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**Press Release London, Nice, Paris, September 12, 2023**

**New EDHEC-Risk Climate paper applies natural language processing to extract climate change concerns from news**

Both climate change inaction and climate change action are expected to have an impact on the value of financial assets. It is therefore of interest to investors to quantify their exposure to climate change through the use of a *climate beta,* just as an exposure to market risk is measured by the traditional market beta. However, measuring the *climate beta* is difficult because it requires identifying a proxy variable that reflects changes in climate risk.

In a new publication “[The Impact of Climate Change News on Low-minus-High Carbon Intensity Portfolios](https://climateimpact.edhec.edu/sites/ercii/files/pdf/ercii_publication_impact_climate_change_news_0623.pdf)”, produced as part of the Amundi research chair on “Measuring and Managing Climate Risks in Investment Portfolios,” EDHEC-Risk Climate **researchers Jean-Michel Maeso and Dominic O’Kane** apply the latest natural language processing methods to construct and test such proxies from media articles over some fifteen years.

Linguistic dictionary, lexical sentiment-based techniques, and state-of-the-art transformer-based models are used to capture daily variations in climate change concerns in leading newspapers over the 2005-2021 period. The authors build indices for five major news sources and their aggregation and study the relationship between index innovations and the changes in the values of portfolios of large capitalisation companies listed in the United States.

They draw three major conclusions from their work:

* For most of the language models considered, the sensitivity of returns to an increase in the corresponding aggregated news index is negative and highly statistically significant for portfolios of high carbon intensity stocks, but not significant for portfolios of low carbon intensity stocks. The unexpected arrival of climate news across news sources is generally bad for emissions-intensive assets.
* The average return of portfolios of buying positions in low carbon intensity stocks and selling positions in high carbon intensity stocks consistently rises with the regime (low, medium, high) of the aggregated news index (across all index types), which supports the hypothesis that climate change concerns affect the longer-term performance of such portfolios.
* The value added by advanced approaches relative to a simple attention-based model is modest, indicating either that it is the number of articles, rather than their content, that drives climate risk awareness, or that further progress is needed to better extract sentiment from news sources.

Commenting on this research, Timothée Jaulin, Head of ESG Development & Advocacy at Amundi, added: “Several pioneering papers have examined the link between climate news and equity market returns with a view to isolating “climate beta” that could be used to construct climate-risk hedging portfolios with easy-to-trade assets. This study goes a step further by applying state-of-the-art methods to the task and deriving new insights.”

Frédéric Ducoulombier, Director of the EDHEC-Risk Climate Impact Institute, added “Study results are consistent with the intuition that higher carbon intensity activities have higher exposure to the risks arising from climate change and climate change action. The finding that this relationship is statistically significant and of the right sign is good news; however, as in previous studies, the economic impact does not appear significant enough for comfort – one disquieting explanation for investors is that equity prices have yet to adjust to the climate emergency.”

A copy of the publication can be downloaded via the following link:

[The Impact of Climate Change News on Low-minus-High Carbon Intensity Portfolios, EDHEC-Risk Climate Impact Institute](https://climateimpact.edhec.edu/sites/ercii/files/pdf/ercii_publication_impact_climate_change_news_0623.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 central ambition is to become a leading academic reference point for long-term investors. Our goal is to help them manage the asset pricing and investment management implications of climate change as well as mitigation and adaptation efforts.

EDHEC-Risk Climate also aims to play a noted role helping financial supervisors and policy makers assess climate-related risks in the financial system and understand their links with the real economy and advising on policy. We will help to provide the financial tools they need 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.

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.

Institute researchers support the integration of climate-related issues into the curricula of EDHEC Business School programmes.

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.

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**About Amundi**

Amundi, the leading European asset manager, ranking among the top 10 global players [1], offers its 100 million clients - retail, institutional and corporate - a complete range of savings and investment solutions in active and passive management, in traditional or real assets. This offering is enhanced with IT tools and services to cover the entire savings value chain. A subsidiary of the Crédit Agricole group and listed on the stock exchange, Amundi currently manages more than €1.95 trillion of assets [2].

With its six international investment hubs [3], financial and extra-financial research capabilities and long-standing commitment to responsible investment, Amundi is a key player in the asset management landscape.

Amundi clients benefit from the expertise and advice of 5,400 employees in 35 countries.

***Amundi, a trusted partner, working every day in the interest of its clients and society***

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1. *Source: IPE “Top 500 Asset Managers” published in June 2023, based on assets under management as at 31/12/2022*
2. *Amundi data as at 30/06/2023*
3. *Boston, Dublin, London, Milan, Paris and Tokyo*