Optimal Long Run Risk

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ABSTRACT

We examine the asset pricing implications of a production economy in which the level and dynamics of the aggregate growth rate are endogenous. Technological progress is determined endogenously by firms’ R&D activity. We show that optimal R&D decisions naturally give rise to long and persistent swings in aggregate growth rates, that is, long run risk. When the representative agent has Epstein-Zin preferences, she optimally trades off inefficiently low growth against exposure to long run risk. In this sense, the equilibrium long run risk is optimal. In a calibrated version of the model, we show that these effects are quantitatively significant and replicate key asset market moments. In short, optimal growth is risky.

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