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【平成28年度 学生懸賞論文受賞作 優秀賞要旨】

Child rearing policies and economic growth

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In Japan, a slowdown in economic growth has been observed for a few decades. One possible reason for this is the decline in the population growth rate. The Japanese economy is facing a declining birthrate. According to World Bank (2016), in Japan, the Total Fertility Rate (TFR) had declined from 2.16 in 1971 to 1.42 in 2014. The TFR has slightly recovered after hitting the lowest rate, 1.26 in 2005. However, this rate is too low to keep the present population size. What cause a declining birthrate? One possible reason is a high cost for child rearing. Child rearing requires a lot of time and education expenses. Indeed, the Japanese government has tackled this problem. For instance, from April in 2010 the Japanese government has begun to provide child allowances. In addition, the Japanese government allocates its budget to child care services, gives subsidy to kindergartens and nursery schools. At this time, however, these policies do not raise the birthrate rapidly. On the other hand, Sweden and France have succeeded in increasing the TFR. Sweden for example raised TFR from 1.5 in 1998 to 1.98 in 2010 by promoting a child-care leave system and childcare services. These measures provide good examples of child-rearing policies for developed countries. Thus, we consider the following issues: Can these policies raise the fertility rate? How do these policies have an impact on economic growth?

Section 2 sets up the model used in this study.

We introduce human capital accumulation in an overlapping generations model with R&D-driven expansion in variety of intermediate goods. We consider a three-period overlapping generations model a la Diamond (1965). An individual lives at most for three periods: childhood, adulthood, old age. In their childhood, individuals are reared by their parents and educated by teachers without making any decision. In their adulthood, individuals supply labor to the market, earn labor income, raise their children, and consume goods. In their old age, they only consume their saving and have no bequest motive. On the production side of the economy, we introduce the education market into the economy, which consists of three sectors; a final good sector, an intermediate sector, and an R&D sector as in Romer (1990) and Jones (1995).

Section 3 derives the equilibrium dynamics and the long-run growth rate of per capita GDP. In this model, the per capita GDP growth rate is positively correlated with population growth and the education level. Furthermore, we examine how a rise in life expectancy impacts the long-run per capita GDP growth rate. A rise in life expectancy negatively affects economic growth by lowering population growth rate.

Section 4 introduces child rearing policies and analyzes the influences of these policies on economic growth. The introduction of child rearing policies is based on Futagami and Konishi (2017).

Here, we consider an education subsidy and a child care service as child rearing policies. We show that an increase in an education subsidy always has negative effects on fertility and positive effects on education. Thus, we demonstrate that an education subsidy promotes economic growth by accelerating human capital accumulation when the level of the subsidy is not too high. On the contrary, too much education subsidy negatively affects the long-run growth rate by lowering fertility.

This paper also shows that a rise in the child care service always decreases the amount of education. As for fertility, when the child care service is sufficiently low, it raises fertility. Too much child care service, however, lowers fertility. Therefore, we demonstrate that a child care service can promote economic growth by boosting fertility. In contrast, a child care service can negatively affect economic growth by not only decreasing education, but also lowering fertility when there exists too much child care service.

Section 5 examines how they affect the utility level in the long run. We demonstrated that there exists a certain level of each policy which maximizes the utility level of individuals in the long run. Furthermore, we showed that the level of the education subsidy which maximizes the long-run growth rate of per capita GDP is smaller than the level which maximizes the utility level of individuals in the distant future. On the other hand, the level of the child care service which maximizes the per capita GDP growth rate is larger than the level which maximizes the utility level.

In closing, we would like to suggest directions for future researches. First, we analyzed only the long-run effects on the welfare levels. If we consider the short-run effects, it is possible to show that there exists an intergenerational conflict between current and future generations with respect to child

rearing policies, as in Hashimoto and Tabata (2013). Second, following Futagami and Konishi (2017), we assume the government expenditure is financed by a lump-sum tax. It would be interesting, however, to consider the changes due to consumption or income taxes. Finally, we do not conduct calibration. These issues are left for future researches.