Sustainable Portfolios under the Lens of Behavioural Finance

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In this study, we propose a behavioural approach to sustainable finance, which takes the form of an asset allocation model taking into account the ethical concerns of the decision maker. Our proposal save the traditional methodologies used by practitioners and does not reject the convenience of the Markowitzian risk-return trade-off. Nevertheless, the optimisation procedure is augmented with an s-shaped value function, similar to the likes of the prospect theory, and incorporating specific sustainability constraints. These constraints are dynamic in so far as the investor can set to what degree their portfolios should be sustainable. Also, they can use an arbitrarily chosen index or a bundle of indices as a benchmark measure of their portfolio sustainability. The concrete implementation poses specific challenges since traditional factor literature is regression based, contrary to our optimisation-based approach. Therefore we resort to a measure of statistical deviation of the asset allocation output from the chosen sustainability benchmarks and consequently we introduce the notion of tolerance to sustainability deviation, much like the usual risk tolerance. We test the theoretical model against a real-world asset allocation problem, comprising domestic asset classes, including commodities and foreign equity. Because we cannot count on convexity and our objective function is piecewise, we use a range of evolutionary algorithms and select the best-found solution. Optimal portfolios obtained are interesting in terms of risk-return profile, but of course, sustainability comes at a price in terms of expected returns, due to the reduced set of investment alternatives.

The case for sustainability in finance relies on the enlargement of the opportunity set of skilled resources. To this end, assume that skills are equally distributed in different groups – such as, for the sake of simplicity, male and female potential job applicants. Let us assume that top skilled employees account for 5% of each group. We quickly realise that, given 100 applicants per group,

we have overall 10 top skilled employees. However, if, due to gender bias, the women are excluded from workforce hiring, then we have just 5 top skilled employee available. When comparing two companies, one affected by gender bias and another not affected, we expect the latter to perform better, in so far as it has more skilled workers. This tenet is relatively simple to be tested empirically: given a sample of firms, if on average fewer biases are reported, then higher financial performance should be observed. In practice, we have a range of sustainability measure which can be used to proxies possibly capable of explaining the observed market returns. Data provider usually supply these indices under the acronym of ESG, to address the relevant topical sector Environment, Social, and Corporate Governance. At this time they are available for diverse number of geographical markets and industries.

A consequential step, under a strictly financial perspective, is the integration of the sustainability concerns in the asset allocation process. Once we have identified introduce our target ESG measures, we can adjust the Markowitzian efficient frontier with ad-hoc sustainability constraints.

The study takes aim at Russian markets. Attempting to give a broad overview of the overall status of the governance of Moscow listed companies, in terms of diversity and pay gap and at the environmental issues due to industry greenhouse gas emissions. In this regard, a specific focus, is given to the energy sector.