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Risk-sharing within families: Evidence from the Health and Retirement Study

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ABSTRACT

We report strong empirical support for the presence of self-interest-based risk sharing within extended families in the U.S. A standard model of self-interest-based risk sharing predicts that the share of current family income consumed by a child positively depends on that child's permanent income. It follows that parental transfers to children that are expected to earn more over the period of risk-sharing arrangements should exhibit less sensitivity to the recipient's income fluctuations. We test this distinguishing prediction of self-interest-based risk sharing by exploiting the variation of transfer receipts among siblings, observed over 17 years of longitudinal data spanned by the Health and Retirement Study.

1. Introduction

It is well established that considerable risk sharing takes place within networks of family and friends, both in the U.S. and in less developed countries. However, the precise nature of informal risk-sharing arrangements is not well understood (see Cox and Fafchamps, 2008). Informal risk-sharing arrangements are bound to interact with social insurance and income redistribution policies. Therefore, elucidating the nature of such arrangements is important for the purpose of effective policy design. In this paper, we investigate whether the informal risk-sharing arrangements are founded upon altruism or self-interest.

Our first contribution is to construct a longitudinal dataset of monetary transfers between adult children and their parents in the U.S. and to document their empirical patterns. Our dataset is based on the 17 year period spanned by the Health and Retirement Study (HRS) and contains information on the incidence of within-family help provision and frequency of contact, as well as the economic and demographic characteristics of individuals.[1] The long panel dimension of the dataset enables us to distinguish between the altruistic and self-interest motives of risk sharing, as we explain below.

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[1] We are aware of only two other studies that span the 17 year period of HRS: Leukhina and Santoro (2011) and McGarry (2012). Both studies explore the dynamic aspects of giving. McGarry (2012) emphasizes that controlling for unobservable differences – which the panel dimension allows us to do – makes an important difference in estimating the effects of income on transfer amounts.

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Our second contribution is to derive a testable implication which is unique to the self-interest-based risk sharing (SIRS), and inconsistent with the altruistic framework. To simplify the comparison, we focus on frictionless environments that lead to efficient risk-sharing arrangements. In both frameworks, family members face random income streams, but consume a constant share of total family income, say θ_j, regardless of their current income. It follows that transfer amounts respond negatively to the recipient's current income, with the magnitude of this response dampened by θ_j. There is, however, an important distinction. Only in the case of SIRS, consumption shares, and therefore transfer receipts, are linked to agents' permanent incomes. In the altruistic framework, consumption shares are instead determined by preference parameters.

Our final contribution is to test this unique feature of SIRS in HRS data. To this end, we focus on families with at least two adult children, and exploit the observed variation in transfer receipts among siblings. The fact that we observe families over a long period of time allows us to control for the unobserved differences among adult children and enables us to proxy their permanent incomes. We find that transfer amounts depend negatively on the recipient's current income, but this dependence weakens with the recipient's permanent income. While the first of the two findings is consistent with the presence of risk sharing in general, the second finding is consistent only with self-interest-based arrangements.

Previous studies of risk-sharing arrangements focused on testing its efficiency. These studies tested and rejected the hypothesis that individual consumption is completely independent of idiosyncratic income shocks (e.g. Altonji et al., 1992; Hayashi et al., 1996; Altonji et al., 1997) based on within-family transfer data in the U.S.[2] More recently, however, high quality consumption data has become available in many developing countries, revealing substantial, although imperfect, consumption smoothing within networks of friends and family.[3] In response to these findings, it has become common to modify SIRS models via limited commitment. This modification allows the agents to walk away from contractual arrangements for the option of living in autarky. It impedes on risk pooling and effectively breaks down the efficiency result.[4] In fact, SIRS models with limited commitment have been shown to successfully account for individual consumption and income dynamics in developing countries (e.g. Udry, 1994; Cox and Eser, 1998; Fafchamps, 1999; Foster and Rosenzweig, 2001; Ligon et al., 2001).[5] This evidence also favors self-interest-based arrangements.

Our paper is related to the strand of literature that documents within-family transfer flows in the U.S. and investigates the underlying motives. The early contributions focus on documenting empirical patterns of within-family flows, e.g. Cox (1990), Gale and Scholz (1994), McGarry and Schoeni (1995), and Dunn and Phillips (1997).[6] In addition to the two motives studied here, the standard explanations of transfer flows include the exchange motive. Parents could transfer money to adult children in exchange for their help or attention.[7] In our empirical model, we control for the exchange motive by including help provision as a determinant of transfer flows. We find the exchange motive to be significant, which is consistent with the findings in Cox (1987) and Norton and Van Houtven (2006).

To the best of our knowledge, the self-interest-based motive of risk sharing has not been examined against the altruistic motive. One likely reason is that both motives have been dismissed on the basis of empirical evidence against efficiency of risk sharing. Such conclusion is premature since impediments to perfect risk pooling can be easily introduced to both models, such as limited commitment in the case of SIRS models, discussed above, and temporary liquidity constraints in the case of altruistic models (see McGarry, 2012).

It is important to point out that the empirical support for self-interest-based arrangements presented here does not rule out the presence of altruistic linkages. Altruism may play an important role in forming and sustaining the risk-sharing units and facilitating informational flows within (Cox and Fafchamps, 2008).

On a final note, understanding within-family links is important because of their macroeconomic implications. In fact, several studies assign a significant role to within-family links in accounting for aggregate patterns. In De Nardi (2004) and Nishiyama (2002), intergenerational links help the model replicate the observed wealth distribution. Kotlikoff and Summers (1981) and Munnell and Sundén (2003) attribute a major part of capital formation to intergenerational flows. In Weil (1994), intergenerational links reconcile lower aggregate savings rates of countries with older populations with the lack of significant dissaving by the elderly.[8]

We organize the paper as follows. In Section 2, we describe the dataset and report the main patterns of transfer flows. In Section 3, we derive the distinguishing feature of SIRS. In Section 4, we present our empirical strategy. We present our results in Section 5 and conclude in Section 6.

[2] Mace (1991) studies consumption smoothing in the consumption expenditure survey.

[3] See Cochrane (1991), Deaton (1992), Townsend (1994), Udry (1994), Grimard (1997) and Fafchamps and Lund (2003).

[4] The same modification could be introduced in our theoretical analysis without changing our main conclusions.

[5] Theoretical work on self-interest-based risk sharing includes Posner (1980), Kotlikoff and Spivak (1981), Kimball (1988), Coate and Ravallion (1993), Kehoe and Levine (1993), Kocherlakota (1996), Ligon et al. (2001). See Attanasio and Rios-Rull (2010) for a complete discussion of risk-sharing models.

[6] McGarry (1999) and Bernheim and Severinov (2003) offer explanations for the puzzle reported in Dunn and Phillips (1997): while bequests are divided evenly, inter vivos transfers favor the less fortunate children.

[7] The strategic motive can be classified as an exchange motive. It arises if parents value their children's attention and hold extra wealth or give money in order to induce children's phone calls and visits. Bernheim et al. (1985) document a statistically significant positive relationship between attention received and the amount of parental bequeathable wealth, although Perozek (1998) claims that this relationship is not robust to including child and family characteristics. Transfers can be also motivated by the joy of giving (Andreoni, 1989). This motive would induce flows independent of children's income, which is inconsistent with empirical observations.

[8] Also see Bosworth et al. (1991).