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Utility Maximization, Risk Aversion, and Stochastic Dominance

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Consider an investor trading dynamically to maximize expected utility from terminal wealth. Our aim is to study the dependence between her risk aversion and the distribution of the optimal terminal payoff.

Economic intuition suggests that high risk aversion leads to a rather concentrated distribution, whereas lower risk aversion results in a higher average payoff at the expense of a more widespread distribution.

Dybvig and Wang [J. Econ. Theory, 2011, to appear] find that this idea can indeed be turned into a rigorous mathematical statement in one-period models. More specifically, they show that lower risk aversion leads to a payoff which is larger in terms of second order stochastic dominance. In the present study, we extend their results to (weakly) complete continuous-time models. We also complement an ad-hoc counterexample of Dybvig and Wang, by showing that these results are "fragile", in the sense that they fail in essentially any model, if the latter is perturbed on a set of arbitrarily small probability. On the other hand, we establish that they hold for power investors in models with (conditionally) independent increments.

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