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Macroeconomic Implications of Term Structures of Interest Rates under Stochastic Differential Utility with Non-Unitary EIS

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Abstract

Abstract: This paper proposes a continuous-time term-structure model under stochastic differential utility with non-unitary elasticity of intertemporal substitution (EIS, henceforth) in a representative-agent endowment economy with mean-reverting expectations on real output growth and inflation. Using this model, we make clear structural relationships among a term structure of real and nominal interest rates, utility form and underlying economic factors (in particular, inflation expectation). Notably, we show that, if (1) the EIS is less than one, (2) the agent is comparatively more risk-averse relative to time-separable utility, (3) short-term interest rates are pro-cyclical, and (4) the rate of expected inflation is negatively correlated with the rate of real output growth and its expected rate, then a nominal yield curve can have a low instantaneous riskless rate and an upward slope. *Keywords:* Stochastic differential utility; Non-unitary EIS; Term structure of interest rates; Inflation expectation. JEL codes: E43, G12.

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