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**Analysis of mutual funds' management styles: a modeling, ranking and visualizing approach.**

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Summary: A method to rank mutual funds according to their investment style measured with respect to the returns of a reference portfolio (benchmark) is introduced. It is based on a style analysis model estimating a mutual fund portfolio composition as well as the benchmark one. Starting from such compositions, it computes a proximity measure based on the  $L_1$  or  $L_2$  norm to assess the similarity between each mutual fund portfolio returns and the benchmark returns as well as between the returns of each benchmark constituent and that of the corresponding mutual fund constituent. To this purpose the mean integrated absolute error and the mean integrated squared error are computed to derive both a global ranking of mutual fund management styles and partial rankings expressing the over- (under-) weighting of each portfolio constituent. A visual inspection of the results emphasizing main differences in management styles is provided, using a parallel coordinates plot. Since a modeling, a ranking and a visualizing approach are integrated, the method is named MoRaViA. From the practitioners' point of view, it allows the identification of a specific management style for each mutual fund, discriminating active management funds from passive management ones. To evaluate the effectiveness of MoRaViA, many sets of artificial portfolios are generated and an application on a set of equity funds operating in the European market is presented.

**MSC:**

62-XX Statistics

**Keywords:**

constrained linear regression; mean integrated squared error; mean integrated absolute error; parallel coordinates; subsampling; active *vs.* passive management; benchmarking

**Software:**

R; corrgram; compositions; gamair; MoRaViA; ViSta; CASSATT; GGobi; ggplot2

**Full Text:** [DOI](#)

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