A Simple Model of Growth Slowdown*

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Abstract

This paper studies a simple endogenous growth model to explain growth slowdowns. It is designed to explain, for example, the middle income trap often observed in the south-east Asian countries, the U.K.'s productivity puzzle after the Great Recession and the lost decades of Japan in a unified framework. It is based on the Romer's (1990, JPE) variety expansion model with additional state variable, which we call the R&D environment. The R&D environment is a sort of social capital that captures the research network and culture, society's attitude towards research activities, and so on. Together with the non-negativity constraint of the labour supply, this additional state variable generates multiple steady states (balanced growth paths, BGPs). The model has three BGPs, of which the middle one is unstable (explosive) while the other two satisfy the saddle path stability with high and low R&D activities. Without stochastic shocks, the model exhibits strong initial state dependency, meaning that even only small difference in the initial state could lead to a large difference in the long-run. With stochastic shocks, occasional shifts between two stable BGPs can occur. The model offers an intuitive explanation why a financial shock is particularly important for growth slowdowns. Interestingly, before a growth slowdown, a financial malfunctioning raises the stock return. Finally, our model is fairly realistic in the sense that it allows us to do calibration exercises which are rather standard in the business cycle studies.

KEYWORDS: endogenous growth; growth slowdown; dynamic stochastic general equilibrium model

JEL CLASSIFICATION: E3, O3

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