ABSTRACT

TECHNOLOGIES, UNCERTAINTY AND INVESTMENT IN A GENERAL EQUILIBRIUM MODEL

Pedro J. Gutierrez
Universidad de Valladolid
Spain

There are many recent studies analyzing the investment-uncertainty relationship, both empirical and theoretical. However, although the stochastic growth models provide an attractive method to study the investment-uncertainty link, there are not general competitive equilibrium models analyzing this subject. In fact, almost the whole theoretical literature assumes firm decision models not involving general equilibrium, and on the other hand, stochastic growth models have been used mainly to explain asset prices fluctuations and labor cycles. This is consequence of the one-sector RBC models characteristics, which imply immediate fluctuations for labor and output but not for capital. In order to obtain capital fluctuations, a change in the model fundamentals is needed, either stochastic or not stochastic. In this paper I build a dynamic general equilibrium stochastic model with several interesting applications. Among these possibilities, I focus on the effects of technology state specialization and uncertainty on the aggregate stock of capital and investment.

I present a one good-two technologies general competitive equilibrium model with production and uncertainty obtained from a non aggregated economy with complete markets, features that will be used to explain the adjustment process to different stochastic environments. The consequent RBC model is derived, and making use of the dynamic programming algorithm I solve numerically for the steady state under different stochastic specifications. From the policy functions the effects of uncertainty on capital stocks and investment are studied.

Keywords: Dynamic General Equilibrium Model, Uncertainty, Markov Process, Complete Markets, Dynamic Programming Algorithm.

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