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Exploring the efficient frontier in physical risk reporting

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An increasing number of countries request large companies to disclose their physical climate-related risks based on regulations inspired by work of the Task Force for Climate-related Financial Disclosure (TCFD). Current reports do not lend themselves to direct comparison of physical risks across companies and by no means allow investors to build a portfolio optimised with respect to physical risks. Methods such as event-based probabilistic natural catastrophe risk assessment exist and would allow for aggregation of pertinent information, taking into account global diversification of risk. Convergence of TCFD-reporting towards such methods would enable investors and financial intermediaries to construct portfolios with respect to an efficient frontier in terms of physical risks. In the true spirit of TCFD, this would allocate capital towards companies best positioned to cope with the impacts of climate change and hence incentivise economic actors to strategically embrace climate adaptation. We present a fully transparent and easily replicable open-source and -access approach to construct such an efficient frontier and will discuss resulting risk-reward profiles and implications for corporate strategy development in the context of climate change.