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Fertility rate and child care policies in a pension system☆

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ABSTRACT

This paper presents an examination of two child-care policies – a child allowance and a subsidy for education investment – and demonstrates how each policy affects fertility and the human-capital growth rate. This paper presents the following results. A child allowance decreases the human-capital growth rate. However, a child allowance does not always increase fertility. Moreover, a subsidy for education investment increases the human-capital growth rate. However, a subsidy for education investment can raise fertility based on parametric conditions. Results of our analyses underscore the importance of considering additional effects of a pension system when providing child-care policies.

1. Introduction

This study is designed to examine how child-care support policies (a child allowance and a subsidy for education investment) affect fertility and human capital accumulation in a model with a pay-as-you-go pension system. This paper reports policies that the government should adopt when faced with a tradeoff between the number and quality of children. We consider the following two child-care support policies: (i) a child allowance and (ii) a subsidy for education investment. These policies are similar in terms of their respective emphases on the reduction in parents' child-care burden. However, this paper shows that the results of the policies differ. A child allowance reduces the human-capital growth rate, but this allowance does not always raise fertility. In contrast, a subsidy for education investment can raise not only fertility but also the human-capital growth rate, based on a parametric condition. Without a pension system, the effects of a child allowance and a subsidy for education investment are the same as those described by Zhang (1997). Moreover, setting the certain pension benefit, a child allowance has no effect on fertility, as shown by Zhang and Casagrande (1998). With a pension system, however, child-care support policies can affect the pension benefit. This effect influences the parents' lifetime income and therefore affects fertility and the human-capital growth rate: The pension system brings about additional effects on fertility and the human-capital growth rate in providing child-care support policies.

The remainder of this paper is organized as follows. Section 2 introduces the background of our research and related literature. Section 3 sets the model. Section 4 derives an equilibrium and assesses child-care policies and educational subsidies. The final section presents conclusions of this study.

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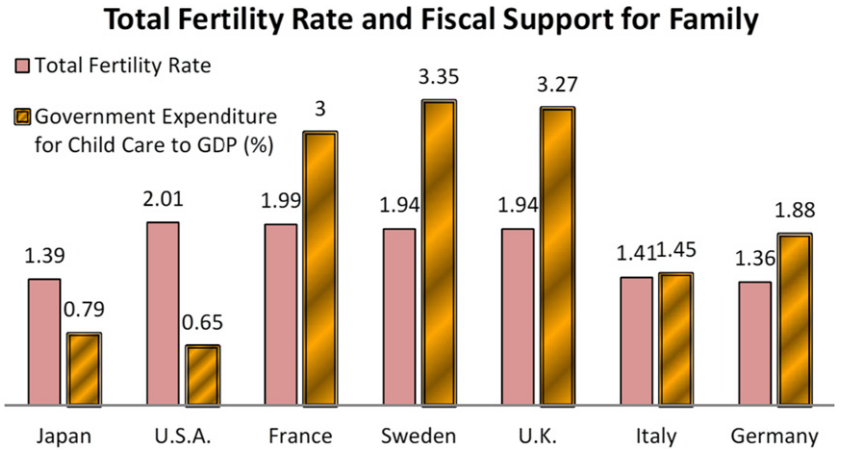

Fig. 1. Total fertility rate and fiscal support for a family.
Source: Cabinet Office, Government of Japan (2011) White Paper on Birthrate-Declining Society (*in Japanese*), OECD Social Expenditure Database (October 2010), Data years are as follows: TFR in 2009 (2010 in Japan), fiscal support in 2007.

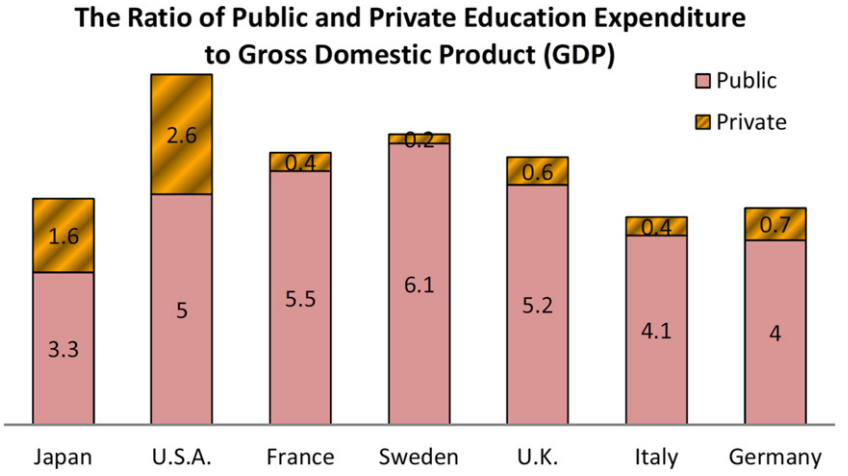

Fig. 2. Ratio of public and private education expenditure to Gross Domestic Product (GDP).
Source: OECD (2010) Education at a Glance 2010. Data years are 2007. Fiscal Support for Families includes in-kind benefits (day care, home help and other in-kind benefits) and cash benefits (family allowance, maternity and parental leave, and other cash benefits).

2. Background and literature

The total fertility rate (TFR) in Japan in 2011 was 1.39. Recent data related to fertility rates show a decreasing trend in many developed countries. This phenomenon of a decreasing number of children is a problem confronting not only Japan but also several other developed countries. Fig. 1 portrays the TFR of some developed countries.

These countries actively support child care to increase the fertility rate. European countries have always actively supported child care. In fact, Sweden and France are known as countries where the fertility rate has been revived by their respective child-care policies. These facts were reported by Sleebos (2003).[1] In European countries, governmental child-care policies not only provide financial support in the form of a child allowances but also set up nursery schools and enact laws to make work and child care mutually compatible.[2] Moreover, education is subsidized to a great degree. Fig. 2 shows that in European countries, household education expenditures are lower than in Japan.

In France, Sweden, and the UK, government subsidies provide sufficient fiscal support for child care and education. As a result, these countries have prevented a decrease in TFR. However, in Japan, both child care support and education subsidies are insufficient. Therefore, it is natural that TFR is lower than in the former countries.

[1] TFR in France was approximately 1.6 during the early 1990s. However, it rose to 2.0 in 2006. In Sweden, the TFR was approximately 1.6 during the first half of the 1980s. However, the fertility rate was higher than 2.0 in the 1990s.

[2] Lutz (1999), Milligan (2002) and Laroque and Salanie (2008) examined the financial incentives to having children.