Long-run risk in a production economy with endogenous R&D

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Abstract

We endogenize technological change by introducing a stylized innovation process driven by a R&D-dependent Poisson process in a Cox, Ingersoll and Ross (1985) production economy. The model reproduces some of the features of the long-run risk literature, that is, endogenous consumption growth departs slightly from the i.i.d. framework, and shocks to realized and expected consumption growth are priced in equilibrium. Equilibrium dynamics suggest the use of general investment based measures, such as a R&D-to-capital ratio to identify the long-run risk component in aggregate consumption growth.

Keywords: Endogenous R&D; Intensity control; Long-run risk; Production economy.

JEL Classification Numbers: G10; G11; G12; O30; O33.

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