

# Rising Longevity, Human Capital and Fertility in Overlapping Generations Version of an R&D-based Growth Model \*

Ken-ichi Hashimoto<sup>†</sup>      Ken Tabata<sup>‡</sup>

January 21, 2013

## Abstract

This paper constructs a simple, overlapping generations version of an R&D-based growth model à la Diamond (1965) and Jones (1995), and examines how an increase in old-age survival probability impacts purposeful R&D investment and long-run growth by affecting fertility and education decisions. We demonstrate that under certain conditions, old-age survival probability, when relatively low (high), positively (negatively) affect economic growth. This study also compares the growth implications of child education subsidies and child rearing subsidies and demonstrates that although child education subsidies always foster economic growth, child rearing subsidies may negatively impact economic growth in particular situations. Finally, we briefly consider the effects of a child education subsidy on welfare levels.

*Keywords:* R&D, Fertility, Human Capital, Child Education Subsidy, Child Rearing Subsidy.

*JEL classification:* J13, J24, O10, O30, O40

---

\*We acknowledge the financial support from the Ministry of Education, Culture, Sports, Science and Technology of Japan under the Grant-in-Aid for Young Scientists (B).

<sup>†</sup>Corresponding author. Address: Graduate School of Economics, Kobe University, Rokko-dai 2-1, Kobe 657-8501, Japan; Fax: +81 78 803 7293, E-mail: hashimoto@econ.kobe-u.ac.jp

<sup>‡</sup>Address: School of Economics, Kwansei Gakuin University, 1-155 Uegahara Ichiban-cho, Nishinomiya 662-8501, Hyogo, Japan; E-mail: tabataken@kwansei.ac.jp