

Analysis of Transition Dynamics caused by Technological Breakthrough

-Cause of productivity slowdown and drop in stock prices of existing firms-

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Abstract

This paper examines the transition dynamics which is caused by technological breakthrough. This paper's results show that technological breakthrough causes productivity slowdown and drop in stock prices of existing firms, which are consistent with the facts observed in 1970s. As a result, this paper can explain how technological breakthrough causes these phenomena. The appearance of new technology makes new business chance, which robs existing firms' profit, and thus their stock prices drop. In addition, the decline of existing firms' profit discourages incentive for R&D firms to enter the existing sector, which decreases aggregate R&D activity, and thus the growth rate of productivity declines.

keyword: R&D, Kondratieff cycle, technological breakthrough, productivity slowdown, general purpose technology

JEL classification: O11, O31, O41

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