

# Dynamic analysis of demographic change and human capital accumulation in R&D-based growth model\*

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## Abstract

Employing an overlapping generations model of R&D-based growth with endogenous fertility, mortality and education decision, we examine how demographic changes and human capital accumulation influence the R&D activity. We show that there may exist multiple steady states in this economy. One of them has high level of human capital and the other has low level of human capital. In the steady state with high level of human capital, the R&D is undertaken, the fertility rate is low, and the old age survival rate is high. However, in the steady state with low level of human capital, the R&D is not undertaken, the fertility rate is high, and the old age survival rate is low.

**Keywords:** Demographic change, Human capital accumulation, R&D

**JEL Classification Numbers:** I25, J10, O10, O30

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\*I would especially like to thank Koichi Futagami for his invaluable comments and his encouragement in this research.

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