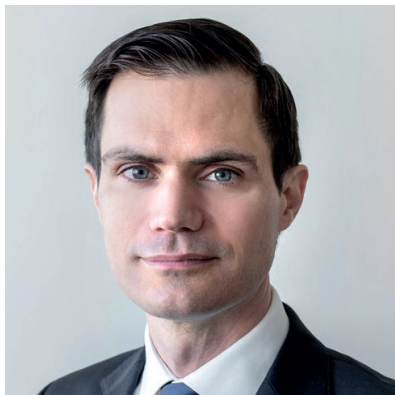


Integrating biodiversity risks into investment decisions



Gabriel Micheli
Senior Investment Manager at
Pictet Asset Management

Biodiversity loss has long concerned scientists and conservationists. But new research shows it has now started to become a material financial risk for listed companies and their investors. Several studies published in the past year have found that biodiversity-related risks are beginning to affect company valuations and their financing costs. Companies with the largest negative impact on biodiversity are identified to be operating in industries such as food, material and energy. Among the sectors with the smallest footprints are telecommunications, software and semiconductors.¹

One study, published by the Swiss Finance Institute, showed that the risk premium investors demand from stocks of companies with larger biodiversity footprints has risen in the past two years.²

Based on an analysis of share returns for more than 2,000 firms from 32 countries, the researchers found that stocks experienced an additional monthly rise in risk premium of 23 basis points, or an annualised increase of 2.8 per cent, for a one-standard deviation increase in the value of their corporate biodiversity footprint.

Tellingly, the increase in the premium occurred around the time of the Kunming biodiversity summit in October 2021, which was the initial part of the COP15. While the final agreement on the Global Biodiversity Framework (GBF) was reached later in Montreal in December 2022, the Kunming meeting is considered to have laid the groundwork and contributed to increasing both investor awareness about the loss of biodiversity and the prospect of future intervention by authorities.

Our analysis of three firms on the Nature Action 100 list – those which are deemed to have a high biodiversity footprint – also shows a clear underperformance against benchmarks around and after the Kunming summit.³

The GBF includes a target that requires large companies and financial institutions to monitor and disclose their impact on biodiversity, as well as the risks they face from biodiversity loss.⁴

A separate group of researchers who examined companies in industries with a large biodiversity footprint found that investors require higher compensation for holding biodiversity-impacting firms (see chart). The researchers from Emlyon Business School and the Center for Research in Economics and Statistics found a “negative and significant” impact on their expected stock returns, or the expected average return from stocks computed from option prices.⁵

“Measuring the impact of biodiversity loss on investors’ portfolios, therefore, is a crucial consideration for investors.”

The biodiversity risk price mechanism is a complex phenomenon that will evolve over time. But this doesn’t mean businesses and investors can afford to disregard biodiversity loss as a risk factor.

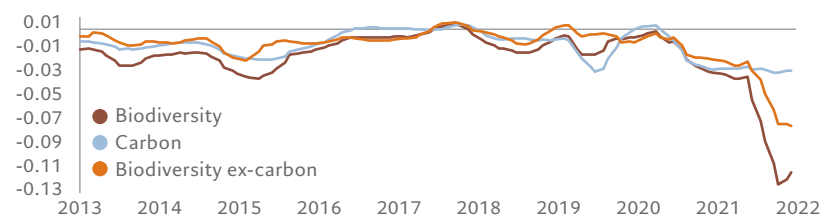
Measuring the impact of biodiversity loss on investors’ portfolios, therefore, is a crucial consideration for investors. But it is a complex undertaking. The tools currently available to assess and monitor such risks are not advanced enough.

A common shortcoming is that they all fail to account for the interactions between the biosphere and atmosphere – a delicate relationship that is essential to planetary health. The effects of climate change, for instance, manifest themselves in several different ways and across several dimensions.

Climate change negatively affects ecosystems by reducing their capacity to take up carbon; it can also lead to changes in rainfall patterns. This, in turn, affects vegetation and its ability to absorb carbon. Research from the Stockholm Resilience Centre shows this

Expected returns by factor

Impact of carbon and biodiversity-based risk factors on expected returns of companies with large biodiversity footprint (% annualised)



Source: Coqueret and Giroux. Detailed methodology is available Coqueret, Guillaume and Giroux, Thomas, A Closer Look at the Biodiversity Premium (July 21, 2023). Available at SSRN: <https://ssrn.com/abstract=4489550>

feedback loop alone will add an extra 0.4C to the world’s temperature by 2100.⁶

In an effort to account for these complexities, scientists at the Royal Swedish Academy of Sciences have developed a new metric that they believe could serve as a better way to gauge the corporate impact on biodiversity.⁷

The Earth System Impact (ESI) metric is an integrated tool that considers multiple environmental dimensions and their interactions that are missing in many of the current measurement approaches.

For example, the empirical test of ESI on the global mining sector has revealed that a number of mines which are ranked among the medium to lowest carbon emitters can be some of the most harmful from the ESI perspective.

Pictet Asset Management’s thematic equity team has developed a proprietary biodiversity impact measurement tool which provides investment managers with an estimate of species loss that a company risks causing for every dollar of revenue it generates.⁸

Our model contains a data series offering biodiversity loss estimates per dollar of revenue generated for around 20,000 supply chains – and the industries and companies that operate within them.

For any given company, the model allows us to estimate any one of a number of impacts. It can, for example, show how a Swedish pharmaceutical firm’s US operations are affecting local wildlife, breaking down the impact across several dimensions. Equally, our model can identify the biggest driver of biodiversity loss for a Swiss chemical company, and measure that company’s contribution to species loss through water use associated with practices such

as sourcing materials from Germany.

Our biodiversity impact model incorporates several scientifically established techniques and models. But it is constantly evolving and will inevitably draw on scientific insights, such as ones provided by the ESI, in order to better inform ourselves and improve our securities selection.

As we navigate the complexities of the financial landscape, the relevance of biodiversity is increasingly coming to the fore. For more insights, please scan the QR code or visit assetmanagement.pictet



FOOTNOTES:

- 1 Finance for Biodiversity Foundation
- 2 Gareil, A. et al (2023) Swiss Finance Institute Research Paper No. 23-24, European Corporate Governance Institute – Finance Working Paper No.905/2023 <https://ssrn.com/abstract=4398110>
- 3 <https://am.pictet/en/us/global-articles/2023/expertise/esg/corporate-impact-on-biodiversity>
- 4 <https://www.cbd.int/article/cop15-cbd-press-release-final-19dec2022>
- 5 Coqueret, G. and Giroux, T. (2023), A Closer Look at the Biodiversity Premium (July 21, 2023). <https://ssrn.com/abstract=4489550>
- 6 Lade, SJ et al. (2019), Potential feedbacks between loss of biosphere integrity and climate change. *Global Sustainability*, 2, E21. doi:10.1017/sus.2019.18
- 7 Researchers are part of the MISTRA Finance to Revive Biodiversity (FinBio) research programme, of which Pictet Asset Management is a founding partner.
- 8 Ibid.