Measuring parental transfers

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- Recent research suggests intrafamily transfers (or lack of them) play crucial role in education financing
- Yet, little is known about their empirical relevance and features, the way they are determined (partly due to data limitations)
- transfers interact with other forms of education financing (government subsidies through the EFC, labor while in school)
- From theory point of view, interesting incentive problems

- Fortunately, government might know more than we do (Expected Family Contribution...)

- *"...Currently if you are under 25 and not in graduate school you are considered dependent on your parents' income and have to include their income on your FAFSA which will count against you when figuring your expected family contribution. For those of us who did not receive any financial support from parents other than cosigning loans this is a real kick in the ass. Not only is my family lower middle class and unable to contribute to my education, but the government will tell me that they expected them to contribute and will punish me by lowering my available loan total"*

— comment posted on the Becker-Posner Blog and reported by Brown, Scholz and Seshadri (2011)

These notes aim to:

1. briefly overview some (very basic!) issues relating to optimal parental transfers

2. discuss features of available data on transfers

3. suggest some ideas and questions

A static example

- Parents have permanent income $y_p(\theta_p)$ where θ_p is ability. Similarly, kids have permanent income $y_c(\theta_c)$.
- Each parent has one child. Parent cares about child's utility
- Parents can make transfer T_c to children
- Perfect credit markets (for parents AND kids)!

$$\max_{T_c} u(c_p) + \lambda u(c_c)$$

s.t.

$$c_p + T_c = y_p(\theta_p)$$
$$c_c = y_c(\theta_c) + T_c$$

Optimality w.r.t. to T_c:

$$FONC(T_c): \ \frac{1}{\lambda} u'(y_p(\theta_p - T_c)) = u'(y_c(\theta_c) + T_c)$$

Use implicit function theorem and assume that $u''(c) < 0$ and $\frac{\partial y(\theta)}{\partial \theta} > 0$:

$$\frac{\partial T_c}{\partial \theta_c} = -\frac{\lambda u''(c_c)\frac{\partial y_c(\theta_c)}{\partial \theta_c}}{u''(c_p) + \lambda u''(c_c)} < 0 \quad (1)$$

$$\frac{\partial T_c}{\partial \theta_p} = \frac{u''(c_p)\frac{\partial y_p(\theta_p)}{\partial \theta_p}}{u''(c_p) + \lambda u''(c_c)} > 0 \quad (2)$$

- $\frac{\partial T_c}{\partial \theta_c}$ (substitution): higher transfers to kids with lower ability
- $\frac{\partial T_c}{\partial \theta_p}$ (income): larger transfers due to high parental ability

Assume (as in data) that θ_c and θ_p are positively related ($\frac{d\theta_c}{d\theta_p} > 0$). Write total effect of child's ability on parental transfer:

$$\frac{dT_c}{d\theta_c} = \frac{\partial T_c}{\partial \theta_c} + \frac{\partial T_c}{\partial \theta_p}\frac{d\theta_p}{d\theta_c} \tag{3}$$

First term (< 0) captures substitution effect; second term (> 0) and captures parental income effect. Simplify and assume $\frac{d\theta_p}{d\theta_c} = \alpha$: we can rewrite the above equation as

$$\frac{dT_c}{d\theta_c} = \frac{\partial T_c}{\partial \theta_c} + \alpha\frac{\partial T_c}{\partial \theta_p}$$

One can show that $\frac{dT_c}{d\theta_c} < 0$ if[1]

$$\frac{u''(c_c)}{u''(c_p)} > \frac{\alpha}{\lambda}$$

If $\alpha = 0$ (independence of θ_c and θ_p) correlation between parental transfer and child's ability is negative. Total effect equal to substitution effect when $\alpha = 0$.

[1]Under strong but not unreasonable assumption that $\frac{\frac{\partial y_p(\theta_p)}{\partial \theta_p}}{\frac{\partial y_c(\theta_c)}{\partial \theta_c}} \simeq 1$. Even if this is relaxed, mechanism stays the same.

Children may change behavior in response to a transfer.

Children may work less (lower permanent income) in response to large transfers ("child-of-Bill-Gates effect"). Assume that

$$y_c = y_c(\theta_c, T_c)$$

$$\frac{\partial y_c}{\partial \theta_c} > 0$$

$$\frac{\partial y_c}{\partial T_c} < 0$$

What changes? It all depends on sign of $\frac{\partial^2 y_c}{\partial T_c^2}$ (rate of decrease in child's permanent income due to T_c) which summarizes the severity of the moral hazard.

- if $\frac{\partial^2 y_c}{\partial T_c^2} < 0$ then, like before, $\frac{\partial T_c}{\partial \theta_c} < 0$ and $\frac{\partial T_c}{\partial \theta_p} > 0$. However the magnitude of both effects becomes smaller (by the same proportion).
- if $\frac{\partial^2 y_c}{\partial T_c^2} > 0$ (and sufficiently large) then the signs of $\frac{\partial T_c}{\partial \theta_c}$ and of $\frac{\partial T_c}{\partial \theta_p}$ can switch!

Comment: if moral hazard becomes increasingly more severe as transfers grow, Bill Gates would not want to leave all his fortune to his kids.

When this effect dominates, transfers decrease in parental income and increase in child's ability

- Heterogeneity in child's income in period 2. Focus on timing, uncertainty and constraints. Test the null hypothesis of altruism (rejected)
- Parent and a child overlap for two periods
- Utility function

$$V_p = u(c_{p1}) + \lambda u(c_{c1}) + E[u(c_{p2}) + \lambda u(c_{c2})]$$

- Parents prepared to make transfers to child. Whether and when they do, depends on child's:
  - second-period income (uncertain as of first period)
  - degree to which child is liquidity-constrained
- Simplifying assumptions: parents have no second-period non-asset income, not liquidity-constrained.
- Two transfers are possible: T_1 in period 1 and T_2 in period 2. Children face "soft" borrowing constraint (non-linear interest rate schedule).

Issue of timing: parents may want to delay transfers to second period for two reasons.

- First, child might strike it rich in period two. Since parents cannot compel repayment of past gifts, best policy is to wait and see whether child really needs help
- Second, parents might wait to make transfers to keep child from overconsuming in period one, in order to appear relatively poor and elicit a larger transfer in period 2

- AHK (1997): delaying transfers allows to withdraw resources in case child's outcomes are very good in period two (important, as it is not possible to get back transfers made in period one!)
- Caveat: resources can be withdrawn only by people who make positive transfers in period two. You can't withdraw a zero transfer!
- Brown et al. (2011) use this fact to show that a parent may fail to relieve a child's education borrowing constraint because parent has no way to enforce repayment of efficient education investment.
- Only when second period transfers are positive, parent can extract preferred share of return by foregone post-schooling transfers. In this case, parent willing to fund the child's efficient level of human capital investment.

A full analysis of the relationship between parental transfers and education outcomes would require panel data before and after schooling on:

- parent-child pairs, with details about education, ability, income and net worth of both parent and
- financial aid data during college years
- measures of intergenerational transfers, including info for a substantial period following college so we can separate parent-child pairs into those parents who do and those who do not make post-college transfers.

No dataset has all these features. Next we overview the characteristics of PSID, NLSY97 and HRS.

For AHK (1997) data are taken from the 1988 Panel Study of Income Dynamics, which includes a special supplement on transfers between relatives. This provides:

- Reliable data on the economic resources of both parents and adult children.
- Sample consists of parents and their children who were in 1968 PSID families and were heads or wives of 1988 PSID households.
- Only about 2 percent of the children were students in 1988.

- Data on income and family composition (in 1988) of the households in which these individuals reside
- Pre-1988 data on their assets, health status, income, and other variables.
- Those 1988 households containing heads or wives who were children in the 1968 study are matched to the 1988 households of their parents. An observation consists of one such matched pair.

Information on transfers is based on the following two-part question:

- (1) During 1987, did you/your family living here receive any loans, gifts, or support worth $100 or more from your parents?
- (2) About how much were those loans, gifts, or support worth altogether in 1987?

Some points about this question deserve mention.

- question specifically refers to loans. AHK treat the responses as transfer measures since there is no evidence on the fraction of the transfers that are actually loans.
- measure of assets of the parents is based on 1984 wealth supplement to the PSID, which is the most recent year prior to 1988
- No reliable info on 'ability'
- Only cross-sectional measure, because only 1988
- Relatively small sample: in AHK there $3,402$ parent-child pairs, including 687 pairs with positive transfers

Used by BSS (2011)

- Biannual national panel study with an initial sample (in 1992) of 12,652 persons and 7,607 households
- It oversamples blacks, Hispanics, and residents of Florida
- Baseline 1992 study consisted of interviews with the 1931-1941 birth cohort and their spouses, if married

Issue of consistency.

- Wave 1 asks about transfers exceeding $500 in the last 12 months and wave 2 asks about transfers exceeding $100 in the last 12 months.
- In waves 3 onwards HRS respondents are asked relatively consistent questions about cash transfers exceeding $500 in the last 24 months.
- In 2005 the exact wording was: Including help with education but not shared housing or shared food (or any deed to a house), in the last 2 years did [the Respondent or Spouse] give financial help totaling $500 or more to any of their children or grandchildren?
- Those answering 'yes' were then asked how much

- Obvious advantage: extensive information about assets and income of parents in the HRS
- Good to study transfers to adult children
- Not a lot of info on kids: difficult to make conditional statements on kids characteristics
- Also, issue of age of kids and selection of older parents
- Inconsistent measures of transfers over time (but getting better after wave 4)
- Ability measures?

Two independent sections of the survey report data on transfers

- Income section: all transfers in the past year
- College experience section: transfers received for education
- Includes nationally representative sample. Approximately 9,000 youths who were 12 to 16 years old as of December 31, 1996.
- Round 1 of the survey took place in 1997.

- Independent youths report **parental transfers in the past year**.
- Aside from allowances and parental loans, respondents state the amount of money they received from each parent or guardian. The exact question asked was: "Other than allowance, did your parents give you any money in [insert year]? Please include any gifts in the form of cash or a check but do not include any loans from your parents?"
- Additionally, round 1 respondents were asked if they made regular payments to their parents during the previous year.
- For respondents living at home, this survey collected information on money paid for room and board.

- College Experience section: records of transfers specifically targeted to finance College.
- Word of warning necessary. After some discussion with individuals at the BLS it has become apparent that:
  1. questions from INCOME SECTION are general enough to be considered as the 'total' of intervivos transfers received in a given year, including transfers specifically earmarked for college (and possibly reported in the College Section);
  2. it is better to use information from Income section as a measure of parental transfers, as the College experience section was lacking (at the time of writing) some internal checks which try to limit and verify the responses
- respondent is questioned about sources of financial aid received during his or her tenure at each college.

- ability measures for kids (not parents): In 1997 and early 1998, NLSY97 respondents were given the computer-adaptive version of the Armed Services Vocational Aptitude Battery (CAT-ASVAB)
- decent background info about parental net worth, income, wages.
- information of co-residence (a form of parental transfers)
- consistency of transfer questions over first 7 waves (after 2004 things have changed, same transfer question is not asked)
- possible problem: transfers only up to a certain age (better as time goes by)
- information on student loans in the College Experience section

- Swedish data from the 1998 wave of the "Household market and non-market activities survey" (HUS).
- Simultaneously contains information on inter vivos gifts and inheritances.
- Superior to previously used Swedish data, as it is possible to distinguish transfers received from parents from transfers from relatives and other people.
- Allows one to assess the
- For an example, see Nordblom and Ohlsson (2010)

Financing of education

- some simple questions: do parents transfer different amounts to kids? Is there variation by child ability, gender, type of college?
- how much crowding out from government programs?
- Parent-child ability correlation: how does it impact transfers, access to credit, long term education outcomes?
- Do constraints on the side of the parents matter? Do parents borrow money to make transfers to kids? Do health shocks to parents have an impact on education choices and longer term outcomes of kids?

Motives for transfers – not just education

- inter vivos transfers might be compensation for differences in permanent economic resources (permanent income). Use proxies for permanent income and look at differences in transfers across siblings: do parents compensate?

- transfers may ease temporary needs, especially with liquidity constraint or may be due to informal insurance arrangements within a family in situations when insurance markets are missing. Use data to identify periods of distress (or other need for kids) then look at changes in transfers?

- Timing of transfers: does it convey any information about income uncertainty and liquidity constraints of both parents and kids.