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**Press Release London, Nice, Paris – 22 November 2023**

**Don’t throw the DICE out with the consultants’ advice**

**EDHEC-Risk Climate Impact Institute newly released research confirms the misleading nature of climate-risk advice given to pension funds; points to flawed use of models and a failure to communicate uncertainty; warns that both markets and investors are underestimating potential climate damages.**

UK Local Government Pension Scheme authorities have experimented with reporting on their governance and management of climate risks, responding to challenges by non-governmental organisations and anticipating regulatory developments. Drawing on advice provided by investment consultants, their reports have included simulations of the impact of climate-related scenarios on investments suggesting that portfolios would only be marginally impacted, even in high temperature scenarios.

In a newly released position paper, "**Portfolio Losses from Climate Damages: A Guide for Long-Term Investors**," Professor Riccardo Rebonato, Scientific Director of the EDHEC-Risk Climate Impact Institute, discusses the (de)merits of the advice addressed to pension trustees and engages with critics who assert that pensions are being put at risk by the flawed research and groupthink of climate economists.

His research concludes that **pension trustees have indeed been poorly served by their consultants**. He also concurs with critics’ views that the **estimates of** **likely portfolio losses due to climate change** in the authorities’ reports **are implausibly tame**.

However, Professor Rebonato’s research offers a different and more nuanced perspective about how these conclusions have been reached and the use of integrated climate economics models. Importantly:

1. **the DICE[[1]](#footnote-1) models, which were designed for policy design, have been inappropriately used** **for scenario analysis;**
2. **their** **modularity means they can be modified** to accommodate scenario analysis;
3. there is a **wide divergence of estimates by economists** regarding the severity of climate damages, challenging the idea that groupthink has led to a tame consensus view.

His research exposes **the failure to communicate the huge uncertainty in damage estimates as the most glaring flaw of the advice received by trustees** and denounces the non-sensical precision with which some of these estimates have been presented.

Echoing recent and forthcoming scientific publications by EDHEC-Risk Climate Impact Institute, the paper endorses attaching approximate probabilities to climate scenarios. Professor Rebonato warns that not only pension consultants but also financial markets appear to be sleepwalking into the climate crisis,[[2]](#footnote-2) noting:

“Financial markets might be pricing in overly optimistic climate scenarios, indicating a potential repricing risk that trustees should be aware of.”

Download the full paper here:

[Portfolio Losses from Climate Damages: A Guide for Long-Term Investors](https://climateimpact.edhec.edu/sites/ercii/files/pdf/ercii_pp_portfoliolossesfromclimatedamages_nov23.pdf)

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**About EDHEC-Risk Climate Impact Institute**

**Delivering Research Insights on Double Materiality to the Financial Community**

EDHEC-Risk Climate’s mission is to help private and public decision makers manage climate-related financial risks and make the best use of financial tools to support the transition to low-emission and climate-resilient economies.

Building upon the expertise and industry reputation developed by EDHEC-Risk Institute, EDHEC-Risk Climate’s ambitions to assist policy makers with the evaluation of climate change mitigation and adaptation policies and to become the leading academic reference point helping long-term investors manage the risk and investment implications of climate change and climate action.

EDHEC-Risk Climate also aims to help policy makers and financial supervisors assess climate-related risks in the financial system and provide them with financial tools to mitigate those risks and optimise the contribution of finance to climate change mitigation and adaptation.

The delivery of these ambitions is centred around two long-term research programmes and a policy advocacy function.

The research programmes respectively look at the **Implications of Climate Change on Asset Pricing and Investment Management** and the **Impact of Finance on Climate Change Mitigation and Adaptation**. The policy advocacy function is directed towards regulators and standardisation authorities.

Currently bringing together a dozen faculty members, researchers and staff, the Institute is endowed with a EUR20 million budget for its first five years of operation.

The philosophy of the institute is to validate its work through publication in leading scientific journals, but also to make this research available to professionals. In this regard, we participate in industry debate through position papers, published studies, online courses, webinars, seminars, and global conferences.

To ensure the dissemination of our research to the investment industry, the institute provides professionals with access to its website, <https://climateimpact.edhec.edu>. This resource is devoted to the study of the consequences of climate change on the economy and on the financial system. Our quarterly newsletter is distributed to more than 100,000 readers.

The Institute also supports the integration of climate issues into the research agenda of the School’s other financial research centres and into the product offering of the School’s business ventures. In particular, it helps the [EDHEC Infra & Private AssetsResearchInstitute](https://edhec.infrastructure.institute/) build capacity on sectoral alignment and transition plans.

**About Professor Riccardo Rebonato**

Riccardo Rebonato is Scientific Director of EDHEC-Risk Climate Impact Institute and Professor of Finance at EDHEC Business School. He heads EDHEC-Risk Climate Impact Institute’s “Impact of Climate Change on Asset Prices” research programme. He holds doctorates in Nuclear Engineering and Condensed Matter Physics. Riccardo has been Head of Derivatives Trading, Risk Management and Research for leading international financial institutions on the sell- and buy-side, and served on the boards of ISDA and GARP. He was previously a Professorial Visiting Fellow at Edinburgh University (Political Economics and Sociology), Visiting Lecturer at Oxford University (Mathematical Finance), Adjunct Professor at Imperial College, London (Financial Economics) and a Research Fellow in Physics at Corpus Christi College, Oxford. Riccardo is currently Series Editor for the Cambridge Elements in Quantitative Finance. He has published an extensive body of academic work, including more than 10 books and approximately 50 articles in refereed journals, in the areas of derivatives pricing, risk management, asset pricing and, latterly, the economics of climate change. His latest book deals with using economics to tackle climate change. *The Journal of Portfolio Management* named him 2022’s “PMR Quant Researcher of the Year”.

See here for more: <https://www.edhec.edu/en/research-and-faculty/faculty/professors-and-researchers/riccardo-rebonato>

**About DICE Models**

Integrated Assessment Models (of which Dynamic Integrated Climate-Economy, or DICE, models are a prime example) remain a very useful tool to assess climate damages. DICE models are variations of Dynamic Stochastic General Equilibrium Models whereby rational, fully-informed agents maximise their welfare (multi-period utility function) by choosing how much to consume and how much to save (and hence invest) at each period. The ‘control variable’ (the function, that is, that they can alter to maximise their welfare) is therefore either consumption, or, equivalently, investment/savings. The key observation here, however, is that the DICE quadratic damage function (whereby damages are linked to temperature changes) was designed to handle temperature anomalies between, say, 1.5°C and 3.5°C, and was never intended to be used for the 6°C or 10°C needed in scenario analysis today.

For a more detailed explanation on DICE models, see Appendix A of [the full paper](https://climateimpact.edhec.edu/sites/ercii/files/pdf/ercii_pp_portfoliolossesfromclimatedamages_nov23.pdf).

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1. Dynamic Integrated Climate-Economy; see note at end. [↑](#footnote-ref-1)
2. See: **Rebonato, R.** (2023) Asleep at the Wheel? The Risk of Sudden Price Adjustments, Novel Risks Special Issue, *The Journal of Portfolio Management*, December 2023. Available at: <https://eprints.pm-research.com/17511/102263/index.html?90126> [↑](#footnote-ref-2)