Recent innovations in portfolio selection strategies

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The work presents some recent innovations in portfolio strategies reached by the authors. It is well known that the returns of financial assets generally do not follow the Gaussian law, which also implies that the Pearson measure of linear correlation is not suitable to correctly describe dependencies among random variables. We first focus on possible usage of different correlation measures in portfolio problems. We characterize especially semidefinite positive correlation measures consistent with the choices of risk-averse investors. Moreover, we propose a new approach to portfolio selection problem, which optimizes the correlation between the portfolio and one or two market benchmarks. We also discuss why one should use correlation measures to reduce the dimensionality of large scale portfolio problems. Next, a so called stochastic alarm, which should allow us to predict market periods of systemic risk and price drawdowns is utilized. Moreover, we extend the analysis by considering options written on stocks included in the portfolio and present a so called timing and hedging strategies. Finally, through an empirical analysis using US data, we show the impact of different correlation measures on portfolio selection problems and on dimensionality reduction problems.

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