of this, a stock with a higher ESG score will outperform the one with a low ESG score. The reason is that the higher profitability of these stocks is not fully understood by the market, so they are underpriced.

No standard ESG measure

Berg, Koelbel, and Rigobon (2019) document that ESG ratings from six dominant providers (KLD, Sustainalytics, Moody's ESG, S&P Global, Refinitiv, and MSCI) disagree substan-



tially. This disagreement also contributes to the ambiguity in empirical evidence for the relationship between ESG ratings and returns because it is difficult to determine which firms are “high” ESG firms. Avramov, Cheng, Lioui, and Tarelli (2021) build a theoretical model to show how an increase in uncertainty surrounding ESG scores may result in observing a positive relationship between expected returns and ESG scores.

Uncontrolled risks

Berk and van Binsbergen (2021) argue that one important issue with many empirical studies investigating the relationship between ESG ratings and equity returns is that the risk of a firm and thus the risk-adjusted return of that firm should be correctly measured. If not, the observed “sin” premium could well be attributable to an incorrect adjustment for risk (Blitz and Fabozzi 2017).

Conclusion

There is a growing demand for ESG information and investing. In response, many jurisdictions (e.g., the US Securities and Exchange Commission) are considering implementing ESG reporting mandates to encourage ESG investing by helping investors more accurately identify firms with better ESG metrics (green firms) from those with inferior ESG performance (brown firms). The ultimate goal of mandating enhanced ESG reporting is to drive change by giving firms and incentive to improve their ESG activities. One potential channel for this policy to achieve its goal is through changing the cost of capital.

In this essay, we examine the theoretical literature on ESG investing. Specifically, we discuss how each framework can potentially justify an ESG-reporting mandate, and what the frameworks predict for returns to ESG investing. We highlight two dominant conceptual frameworks.

First, investors have a non-pecuniary preference for green firms, and thus they are willing to accept lower returns for holding stocks and bonds that are issued by green firms. If investors can materially increase the asset prices of green firms, these firms will face lower financing costs (lower cost of capital) so that they can invest more and grow more, which drives the intended social outcome, i.e., increased ESG corporate practices. In this scenario, mandating ESG reporting may be justified if investors have difficulty identifying green firms from the brown ones, and if firms provide better ESG information to investors under the mandatory regime.⁷ However, we find that the empirical results examining the returns to ESG investing are inconclusive, so we do not know whether reporting regulations operating through the channel of investors' preferences will be effective or not in indirectly influencing corporate ESG practices.

Second, green firms may have higher profitability and/or lower ESG-related risks, while investors are broadly uninformed of this material information. In this case, green assets will be underpriced and so provide higher expected returns for investors who hold them. In this scenario, mandatory ESG reporting might be justified as long as firms provide better ESG information to investors under the mandatory regime.

However, since we find inconclusive empirical results bearing upon this relationship, it is unclear whether the argument for remediating this possible information problem is relevant.

In sum, since there is no agreement in the literature on how ESG investing is associated with asset returns, advocates for mandating enhanced ESG reporting have not yet made a credible case for how this policy can have any net positive social impact.

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Endnotes

- 1 At the start of 2020, *Global Sustainable Investment Review* reports that global sustainable investment reached US\$35.2 trillion in five major markets, which make up a total of 35.9 percent of total assets under management. Sustainable investment assets are continuing to grow rapidly in all regions, with Canada experiencing 48 percent growth over two years (2018-2020), the largest increase among the five major markets.
- 2 ESG investing can also be called corporate social responsibility (CSR) investing, or sustainability investing.
- 3 See Christensen, Hail, and Leuz (2021) for all potential costs and benefits from mandatory ESG reporting.
- 4 This is related to what Christensen, Hail, and Leuz (2021) refer to as the goal of the “broad approach” to this policy.
- 5 Another example: Lodh (2020, February 25).
- 6 The assumption here is that there is a disutility to holding shares of brown firms, and that investors must be compensated for this disutility.
- 7 Whether more intensive ESG behavior by firms has net social benefits is a separate and relevant empirical issue.

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About the author

Steven Globerman is Professor Emeritus at Western Washington University, and a senior fellow and Addington Chair in Measurement at the Fraser Institute. Previously, he held tenured appointments at Simon Fraser University and York University and has been a visiting professor at the University of California, University of British Columbia, Stockholm School of Economics, Copenhagen School of Business, and the Helsinki School of Economics. He has written more than 200 academic articles and monographs and is the author of the book *The Impacts of 9/11 on Canada-U.S. Trade* as well as a textbook on international business management. He served as a researcher for two Canadian Royal Commissions on the economy as well as a research advisor to Investment Canada on the subject of foreign direct investment. He earned his BA in economics from Brooklyn College, his MA from the University of California, Los Angeles, and his PhD from New York University.

