Long-term care and births timing ☆,☆☆

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ABSTRACT

Due to the aging process, the provision of long-term care (LTC) to the dependent elderly has become a major challenge of our epoch. But our societies are also characterized, since the 1970s, by a postponement of births, which, by raising the intergenerational age gap, can affect the provision of LTC by children. In order to examine the impact of those demographic trends on the optimal policy, we develop a four-period OLG model where individuals, who receive children's informal LTC at the old age, must choose, when being young, how to allocate births along their life cycle. It is shown that, in line with empirical evidence, early children provide more LTC to their elderly parents than do late children, because they face a lower opportunity cost of providing LTC. When comparing the laissez-faire with the long-run social optimum, it appears that individuals have, at the laissez-faire, too few early births, and too many late births. We then study, in first-best and second-best settings, how the social optimum can be decentralized by encouraging early births, in such a way as to reduce the social burden of LTC provision.

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1. Introduction

The beginning of the 21st century is characterized by two fundamental demographic trends, which constitute the most recent corollaries of the demographic transition started two centuries ago (Lee, 2003).

First, the aging process raises the proportion of elderly persons in need of long-term care (LTC), i.e. persons who can no longer carry out daily activities such as eating, washing, etc. The number of dependent elderly in Europe (EU-27) is expected to grow from 38 million people in 2010 to 57 million in 2060 (European Commission, 2012). The rise of LTC constitutes a major challenge for families, since two thirds of LTC is provided informally (Norton, 2000). Forecasts from the EU suggest that a significant part of LTC provision will remain informal in the future (see Fig. 1). Given the limited

development of private LTC insurance markets, this constitutes also a major challenge for policy-makers.[1]

Second, factors such as the rise of education, medical advances and changing cultural norms have led to postponement of births, especially since the 1970s (see Gustafsson, 2001).[2] To illustrate that trend, Fig. 2 shows the rise in the mean age at birth in different European countries. That rise is substantial: whereas the mean age at birth was below 27 years in France in the late 1970s, it is about 30 years today. The postponement of births influences the dynamics of the age-structure of the economy, and, hence, may affect the financial sustainability of pay-as-you-go pensions schemes.

These two demographic trends are linked through various channels. First, a large volume of LTC services are informal, and provided by the family. Hence the rise of the demand for LTC imposes some pressure on the time constraints faced by informal care givers, such as spouses and children (see Korn and Wrede, 2013). Second, the timing of births chosen by parents determines the age gap between parents and children, which constitutes a major determinant of the amount of LTC that children will provide to their parents once those will reach the old age. When the caregivers are children of the dependent elderly, the age of caregivers has a major impact on the

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[1] On this, see Cremer et al. (2012).
[2] On the causes of births delay, see Cigno and Ermisch (1989) and Happel et al. (1984).
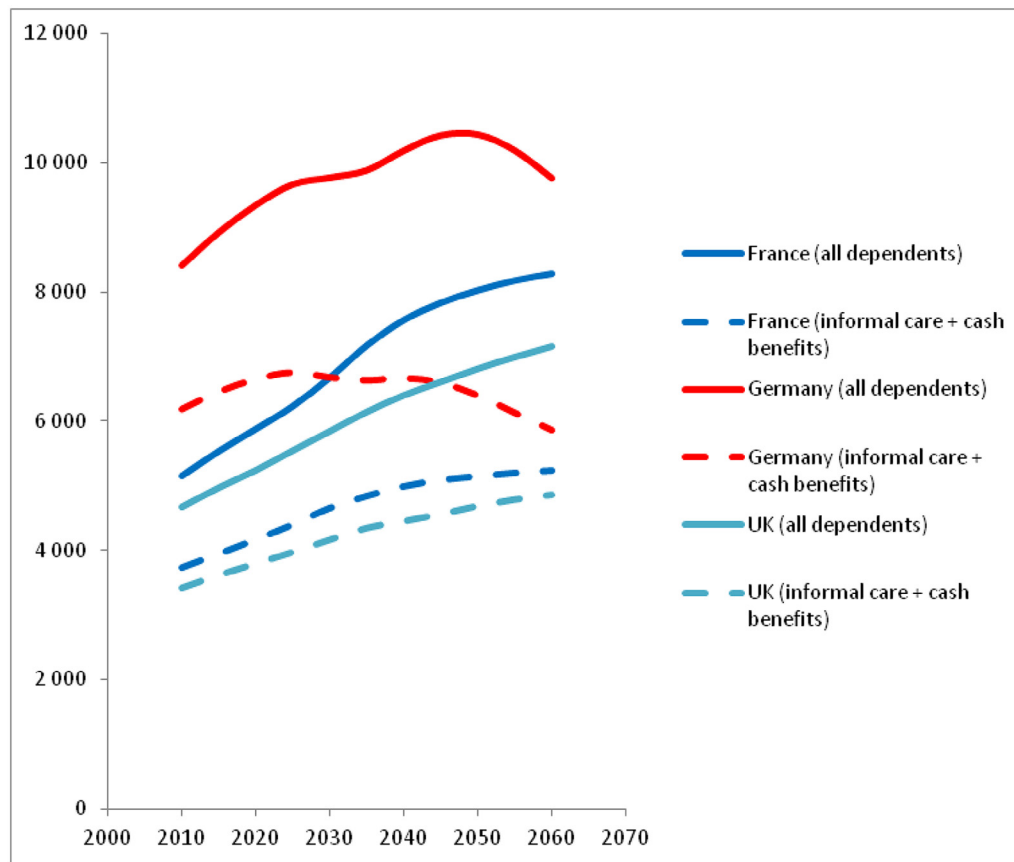

Fig. 1. Number of dependent persons (total/relying on informal care and cash benefits), in thousands (source European Commission, 2012).

opportunity cost of helping their elderly parents. The oldest children of the family may themselves be close to retirement by the time their parent becomes dependent. Hence, for the first children born in a family, the opportunity cost of providing LTC is lower. On the contrary, younger children are, when their parent becomes dependent, younger, and are not close to retire, implying a higher opportunity cost of providing LTC.

Empirical studies show that informal LTC is far from a marginal phenomenon. According to the SCAN Foundation (2012), informal caregivers spend, on average, 20.4 hours per week providing care, and the period during which informal care is given is, on average, equal to 4.6 years. Thus informal LTC affects time constraints substantially. Regarding the impact of the age of children, recent studies, such as Fontaine et al. (2007), on the basis of data from the Survey of Health, Ageing and Retirement in Europe (SHARE), showed that the behavior of the children of a dependent parent without spouse is far from symmetric, but, rather, varies with the age of the child and his/her involvement in the labor market. In particular, if younger children are working full time, older children tend to be more involved in the provision of LTC to their elderly parent, even though younger children also participate. Thus the age (and, hence, working status) of children providing LTC is an important variable, which is directly related to the fertility choices made by their parents when they were young.

The goal of this paper is to examine the relations between the provision of LTC by children and the timing of births, by focusing on the unequal opportunity costs of providing LTC among children of unequal ages. We propose to study the conditions under which the timing of birth of children can be used by parents as an insurance device for LTC provision in an economy without social insurance, and where LTC is only provided informally through children.

For that purpose, we develop a 4-period OLG model where individuals become dependent in the old age (period 4), and where the dependent's health depends on the amount of (informal) care provided by their children. In order to study fertility timing, we consider a model of lifecycle fertility, where parents can choose to have children in periods 2 or 3. We consider the joint of decisions of the timing of births and of the provision of LTC to the elderly parents, within a dynamic model of capital accumulation.

Our analysis proceeds in two stages. Our model is first used to examine, under laissez-faire, the relation between birth timing and LTC provision. We explore the conditions under which we can rationalize the empirical fact that older children provide more LTC than younger children (Fontaine et al., 2007). We first examine that issue at the temporary equilibrium, and, then, we characterize the stationary equilibrium to examine to what extent our results are robust to the long-run variations of wages and interest rates, which affect the opportunity cost for children of providing LTC. In a second stage, we characterize the long-run social optimum, and we examine the decentralization of that social optimum by means of appropriate policy instruments. Our questions are: what does the optimal family policy look like? Is the birth timing chosen by parents socially optimal in the long-run? Is the postponement of births desirable in times of a rise in the needs of LTC?

Our results show that early children provide, at the laissez-faire, more LTC to their elderly parents in comparison to late children, because of a lower opportunity cost of providing LTC. That tendency is shown to be persistent in the long-run. We show that individuals have in general, at the laissez-faire, too few children early