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State Tameness: A New Approach for Credit Constrains

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Abstract

We propose a new definition for tameness within the model of security prices as Itô processes that is risk-aware. We give a new definition for arbitrage and characterize it. We then prove a theorem that can be seen as an extension of the second fundamental theorem of asset pricing, and a theorem for valuation of contingent claims of the American type. The valuation of European contingent claims and American contingent claims that we obtain does not require the full range of the volatility matrix. The technique used to prove the theorem on valuation of American contingent claims does not depend on the Doob-Meyer decomposition of super-martingales; its proof is constructive and suggest and alternative way to find approximations of stopping times that are close to optimal.

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Pages: 1-13

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