

Environmental, Social and Governance Impact on Corporate Tail Risks

Name and Contact Information of the Advisors

- Prof. dr., W.F.M., Dennis, Bams
 - Research group: SBE – Finance department
 - Address for correspondence: PO Box 616, 6200 MD MAASTRICHT
 - Telephone: + 31 6 504 55 780
 - E-mail: w.bams@maastrichtuniversity.nl
- Dr., Peiran Jiao
 - Research group: SBE – Finance department
 - Address for correspondence: PO Box 616, 6200 MD MAASTRICHT
 - Telephone: + 31 43 388 3556
 - E-mail: p.jiao@maastrichtuniversity.nl

Description of the Project

A large number of recent studies investigate the impact of ESG and CSR on corporate financial risks, including systematic risk, credit risk, legal risk, and downside tail risk (Seltzer, Starks and Zhu, 2022; Hoepner, Oikonomou, Sautner, Starks and Zhou, 2018; Ng and Rezaee, 2015; Becchetti, Ciciretti and Hasan, 2015; Chava, 2014).

Most of the results in these papers document a positive effect of corporate ESG behaviour on corporate risk mitigation. In particular, good ESG behaviour signals good stakeholder management. In crisis periods, investors prefer such firms. Other studies conclude that ESG behaviour has no significant or even an opposite influence on corporate financial risks (Ng and Rezaee, 2015; Becchetti, Ciciretti and Hasan, 2015). To be more specific, Ng and Rezaee investigate how Environmental, Social and Governance scores separately effect the cost of equity and find that the three dimensions of ESG do not impose the same significant influence. There is an important trade-off between risk mitigation and cost, where it concerns the corporate ESG initiatives. Too little ESG is harmful, as a firm may not deal adequately with ESG risk, whereas too much ESG is costly as the marginal effect of improved ESG decreases.

ESG is also a risk driver in itself. Examples include extreme environmental incidents, such as oil spills or social incidents, such as poor treatment of labour force. In addition, the proposal of ever more severe regulatory requirements on ESG have a potential significant effect on the long-term sustainability of a corporation. In order to understand the detailed impact, the focus in this research project is on the separate aspects of ESG and their impact on downside tail risks of firms. Tail risks provide more information than simply second-order volatility effects for the situation when an extreme event occurs.

The three different ESG dimensions have different effects on firm-level tail risk. Following the measures used by Ng and Rezaee (2015), as well as by Andersen and Bams (2022), we construct alternative variables to capture the Environmental, Social and Governance behaviour of firms. Subsequently, we use alternative measures for tail risks including the model-free implied skewness as a proxy of the tail risks (Bakshi, Kapadia, Madan, 2003). As an alternative, following Andersen and Bams (2022), we apply the Merton model at the firm level to determine changes in a firm's probability of default. We identify stress periods, such as the financial crisis in 2007 and the COVID pandemic in 2020, to determine the impact on firm's tail risk.

This project contributes to the following areas. First, it reconciles and extends recent results by introducing a more granular representation of ESG. It provides in-depth information about and effects from the different dimensions of ESG. Second, since in recent years sudden extreme incidents happen more often, tail risks has become a more prominent measure to consider. The aim of this research project is to present novel ways to study mitigating effect of ESG risk. Third, even though investors pay more attention to aggregate ESG ratings and ESG behaviour, they weigh each aspect of ESG differently. We provide recommendations for firms how to adjust their ESG strategy to reduce the risk exposure to extreme events.

References

- Andersen, I. and D. Bams (2022), Environmental Management: An Industry Classification, *Journal of Cleaner Production*, 344
- Bakshi, G, Nikunj K., and D. Madan (2003), Stock return characteristics, skew laws, and the differential pricing of individual equity options, *Review of Financial Studies*, 16(1), 101–143.
- Becchetti, L., Ciciretti, R., and I. Hasan (2015), Corporate social responsibility, stakeholder risk, and idiosyncratic volatility, *Journal of Corporate Finance*, 35, 297-309.
- Chava, S. (2014), Environmental externalities and cost of capital, *Management science*, 60(9), 2223-2247.
- Hoepner, A. G., Oikonomou, I., Sautner, Z., Starks, L. T., and X. Zhou (2018), ESG shareholder engagement and downside risk, *ECGI Finance Working Paper N° 671/2020*.
- Ilhan, E., Sautner, Z., and G. Vilkov (2021), Carbon tail risk, *The Review of Financial Studies*, 34(3), 1540-1571.
- Ng, A. C., and Z. Rezaee (2015), Business sustainability performance and cost of equity capital, *Journal of Corporate Finance*, 34, 128-149.
- Seltzer, L. H., Starks, L., and Q. Zhu (2022), Climate regulatory risk and corporate bonds (No. w29994), National Bureau of Economic Research.