

Robustness of Sustainable Investments

MASTER THESIS

MSc Quantitative Finance UZH/ETH

Supervisor: Prof. Dr. Marc Chesney

Author: Alexandra Egg

Zürich October 28, 2016

Executive Summary

The objective of this master thesis is to investigate whether sustainable companies are more resilient towards economic cycles than their less socially responsible peers. The demand in socially responsible investments has experienced steady growth in the past twenty years, mainly caused by an increasing public consciousness of social and ecological issues. Although socially responsible investors include non-monetary criteria in their investment decisions they still seek to earn an adequate return on investment. Hence, it is important to gain knowledge about the relationship of sustainability criteria (the ESG criteria¹) and the financial performance² of investments. Therefore it is not surprising that there exists a large body of literature on this topic. However, not many studies focus on the robustness of sustainable investments and this research gap is sought to be reduced by this master thesis.

To assess the above stated research questions the returns of 403 publicly traded stocks are analysed over a ten year period (2006 - 2015). The equities in the sample are divided into portfolios according to their ESG rating scores and categories. The ratings are conducted by Vigeo Eiris (hereafter named “Vigeo”) and provided by Vontobel Asset Management. The evaluation of portfolios built according to only one ESG criterion (e.g. environment or corporate governance) allows characterising the possible influence of a single rating category on financial performance. Many of the existing research papers analyse the performance of broad equity funds and are not able to provide insights on individual sustainability criteria. Whereas this study helps differentiate the general perception of the relationship between ESG criteria and financial performance.

Because the relationship between sustainability awareness and financial robustness is multi-dimensional, different research approaches are used for its examination. Firstly, the general nature of the relationship between sustainability considerations and financial performance is assessed through a comparison of equity portfolios with different levels of environmental, social, and governance awareness. The portfolio’s financial performance is measured by their absolute and risk-adjusted returns over a ten year period. The results indicate that for the data sample used in this study, sustainability ratings and financial performance are generally positively related. Furthermore, the hypothesis that sustainable investments earn more robust returns is confirmed. The results show that portfolios with a high level of social responsibility perform better during years of economic turmoil in both absolute and risk-adjusted terms. Hence, it can be concluded that they are less susceptible to economic downturns than portfolios with low ESG consciousness.

Secondly, the question of whether and how sustainability considerations affect a portfolio’s return volatility is investigated. This assessment is done by means of lower partial moments and conditional volatility models. The knowledge of a financial asset’s volatility behaviour is essential to adequately price and evaluate it. Therefore it is of major importance for financial investors and markets in general. Nonetheless, the relationship between sustainability considerations and stock return volatility has so far received only limited attention from academia. Although the variance as a standard measure for risk has been included in risk-adjusted performance analysis, there are not many research papers that apply a more sophisticated approach to evaluate volatility. The volatility investigations conducted in this master thesis reveal that

¹ESG stands for environmental, social and governance.

²In this thesis, the term “financial performance” is used with respect to a firm’s or a portfolio’s stock price performance.

portfolios with high sustainability levels also show high volatility levels. An examination of conditional volatility characteristics implies that portfolios with good sustainability practices are not only inherent of higher volatility levels but also have a comparatively stronger risk sensitivity. This result is difficult to explain and opens a new field of research questions. The analysis of risk levels from sustainable portfolios with a conditional variance model is a relatively new approach and this thesis contributes to the scarce literature on this topic.

The implications of the obtained results are relevant not only for the financial markets but also for society and environment in general. A positive relationship of sustainability criteria and financial returns should drive the interest in sustainable investments. An augmented demand in investment products with high ESG ratings will ultimately lead to better social, environmental and ethical practices at company level. And this development would be beneficial for our planet as a whole.

Abstract

The question whether portfolios with high environmental, social and governance (ESG) ratings are more resistant towards economic downturns than portfolios with low ESG ratings is analysed in this master thesis. Socially responsible investors include non-monetary criteria into their investment decisions but they also expect to earn an adequate return on investment. Therefore it is crucial to know how sustainability criteria are related to financial performance. Although there are many studies concerning sustainability in finance there do not exist many research papers on the robustness of sustainable investments. On account of the multi-dimensional nature of the relationship between sustainability and financial robustness different research approaches were chosen for its examination. On one hand, the prevailing nature of the relationship between sustainability considerations and financial performance is assessed through a comparison of equity portfolios with different levels of ESG awareness over a ten year period. On the other hand, the influence of sustainability considerations on a portfolio's return volatility is investigated via conditional volatility models. The results obtained imply that good sustainability ratings mostly lead to higher risk-adjusted financial returns and further affirm a positive risk-return relationship of sustainable investments.