Title:
Green Products: asset allocation, risk diversification benefit and hedging instruments to finance sustainable investments

Background and statement of the problem:

As concerns about climate change, environmental degradation and social responsibility have grown, investors have become increasingly interested in supporting sustainable investments. This has resulted in a rise in the demand for green products, such as green bonds and sustainable funds, which aim to finance environmentally-friendly projects and companies.

Despite the growing popularity of green products, investors may not fully understand the allocation, diversification, and hedging strategies necessary to maximize the benefits of these investments. Additionally, there may be challenges in assessing the risks associated with sustainable investments, which may differ from traditional investments.

Therefore, the problem at hand is how investors can effectively utilize green products to achieve their financial objectives while ensuring that their investments are aligned with their social and environmental values. Specifically, this research aims to investigate the following questions:

1. What asset allocation strategies are most suitable for investing in green products?
2. How can diversification be utilized to minimize risks associated with sustainable investments?
3. What hedging instruments are effective in mitigating risks associated with green products?
4. How can investors assess the risks associated with green products and incorporate them into traditional portfolio management strategies?

As a matter of fact the optimal combinations of financial and hedging instruments refer to the set of financial strategies that involve the use of different financial tools to fund sustainable investments while minimizing financial risks. These instruments may include equity, debt, derivatives, and other financial products among them green products. The key objective of developing optimal combinations of these instruments is to achieve an efficient allocation of financial resources while maintaining sustainable and responsible investment practices. The medium and long-term approach emphasizes the need for a consistent and long-term strategy that factors in the risks and uncertainties of the financial markets and promotes the sustainability of investments over a long period. Overall, an optimal combination of financial and hedging instruments is an essential component of sustainable financing that ensures the stability and resilience of investments. We can figure out to define a new asset class of Climate-related contingent claims able to provide a partial hedging and potentiate the support to sustainable goals.

Research assessment has a considerable impact on academic departments with respect to recruitment policies, incentive policies and strategies for application to competitive calls both at individual and department level. The present project will start by an in-depth and critical review of the scientific literature on research assessment, with the aim to compare international approaches and to identify good practices. Particular attention will be devoted to the analysis of quantitative tools adopted in the Italian VQR. From a methodological point of view, a relevant issue concerns the comparison of heterogeneous groups of researches that develop their research activity in disparate scientific sectors characterized by different ambits and publication stiles, by means of common bibliometric measures.

Interest in green products has come from individual investors, as well as from private financial institutions and funds. The motivations behind it are not limited to a personal sensitivity towards green issues: the clear direction of national and supranational investments and policies signal rapid development and the potentially great impact of this area. The present project will start by an in-depth and critical review of the scientific literature on the behavior of the green products market in moments of market growth and downturn, because evidence of diversification benefits or safe-haven properties of this asset class could offer a further incentive for its inclusion in more and more portfolios. This would drive up demand (and funding) for green investments and accelerate the transition to a sustainable economy. Particular attention will be devoted to investigate the potential diversification benefit provided by green products, in order to find for which financial assets,
investment strategies and risk-aversion levels it is strongest, based on asset co-movement and portfolio performance as well as their climate risk exposure and coherent hedging strategies.

Aim, objectives and deliveries:

We aim to address the three following steps that include methodological and applied developments. The most relevant aspects are detailed below:
1. Review of the literature: the first part of the project will be devoted to the review of the behavior of the green products market to collect evidence of diversification benefits or safe-haven properties.
2. Portfolio allocation analysis with and without green products, carrying out in-sample and out-of-sample performance analysis, based on a number of indicators.
3. Risk analysis and identification of the main drivers of green market, as well as the evaluation of the climate risk component for different asset classes. Hedging of climate risk through climate-related contingent claims. The profile of the investors who would benefit from green products can then be deduced, in terms of their preferred asset, allocation strategy and risk-aversion level.

The Post doc researcher is supposed to learn in detail the relevant aspects related to the analysis of financial assets from issuers with different percentages of taxonomy-eligible activities. Data on taxonomy-eligible economic activities has been available since January 1st 2023 (while taxonomy-aligned activities have not yet been published for financial firms). While taxonomy-aligned activities would certainly be more significant, it could be interesting to start investigating taxonomy-eligible ones by dividing issuers into "classes" defined by ranges of percentage values and then studying the correlation of their stocks/bonds with climate variables (or other variables of interest), highlighting any relevant inter-class differences. Additionally, contributions are expected on the analysis of climate-eligible instead of not climate-aligned activities and could be differentiated by target set of non-green and green products issued by the same entities in order to disentangle the different relationships with climate variables representing physical risk for firms with lower and higher Environmental ratings. Moreover an analysis of stocks of companies with different ESG ratings in a comparable geographic area (e.g. utility companies with a network all over the same country, or companies with an industrial production in the same geographic area) is worth being investigated in term of potential different correlation with climate variables and weather derivatives to be used as climate hedges, based on the climate variables with the larger impact.

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