

Abstract

This study aims to examine the relationship between ESG performance and the value at risk of a stock, by gathering evidence from the IDX ESG Leaders index. The measure for ESG performance is the ESG combined score (provided by Refinitiv) and appearance in the IDXESGL index, while the value at risk is obtained using the Monte Carlo simulation approach, which incorporates the geometric Brownian process for modelling returns. The objective of this research is to address the following questions: 1) Is there a difference in value at risk between stocks with higher ESG performance and stocks with lower ESG performance? 2) Does ESG performance affect the value at risk of a stock? The former will be addressed using an independent sample test, while the latter will be addressed using a GLS regression analysis. The sample consists of 212 observations from 14 December 2020 to 14 December 2022, with a separate sample consisting of 670 unique stocks from 14 December 2020 to 18 March 2024 included retrospectively to provide additional evidence. The findings support both hypotheses. First, independent sample tests from both samples provide evidence to suggest that stocks with higher ESG performance have lower value at risk compared to stocks with lower ESG performance. Second, ESG performance, whether measured in terms of ESG score or proxied by appearance in the IDXESGL index, is negatively associated with value at risk, meaning that ESG performance negatively affects value at risk.

Keywords: ESG performance, ESG score, IDX ESG Leaders index, ESG risk, value at risk (VaR), Monte Carlo simulation, investment risk.