

ESG Report

Nina Röhrbein reports on research into the implications that a ESG strategy can have upon asset allocation

ESG risk in a portfolio context

The implications of environmental, social and governance (ESG) factors on strategic asset allocation have been receiving plenty of attention in recent months. Mercer, for example, launched a research project to assess the implications of climate change on strategic asset allocation decisions last year; the results are expected this October.

Munich-based Risklab, the specialist investment and risk advisory subsidiary of Allianz Global Investors, has extended the focus to all ESG components in its top-down 'ESG Risk Factors in a Portfolio Context' study.

The main driver behind this was to be able to develop a way of quantifying sustainable investments as requested by institutional investors and to establish whether they generate additional return, and reduce risks or even returns, according to Steffen Hörter, business director at Risklab.

"So far research has mainly focused on ESG compliant equity investments from a bottom-up investment process perspective with a focus on stock selection. Little has been done on the link between ESG and the risk/return profile of an entire portfolio," he says. "The evidence on the performance of social responsible investment (SRI) funds has been mixed and usually there is no bottom-up link between ESG research and the portfolio."

Other top-down strategic asset allocation research has often been rather qualitative and focused on one element within ESG, usually the environmental, as it relates to climate



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Steffen Hörter

change, according to Risklab.

"The connection to the portfolio context and strategic asset allocation has been missing, which we view as the most important factor driving long-term portfolio returns," says Hörter. "Strategic asset allocation is estimated to account for up to 90% of all portfolio risks, outweighing market timing and stock selection."

The objectives of the Risklab ESG study were the integrated modelling of ESG risk factors in a portfolio context – the focus being the analysis of long-term risks on a 20-year horizon, under the assumption that ESG risks do not have an impact on expected returns. Specifically, the study aimed to determine to what degree ESG factors influence equity investment risk.

The study also brought up the lack of a homogeneous definition of what constitutes an ESG risk. Another issue affecting research into the area, according to Hörter, is the availability of data on which to run stochastic models.

"There simply is no global norm by which ESG risks can be quantified," he explains. "While the environmental risk category provides comparatively good data and corporate governance risk data is also available, social risks are much more difficult to define. They can cover everything from child labour or human rights, to employee satisfaction. However, recently, ESG data has become more available Bloomberg or RiskMetrics." In the end, Risklab chose sick days as its social risk criteria and spot price changes of carbon emission rights as the environmental risk factor, while corporate governance ratings were provided by RiskMetrics.

The identification of a suitable risk factor with a valid data source followed by its integration into stochastic capital market scenarios formed the first part of the study. The second part was the portfolio analysis based on an optimisation framework.

"For the spot price volatility of carbon emission rights, for example, we applied a so-called

regime switching stochastic model," says Hörter. "This model assumes that the price volatility for emission rights can remain low for a long time and with a low probability jumps to extreme volatility levels and price hikes. The risk sensitivity is based on the relative sector footprint. For our environmental risk factor it is derived from the carbon emission footprint of the MSCI All Countries World index for different industries based on monthly ratings from Trucost.

"Together, they assess how risk sensitive equity investments are to changes in the emission rights spot price and how that impacts on their tail risk. In principle, the approach of quantifying social and corporate governance factors was similar but with partially different stochastic models."

The results were at first quantified with regard to equities and then transferred onto the portfolio level.

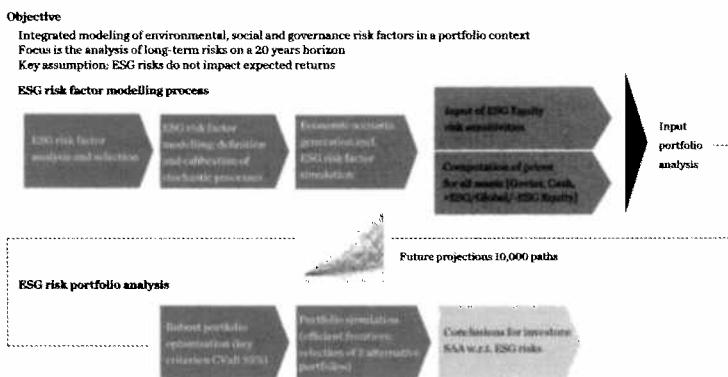
As a reference point, Risklab took a conservatively balanced portfolio with 30% global equities and 70% conservative assets, mainly government bonds and some money markets. The impact of each factor on equity risk was analysed using two groups: positive ESG equity where the company management actively tried to minimise the ESG risk and the negative ESG equity side whereby the risks are ignored.

"We replaced the 30% global equity of the reference portfolio with either positive or negative ESG equity as an asset class," says Hörter. "The result showed that when the positive equity replaced the global equities, the amount of portfolio risk could either be substantially reduced with the same returns, or portfolio returns could be increased with the same amount of risk."

The conclusion is that in the long term, say over 20 years, ESG factors are expected to have significant tail-risk impact on equity investments. Therefore, investors should strive to optimise their global equity investments and minimise exposure to ESG risks, which can be achieved by choosing equity investments, where corporate management proactively mitigates these risk factors. On the basis of a comparatively conservative portfolio with a global equity allocation of approximately one third, optimised positive ESG equity allocation has been found to offer either a portfolio tail risk reduction (CVaR 95%) of around 30% at the same levels of expected return, or an increase of expected portfolio return by 0.3% points at similar levels of expected portfolio risk. The effects amplify even more when comparing riskier portfolios, for example when the equity allocation is even higher.

Risklab is considering a possible extension of the study. According to Hörter, it is likely that the study will in future include other asset classes, starting with corporate bonds. "It is also under discussion whether to quantify the environmental risk with other factors, such as for example the oil price or energy efficiency," he says. "Investors need to understand what sustainability delivers, what opportunities it can introduce to their portfolios and what the optimum asset allocation is."

Cornerstones of Risklab's ESG study



ESG risk factor screening and short listing



Source for both: risklab GmbH