

Optimal Investment and Consumption with Epstein-Zin Stochastic Differential Utility and Proportional Transaction Costs

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Abstract

We study the optimal investment-consumption problem for an agent whose preferences are governed by Epstein–Zin stochastic differential utility and who invests in a constant-parameter Black–Scholes–Merton market. We assume that purchases and sales of the risky asset are subject to proportional transaction costs. We fully characterise all parameter combinations for which the problem is well posed (which may depend on the level of transaction costs). We also provide a full verification argument that relies on no additional technical assumptions and uses primary methods only. Even in the special case of power utility, our arguments are significantly simpler and more elegant than the results in the extant literature. A novel key idea is to parametrise consumption and the value function in terms of the shadow fraction of wealth. The talk is based on joint work with David Hobson and Alex Tse.



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