



WORKING PAPER

Does ESG Help or Hurt Returns?

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Asset owners and portfolio managers overseeing trillions of dollars are increasingly seeking to incorporate environmental, social, and governance (ESG) considerations into their investment process. However, investors have little guidance in how to incorporate ESG in portfolio choice, and worse, opinions differ dramatically across academics and practitioners about whether ESG will help or hurt their performance. Some argue that ESG considerations must necessarily lower expected returns (e.g., Hong and Kacperczyk, 2009) while others argue that the “outperformance of ESG strategies is beyond doubt” (Financial Times 9/7/2017).

To reconcile these opposing views, we develop a theory that shows both the potential costs and benefits of ESG-based investing. A key premise of our theory is that each stock’s environmental, social, and governance (ESG) score plays two roles: 1) providing information about firm fundamentals and 2) affecting investor preferences. Our theory explains how the increasingly widespread adoption of ESG affects portfolio choice and equilibrium asset prices. Further, we estimate the magnitude of these effects empirically.

Our framework provides a useful way to conceptualize and quantify the costs and benefits of ESG investing. Indeed, we show that a responsible investor’s decision can be conceptualized by the ESG-efficient frontier, a graphical illustration of the investment opportunity set. Specifically, the ESG-efficient frontier shows the highest attainable Sharpe ratio (SR) for each ESG level. The benefit of ESG information can be quantified as the resulting increase in the maximum Sharpe ratio (relative to a frontier based on only non-ESG information). The cost of ESG preferences can be quantified as the drop in Sharpe ratio when choosing a portfolio with better ESG characteristics than those of the portfolio with maximum Sharpe.

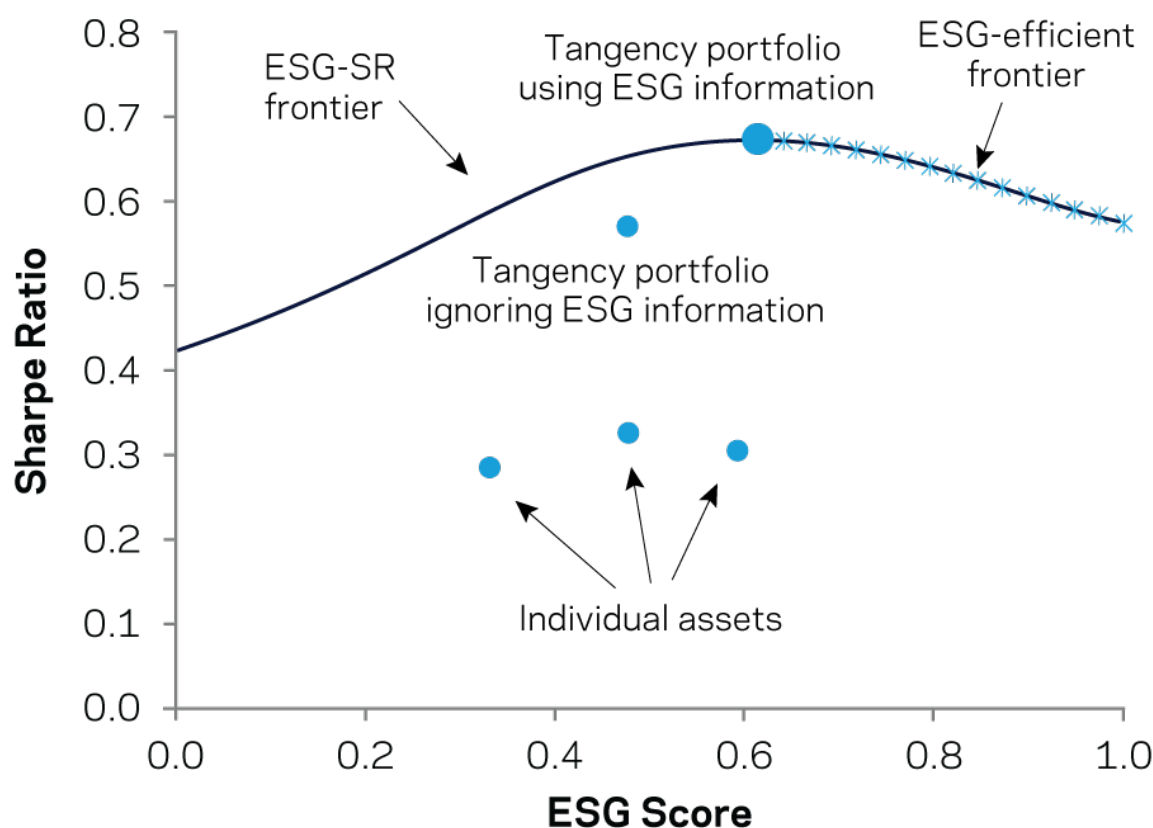


Figure: ESG Efficient Frontier

In addition to its practical appeal, the ESG-efficient frontier is based on a rigorous theoretical framework. We explicitly derive the frontier and the corresponding set of optimal portfolios. The optimal portfolios are spanned by four “funds,” one of which captures stocks’ ESG scores. This framework can be viewed as a theoretical foundation for what is called “ESG integration,” meaning that ESG characteristics are used directly in portfolio construction (rather than as screens).

Empirically, we find that when ESG is proxied for by a measure of governance, the maximum SR is achieved for a relatively high level of ESG. Increasing the ESG level even further leads to only a small reduction in SR, implying that ethical goals may be achieved at a small cost. When we impose realistic constraints on the portfolio, we see a downward shift in the ESG-SR frontier. This is an expected outcome, because imposing constraints reduces the maximum Sharpe ratio that one can attain for any given ESG score. More surprisingly, screens that remove the lowest-ESG assets from the investment universe can lead investors who maximize their Sharpe ratio to choose a portfolio with lower ESG scores than those chosen by unconstrained investors who allow investments in low-ESG assets. This result highlights nuances in optimally incorporating ESG into portfolio construction and suggests improvements to traditional approaches based on simple screening.

Turning to equilibrium asset prices, we derive an ESG-adjusted CAPM, which helps describe market environments that make ESG predict returns positively or negatively. To our knowledge, our model is the first to explicitly model heterogeneity in how investors use ESG information. We allow for investors to have preferences over ESG and for the possibility that investors can find investment intelligence from ESG information. We argue that this is a realistic feature, because not only do we observe large AUM deployed with ESG in mind, but ESG is increasingly discussed also as a potential “alpha” signal. This heterogeneity results in a range of possible equilibria depending on the relative importance of each investor type, leading to a relation between ESG and expected returns that is positive, negative, or neutral.

We test the empirical predictions of the theory using a range of ESG proxies that reflect different aspects of our model and that may represent different clienteles of investors. Our proxy G has historically offered ESG investors strong performance in addition to the favorable ESG characteristic, perhaps because good G predicts strong future fundamentals, while attracting modest investor demand, leading to relatively cheap valuations and positive returns. In contrast, our proxies for E, S, and overall ESG are weaker predictors of future profits, and investor demand appears stronger for these proxies, which may help explain the higher valuations of stocks that score well on these metrics, and the low or insignificant returns.

In conclusion, we think that our model provides a useful framework for responsible investment that we hope will be useful both for future research on the costs and benefits of ESG investing and for ESG applications in investments practice.

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