An Unbalanced Two-sector Growth Model with Constant Returns: A Turnpike Approach

by

Harutaka Takahashi

Department of Economics Meiji Gakuin University

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Abstract

Recent industry-based empirical studies among countries demonstrate that individual industry's per capita capital stock and output grow at industry's own steady state growth rate. The industry growth rate is highly correlated to industry's technical progress measured by total factor productivity (TFP) of the industry, which exhibits large difference across industries as reported recently by Syverson (2011). Let us refer to this phenomenon as "unbalanced growth among industries." Very few researches concerned with this phenomenon have been done yet. Some exceptions are Echevarria (1997), Kongsamut, Rebelo and Xie (2001), and Acemoglu and Guerrieri (2008) among others. However their models and analytical methods are different from mine. Applying the theoretical method developed by McKenzie and Scheinkman in turnpike theory, I now construct a two-sector optimal growth model with an industry specific Hicks-neutral technical progress and show that each sector's per capita capital stock and output grow at the rate of the sector's technical progress (the sector's TFP growth rate).

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