Borrowing constraints, parental altruism and welfare

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ABSTRACT

This paper investigates the welfare impact of a borrowing constraint that does not allow children to borrow against future income. In an overlapping-generations model with altruistic parents, the inability to borrow increases children's savings and parental transfers, raising children's welfare as well as average welfare in the short-run and in the long-run.

Additionally, the borrowing constraint raises aggregate savings and, hence, physical capital. Consequently, when prices are flexible, the positive welfare impact of the constraint is higher.

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1. Introduction

In this paper, I show that in a standard overlapping generations economy where parents care about the lifetime utility of their children, a borrowing constraint that does not allow children to borrow against future income can increase children's welfare as well as social welfare both in the long-run and in the short-run.

Credit constraints have been a long time concern of policy makers and economic analysts as they are viewed as a critical obstacle to an efficient allocation of resources. In recent years, greater attention has been given to the impact of borrowing constraints on human capital accumulation. Typically, children, or parents on their behalf, cannot borrow against their future income, and it is often argued that this constraint prevents children from acquiring optimal levels of consumption and education and makes them worse off. The overall presumption is that the average levels of welfare are lower in the constrained equilibrium than in an unconstrained one. This belief has generated support for governments to intervene by developing credit markets or implementing public policies that mitigate the posited harmful impact of credit constraints. Namely, it is argued that governments should set up policies that replicate, in a constrained economy, the allocation of resources that would be obtained in the unconstrained economy. For instance, Rangel (2003) and Boldrin and Montes (2005) show that public funding of education and social security policies can be set up to mimic the unconstrained equilibrium. As the implementation of policies based on incorrect assumptions can make agents worse off, a clearer understanding of the effect of borrowing constraints is critical to evaluate the impact that suggested policies might have on the well-being of agents. But,

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although these constraints are central to an individual's optimal allocation of resources across time, there has not been much formal economic analysis assessing the welfare implications of not allowing children to borrow against future income.

I revisit the discussion of the welfare impact of a constraint on children's borrowing in a general equilibrium overlapping generations model with parental altruism. I assume that underage children are economic agents with the same preferences as adults, allocating resources to consumption and enjoying leisure. Furthermore, I assume that parents care about their children's well-being in the sense that children's lifetime utility enters their parents' utility function, and, as rational and forward-looking agents, they take into account the full impact of their decisions on their children's future utility levels.

Surprisingly, the results point in the direction opposite to the common perception in the literature as children are made better off with the introduction of a borrowing constraint in a environment where children borrow against future income to finance their consumption, and average welfare levels increase. Furthermore, allowing for the borrowing constraint increases social welfare, for reasonable values of the social discount factor. In an unconstrained economy, if children are Cournot players and have no strategic power over their parents, the outcome of the game played between them and their altruistic parents maximizes parents' utility. However, as shown in Bernheim (1989), the corresponding Cournot–Nash equilibrium does not maximize the average welfare level of currently living agents, nor the welfare of children; the level of parental transfers that maximizes average welfare is higher than the level that is optimal for parents to give in the Cournot–Nash equilibrium. In fact, if given some strategic power, children would alter their decisions to take advantage of the positive externality they have on their parents' utility and generate a higher level of parental transfers. They would increase savings, reducing consumption, raising their marginal utility of consumption; parents would respond by increasing transfers to children. By reducing the amount of borrowing by children, a binding credit constraint effectively increases children's savings and places them at a point in their parents' reaction function that results in a higher level of parental transfers. As a result, the borrowing constraint generates aggregate welfare gains. Children are made better off because they receive more transfers and do not have any debt to repay in the future; they move closer to the levels of parental transfers and savings that maximize their welfare. Parents are made worse off because of the decrease in consumption and leisure implied by the increase in parental transfers; however, the increase in their descendant's life-time utility lessens this effect.

In addition, the long-run increase in welfare is higher than the one observed in the short-run. Upon the introduction of the borrowing constraint, children's savings increases making future parents wealthier. Because wealthier parents are willing to transfer more resources to their children, future children receive more parental transfers and are better off than current ones.

Soares (2010) applies a similar approach to develop a new rationale for how a ban on child labor can improve children's as well as the average level of welfare. Phelan (2006) and Farhi and Werning (2007) underline the importance of distinguishing the welfare of parents and children in the social welfare objective when considering optimal intergenerational insurance. In Farhi and Werning's (2010) characterization of optimal estate taxation, this welfare differentiation results in negative optimal marginal estate taxes, so that all parents face a marginal subsidy to bequests to incentivize this form of parental transfers.

The positive impact of the borrowing constraint on welfare uncovered in this paper is based on two factors: the impact that the constraint has on the outcome of the game played between children and their altruistic parents, namely on the level of parental transfers, and the differentiation between children's welfare and parental welfare. These factors have been overlooked in the literature in part because the impact of borrowing constraints has been mostly studied in infinitely lived agents economies, for instance focusing on their effect on individuals' ability to insure against idiosyncratic shocks (e.g., Aiyagari, 1994). In overlapping generations models, Jappelli and Pagano (1994) show that by increasing the levels of physical capital borrowing constraints can enhance growth, while De Gregorio (1996) and Christou (2001) argue that these results can be reversed when the inability to borrow reduces human capital accumulation. But in these papers agents are selfish which precludes any role for parental transfers. Aiyagari et al. (2002) study the importance of asset markets on the accumulation of human capital in a world with parental altruism where children differ by ability. The authors prove that the introduction of a borrowing constraint decreases the average level of welfare of currently living agents. However the authors account solely for the welfare of adults when computing average welfare.

In an overlapping generations model with altruism, Altig and Davis (1989) find that borrowing constraints increase welfare in the long-run. They consider long-run stationary equilibria and attribute the welfare gains to the pecuniary effects of borrowing constraints, namely to the increase in wages generated by the rise in capital resulting from the forced increase in savings. Laitner (1993) looks at the frequency of binding borrowing constraints over the life-cycle in the long-run. He notices that borrowing constraints result in larger parental transfers which mitigate the long-run negative welfare impact of binding borrowing constraints by reducing their frequency.

In this paper. I also account for the impact that borrowing constraints have on welfare through their effect on the aggregate levels of physical capital. Borrowing constraints increase aggregate savings and, hence, the aggregate levels of physical capital. As in Altig and Davis (1989), these changes impact factor prices and amplify the welfare gains generated by borrowing constraints.

The paper is organized as follows. In Section 2, I build a simple model to analyze the impact of an increase in savings on parental transfers and welfare, and present results that indicate that a borrowing constraint might increase welfare. In Section 3, I present an extended and more realistic economic environment where children borrow against future income to finance consumption and education. Because it is not possible to provide analytical results, I solve the model numerically to assess the impact of a borrowing constraint on welfare. In Section 3.2, the parameters of the economy are calibrated to