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Survival of the gene, intergenerational transfers and precautionary saving

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Abstract

This paper provides a model of bequest and investment in children's human capital at low incomes. It posits that parents and children are linked through their common concern of grandchildren and intergenerational transfers provide a material basis for the perpetuation of the family line. The model characterizes intergenerational strategic interactions in a dynamic game theoretical framework. Moreover, it explores intergenerational uncertainty as a source of precautionary saving. In contrast with the existing literature, the model implies that there are qualitative differences between precautionary saving from one's own income uncertainty and precautionary bequests from children's income uncertainty.

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1. Introduction

Almost all theories of economic development emphasize the role of savings and capital accumulation. However, the theoretical analyses on saving behaviors that incorporate the unique features of developing economies are rare. Notable exceptions include Gersovitz

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(1983), who examines a model of saving and nutrition at low incomes. Gersovitz (1983) shows that people's saving/consumption behaviors can be significantly altered when they are poor so that consumption has physiological consequences on their probability of survival and their productivity.

This paper tries to complement the existing literature by studying bequest and investment in children's human capital at low incomes. Much empirical evidence indicates that intergenerational transfers account for a significant part of aggregate saving (e.g., Kotlikoff, 1988). Bequests and investments in children seem to be particularly important at low incomes because they can not only increase children's welfare but also enhance the probability of the survival of future generations. The purpose of this paper is twofold. First, it will examine how the "selfish gene" can lead individuals to be altruistic toward their children.¹ Second, it will show that the concern for the perpetuation of the family line may generate precautionary intergenerational transfers.

This paper is related to Chu (1991), who studies the phenomenon of primogeniture from an evolutionary approach. On the basis of anthropologists' extensive research, Chu proposes that the "altruism" from parents to children arises from parents' concern about the survival of their genes. Based on this assumption, he explains that primogeniture emerged as family heads' optimal policy to minimize the probability of their lineal extinction. Chu also demonstrates that this assumption provides a more satisfactory explanation for primogeniture than the commonly used altruism model that assume parents' utility depends on children's utility (e.g., Barro, 1974). Because of the mathematical difficulty, Chu focuses on the division of bequests by assuming that the total amount of the bequest is given by habit or custom and is not a choice variable. This paper extends Chu by providing a model in which bequests are endogenous.

This paper posits that parents and children are linked through their common concern of grandchildren. Given that grandparents do not beget grandchildren directly, the concern for the "survival of the gene" induces grandparents to transfer some of their wealth to their children, in order to induce their children to have and raise the grandchildren whom the grandparents care about. The grandparents are thus the principals of the parents, who act as agents in charge of the task to perpetuate the gene.

As individuals of different generations interact strategically, this model is analyzed in a dynamic game theoretical framework. The analysis demonstrates the existence of a stationary Markov Perfect equilibrium, in which an individual will choose to have offspring if and only if her wealth is greater than a certain threshold level. Thus, bequests and the expenditures on children's education provide a material basis for the survival of the gene. The model shows that the total amount of intergenerational transfers (i.e., the sum of bequests and investments in children) tends to increase with parental wealth. Meanwhile, it analyzes parents' optimal choices of the combination of bequests and educational expenditures.

The second part of the paper investigates the relationship between intergenerational uncertainty and precautionary intergenerational transfers. The importance of uncertainty and

¹ For an excellent and influential study on the relationship between the "selfish gene" and human behaviors, see Dawkins (1989).

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