

# Basic Research Spending, Applied Research Subsidy, and Growth Cycles

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## Abstract

This study constructs a variety expansion growth model that integrates basic research to analytically examine growth cycles. We show the equilibrium path can exhibit two-period cycles through the interplay between applied and basic research. In addition, we explore the effects of change in basic research spending and applied research subsidy. The steady-state growth rate increases when basic research spending/applied research subsidy increase. However, the effects on the possibility of cyclical instability differ by these two policies. An increase in basic research spending reduces the possibility of cyclical instability, while an increase in applied research subsidy raises the possibility of cyclical instability.

Keywords: Basic research spending, Applied research subsidy, Growth cycles,

Flip bifurcation

JEL classification: E32, O31, O41

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