



# WORKING PAPER

---

## Does ESG Help or Hurt Returns?

December 7, 2020

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.

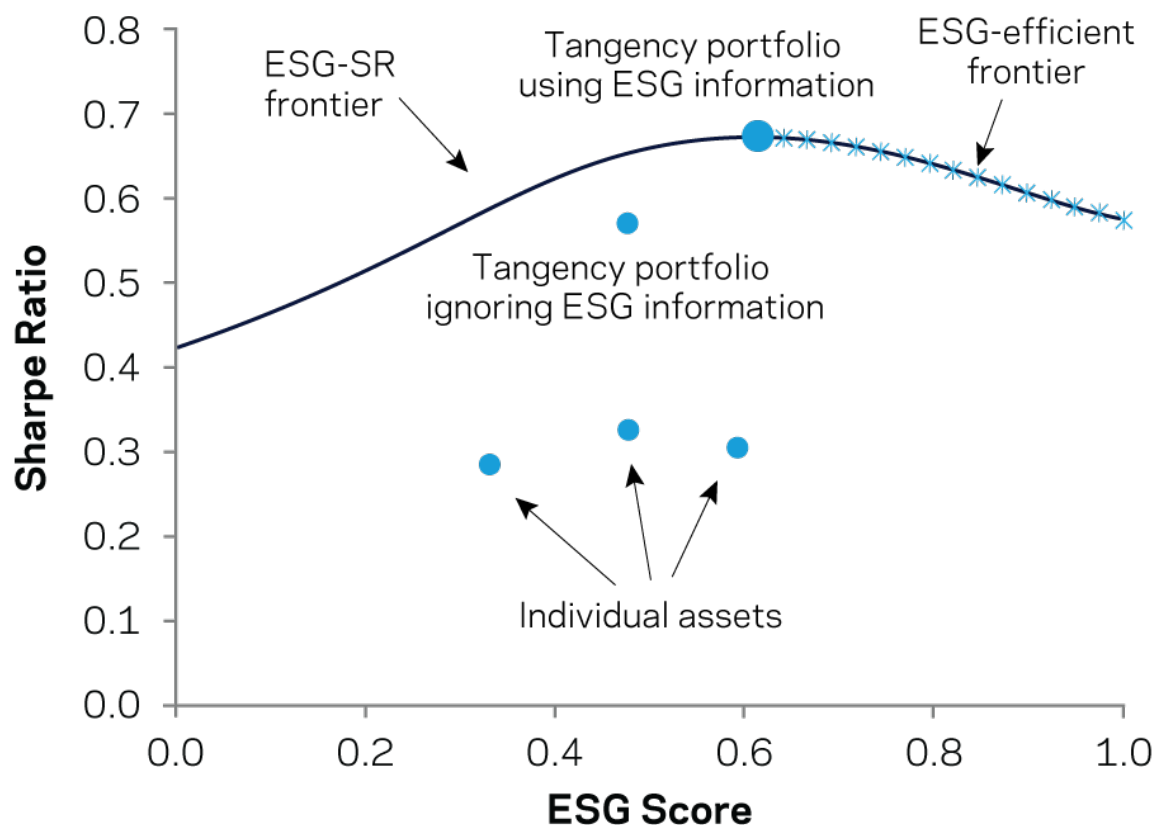


Figure: ESG Efficient Frontier

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.

*of analysis as described herein. The views expressed here are those of the authors and not necessarily those of AQR.*

This document is not intended to, and does not relate specifically to any investment strategy or product that AQR offers. It is being provided merely to provide a framework to assist in the implementation of an investor's own analysis and an investor's own view on the topic discussed herein.

This document has been provided to you solely for information purposes and does not constitute an offer or solicitation of an offer or any advice or recommendation to purchase any securities or other financial instruments and may not be construed as such. The factual information set forth herein has been obtained or derived from sources believed by the author and AQR Capital Management, LLC ("AQR") to be reliable but it is not necessarily all-inclusive and is not guaranteed as to its accuracy and is not to be regarded as a representation or warranty, express or implied, as to the information's accuracy or completeness, nor should the attached information serve as the basis of any investment decision. This document is not to be reproduced or redistributed to any other person. The information set forth herein has been provided to you as secondary information and should not be the primary source for any investment or allocation decision. Past performance is not a guarantee of future performance. Diversification does not eliminate the risk of experiencing investment losses.

This material is not research and should not be treated as research. This paper does not represent valuation judgments with respect to any financial instrument, issuer, security or sector that may be described or referenced herein and does not represent a formal or official view of AQR. The views expressed reflect the current views as of the date hereof and neither the author nor AQR undertakes to advise you of any changes in the views expressed herein.

The information contained herein is only as current as of the date indicated, and may be superseded by subsequent market events or for other reasons. Charts and graphs provided herein are for illustrative purposes only. The information in this presentation has been developed internally and/or obtained from sources believed to be reliable; however, neither AQR nor the author guarantees the accuracy, adequacy or completeness of such information. Nothing contained herein constitutes investment, legal, tax or other advice nor is it to be relied on in making an investment or other decision. There can be no assurance that an investment strategy will be successful. Historic market trends are not reliable indicators of actual future market behavior or future performance of any particular investment which may differ materially, and should not be relied upon as such. Diversification does not eliminate the risk of experiencing investment losses.

The information in this paper may contain projections or other forward-looking statements regarding future events, targets, forecasts or expectations regarding the strategies described herein, and is only current as of the date indicated. There is no assurance that such events or targets will be achieved, and may be significantly different from that shown here. The information in this document, including statements concerning financial market trends, is based on current market conditions, which will fluctuate and may be superseded by subsequent market events or for other reasons.