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Existence of a Radner equilibrium in a model with transaction costs

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Abstract

We prove the existence of a Radner equilibrium in a model with proportional transaction costs on an infinite time horizon and analyze the effect of transaction costs on the endogenously determined interest rate. Two agents receive exogenous, unspanned income and choose between consumption and investing into an annuity. After establishing the existence of a discrete-time equilibrium, we show that the discrete-time equilibrium converges to a continuous-time equilibrium model. The continuous-time equilibrium provides an explicit formula for the equilibrium interest rate in terms of the transaction cost parameter. We analyze the impact of transaction costs on the equilibrium interest rate and welfare levels.

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