A benchmarking approach to optimal asset allocation for insurers and pension funds

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Abstract: We solve the optimal asset allocation problem for an insurer or pension fund by using a benchmarking approach. Under this approach the objective is an increasing function of the relative performance of the asset portfolio compared to a benchmark. The benchmark can be, for example, a function of an insurer's liability payments, or the (either contractual or target) payments of a pension fund. The benchmarking approach tolerates but progressively penalizes shortfalls, while at the same time progressively rewards out-performance. Working in a general, possibly non-Markovian setting, a solution to the optimization problem is presented, providing insights as to the impact of benchmarking on the resulting optimal portfolio. We further illustrate the results with a detailed example involving the an option based benchmark of particular interest to insurers and pension funds, and present closed form solutions.

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Main References

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