Social long-term care insurance with two-sided altruism

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A B S T R A C T

This paper studies the design of a social long-term care (LTC) insurance when altruism is two-sided. The *laissez-faire* solution is not efficient, unless there is perfect altruism. Under full information, the first-best can be decentralized by a linear subsidy on informal aid, a linear tax on bequests when the parent is dependent and state specific lump-sum transfers which provide insurance. We also study a second-best scheme comprising a LTC benefit, a payroll tax on children's earnings and an inheritance tax. This scheme redistributes resources across individuals and between the states of nature and the tax on children's labor enhances informal care to compensate for the children's possible less than full altruism.

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1. Introduction

Long-term care (LTC) is becoming a major concern for policy makers. Following the rapid aging of our societies, the needs for LTC are expected to grow and yet there is a lot of uncertainty as how to finance those needs; see Norton (2000) and Cremer et al. (2012) for an overview. Family solidarity, which has been the main provider of LTC, is reaching a ceiling, and the market is remains rather thin.[1] Not surprisingly, one would expect that the state takes the relay.

This paper studies the design of social LTC insurance when both parents and children are altruistic towards each other. Children's altruism is however only partial. First, it is only triggered by the occurrence of dependency and second it is limited. In a pure market economy the dependent parents have to devote their resources to purchase professional care services, but also to leave some bequests to boost informal care.

One cannot be but struck by two parallel evolutions: the soaring needs for LTC and the growing share of inherited wealth in overall capital accumulation; see Piketty and Zucman (2014). LTC is surely not a problem for the very wealthy households, but for many households LTC can eat up most of their assets and make it impossible to bequeath anything. It is thus not surprising that some people have thought of using the proceeds of estate taxation to finance public long-term care. An example of this is the English green paper proposing a voluntary inheritance levy. Accordingly, people in England and Wales

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  [1] The economic literature has identified a number of factors that can explain the low level of LTC insurance demand. These include significant loading factors due to high administrative costs, adverse selection in the demand for insurance (Sloan and Norton, 1997; Finkelstein and McGarry, 2006; Brown and Finkelstein, 2007, 2009) and the existence of cheaper substitutes like family care or public assistance (Pauly, 1990; Zweifel and Strüwe, 1998; Brown and Finkelstein, 2008).

could pay a one-off 'inheritance levy' of up to £12,000 in return for free public long-term care in their old age. The fee would either be deducted from the estates of older people when they die or be paid when they enter retirement age.[2] The aim is to avoid forcing many pensioners to sell their family homes to fund massive nursing home bills.

There is indeed a close link between bequests and long-term care. In a world without a well-developed LTC insurance market, households are forced to oversave or to self-insure. Consequently, in case of good health they end up with an excess of saving that can lead to involuntary bequests. It is then clear that if it were possible to tax those bequests, the proceeds could be used to finance long-term care. Actually if some type of insurance, private or public were available, one would end up with the same result, that is, a perfect smoothing of consumption between the two states of the world, dependency or not. Brunner and Pech (2012) made that argument by showing that a tax on bequests to finance LTC causes a smaller deadweight loss than an income or consumption tax. This holds true whether or not the parents are altruistic. The problem is that in a world with heterogeneous agents it might be impossible to distinguish bequests that are made by dependent parents from those made by autonomous parents.

The matter gets more complicated when we look at the case of formal LTC financed by saving or insurance and informal services coming from children. For the time being we assume that formal and informal care are complements. Dependent parents will have to exchange those informal services against the prospect of some bequests. If children are not altruistic, we will have a pure *quid pro quo* exchange; if they are altruistic they might help their parents even if these cannot bequeath anything. The amount of help will depend on the extent of filial altruism. In case of perfect altruism, children will provide the optimal amount of assistance to their parents.

In a world of identical individuals, the social insurance scheme will serve two purposes: it redistributes resources across the two states of nature and it induces the child to help his parent. If individuals differ in the level of their wage, social insurance must also redistribute resources across individuals.

To study these issues we consider a population consisting of one parent and one child families. Parents are pure altruists towards their child, while the child's altruism may be imperfect. Parents are retired and have accumulated some wealth. They face a probability of becoming dependent and needing LTC. The need of LTC requires expenditures of some monetary amount. In case of dependency parents would like to benefit from the aid of their children, who are ready to help their parent out of altruism but also with the expectation of some inheritance.[3]

We characterize the first-best allocation and show that the *laissez-faire* is not efficient, unless there is perfect altruism. Under full information the first-best can be decentralized by a linear subsidy on informal aid, a linear tax on bequests when the parent is dependent, and state specific lump-sum transfers which provide insurance.

Next, we study the second-best allocation when the instruments available are linear (state independent) taxes on bequests and children's labor income which finance a transfer to the dependent elderly.[4] Observe that the tax on children's labor income is in our setting effectively equivalent to a subsidy on informal care.[5]

We first consider a setting with *ex ante* identical individuals. We show that both taxes should be positive. The tax on labor which subsidizes informal care compensates for possible imperfect altruism; this is like in the first-best implementation. Both taxes also provide insurance, and that is relevant as the first-best state specific lump-sum transfers or taxes that provide full insurance are not available. Labor and bequest taxes are then used to provide (partial) insurance.

Finally, we consider a setting with *ex ante* heterogenous families, which differ in children's productivities and parents' wealth. We show that the results obtained in the homogenous family case carry over. However, the two tax rates now also include a positive redistributive term. Throughout this paper private LTC insurance is assumed away. This is for the sake of simplicity but also because in most countries the LTC insurance market is extremely thin; see Brown and Finkelstein (2007, 2009).

2. Identical individuals

2.1. The model setup

Consider a population of a size normalized to one, consisting of one parent (subscript '*p*') and one child (subscript '*c*') families. Parents are pure altruists towards their child, while a child's altruism may be imperfect. Parents are retired and have accumulated wealth y. They face the probability π of becoming dependent and needing long-term care. The need of LTC requires expenditures of amount L. In case of dependency the parent would like to benefit from the aid of his child, who is ready to help his parent out of altruism but also when receiving some inheritance b. Parents choose the bequest to their children. In case of autonomy, the child inelastically supplies one unit of labor at a wage rate w. In case the parent needs long-term care, the child's time spend on the labor market is reduced by the time spend for informal care provision a and gross earnings amount to $w(1-a)$. Care provided by the child reduces the monetary loss from LTC by $h(a) \leq L$ (with $h' > 0, h'' < 0$) since then the parent requires less professional care services.