



Recent Developments in Intergenerational Mobility

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Questions

- Are children's outcomes, such as earnings, correlated with their parents'?
- To what extent are these relationships causal?



Overview

1. Intergenerational Elasticity and Correlation of Earnings
2. Intergenerational Elasticity and Correlation of Education
3. Nature v. Nurture
4. Causal Relationships: Parental Income and Education
5. Causal Effects of other Parental Characteristics
6. Conclusions



Earnings Correlations

Intergenerational Elasticity and Correlation of Earnings

1. Introduction
2. Issues in Estimating the Intergenerational Elasticity
3. Credit Constraints and the IGE
4. Recent IGE Estimates by Country/Time/Gender
5. IGE Decompositions



Earnings Correlations

Intergenerational Elasticity and Correlation of Earnings

1. Introduction/What does the Intergenerational Elasticity Mean?
 - What is goal of society?
 - Highlight importance of understanding mechanisms



Earnings Correlations

1. Introduction/What does the Intergenerational Elasticity Mean?
2. Advances in Estimating the Intergenerational Elasticity
 - Permanent Income
 - Solon (1992)
 - Zimmerman (1992)
 - Mazumder (2005): If there is persistence in the transitory component, need even longer time period



Earnings Correlations

1. Introduction/What does the Intergenerational Elasticity Mean?
2. Advances in Estimating the Intergenerational Elasticity
 - Permanent Income
 - Life-Cycle Bias
 - Haider & Solon (2006)
 - Grawe (2006)
 - Nilsin et al (2008)-Norwegian Register Data
 - Bohlmark & Lindquist (2006)



Earnings Correlations

1. Advances in Estimating the Intergenerational Elasticity
 - Permanent Income
 - Life-Cycle Bias
 - Transition Matrices



Earnings Correlations

Transition Matrices

- Can look at different points in the joint distribution of parental and child earnings
- Also allows one to compare mobility rates of population subgroups
- Bhattacharya & Mazumder (2008)
 - Argued previous use of quintile was arbitrary
 - Look at probability that a son's percentile rank in the earnings distribution of sons exceeds the father's percentile rank in the earnings distribution of fathers.
 - Places more weight on small moves
- O'Neill, Sweetman, Van de gaer (2007)
 - Look at role of measurement error and transition matrices



Earnings Correlations

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 - Credit Constraints and the IGE



Earnings Correlations

Credit Constraints and the IGE

- If no credit constraints (i.e. parents can borrow from their children's future earnings)
- Each family will optimally invest in the human capital of their children
- If ability and human capital are complementary, invest more in high ability children
- IGE will be positive if child ability and parental earnings are correlated and will depend on the strength of intergenerational ability correlations
- If there are credit constraints, low income families may not be able to optimally invest in their children's human capital; extra income will lead to increased human capital investment
- Therefore, IGE will be greater for credit constrained families



Earnings Correlations

Credit Constraints and the IGE: Empirical Evidence

- Some work looks for nonlinearities in the IGE
- More direct test is to try to identify groups who are more likely to be credit constrained
- Model suggests that, for any given parental earnings, high ability children are more likely to be credit constrained
- Grawe (2004) proxies ability with child earnings and implements with quantile regression
- Credit constraints should imply that IGE is higher at higher conditional quantiles; he finds the opposite and concludes no evidence for credit constraints in Canadian data
- Problem is using earnings depend on investments as well as ability and so are endogenous to the presence of credit constraints.



Earnings Correlations

Credit Constraints and the IGE: Empirical Evidence

- Mulligan (1997) splits data based on bequest behavior to create an “unconstrained” group of children who have received or expect to receive bequests of at least \$25,000
- Finds this group does not have significant greater intergenerational mobility, suggesting credit constraints are unimportant
- Mazumder (2005) notes that they may in fact have been constrained when the child was young
- He separates families by net worth (under and over the median) using SIPP data
- Finds larger IGEs for low net worth families, the differences are not statistically significant
- Problem with this literature: Any two groups will differ along multiple dimensions and it is dangerous to infer that differences in IGEs come from credit constraints rather than some other factor/set of factors



Earnings Correlations

Credit Constraints and the IGE

- Theoretical Background (Recent work)
 - Han and Mulligan (2001)
 - Grawe and Mulligan (2002)
 - Grawe (2004)
- Evidence
 - Grawe (2004)
 - Mulligan (1997)
 - Mazumder (2005)



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Earnings Correlations

IGE Estimates by Country/Time/Gender

- Table of Recent Estimates
- Why estimates may differ across country/time: focus on role of institutions/government
 - . Solon (2004): IGE lower with progressivity of government education
 - . Ichino, Karabarbounis, Moretti (2009): political economy considerations are important for education policy and thus influence the IGE
 - . Mayer and Lopoo (2008): IGE higher in low spending (education) states
 - . Pekkarinen Uusitalo, Kerr (2008): a reduction in tracking in Finland leads to increased intergenerational mobility, lower IGE.



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Earnings Correlations

IGE Decompositions

- Goal is to assess the role of intermediate variables
- How much of the IGE can be explained by the effect of parental earnings on the intermediate outcome and the effect of the intermediate outcome on child earnings.
 - Bowles and Gintis (2002):
 - treat both IQ test scores and education as intermediate variables
 - Blanden, Gregg, MacMillan (2007)
 - Adds in non-cognitive ability as intermediate variable
 - Eriksson, Bratsberg, Raaum (2005)



Education Correlations

1. Why study education?
2. Country/time Comparisons
 - Hertz et al (2007)
 - Chevalier, Denny, McMahon (2009)
3. Why differences across country/time?



Nature v. Nurture

Sibling Correlations

Adoptees



Nature v. Nurture

Sibling Correlations

- Provide an alternative measure of intergenerational influences
- Positive correlations imply that shared genetic and environmental factors cause siblings to be more similar than two random members of society
- Same set of measurement issues as IGE
- Can be shown to equal $\rho = \beta^2 + s$

where β is the IGE and s is a measure of all variables shared by siblings that are unrelated to parental earnings (Solon, 1999).



Nature v. Nurture

Sibling Correlations

Recent Estimates

- Bjorklund et al (2009)
- Mazumder (2008)



Nature v. Nurture

Sibling Correlations

The Role of Neighborhood

- How much of sibling correlation due to sharing same neighborhood?
- Page and Solon (2003) find that half of brother correlation can be explained by neighborhood.
- Raaum, Salvanes and Sørensen (2006) do a similar exercise in Norway and find neighborhood explain significantly less.



Nature v. Nurture

Different Types of Siblings

- Bjorklund, Jantti, and Solon (2005)
- Use Swedish register data
- Have data on different types of siblings and twins (identical and fraternal twins, full and half siblings) reared together and apart
- Under certain assumptions, can back out genetic, shared environmental factors, and not shared (idiosyncratic) environmental factors.
- They find a significant role for genetic and shared environmental factors, although the biggest role is played by non-shared environmental factors.
- Clearly literature will evolve as more/better data becomes available



Nature v. Nurture

Adoptees

If we assume that

1. Adopted children are randomly assigned to families as infants
2. Adopted children are treated exactly the same as biological children

Then adoption can be considered to be an experimental intervention that randomly assigns children to families.



Nature v. Nurture

Adoptees

- Bivariate Regressions
 - Sacerdote (2007)
 - Most plausibly random assignment
 - Find genetics is most important for education
 - Bjorklund, Lindahl, Plug (2006)
 - Strong effect of adopted parents income in Sweden
 - Liu and Zeng (2007)
 - No effect of adopted parents income in PSID



Nature v. Nurture

Adoptees

- **Multivariate Regressions**
 - Sacerdote (2007)
 - Finds mother's education and family size to be the most important factors
 - Plug and Vijverberg (2005)
 - Find small effect of family income on education of children
 - Plug (2004)
 - Finds education of adoptive fathers but not mothers influences child's education
- **Using Biological and Adoptive Parents**
 - Bjorklund, Lindahl, Plug (2006)
 - Find similar size effects for biological fathers and adoptive fathers when looking at education.
 - Biological mothers have bigger effects than adoptive mothers.



Causal Relationships

1. Effect of Income on Child Outcomes
2. Effect of Parental Education on Child Outcomes
3. Causal Estimates using Intermediate Channels e.g. education affects birth weight, birth weight affects child outcomes



Causal Relationships

Effect of Income on Child Outcomes

- **Dahl and Lochner (2005)**
 - EITC expansion
 - Estimate causal effect of income on children's math and reading (NLSY)
- **Morris, Duncan, and Rodrigues (2004)**
 - Four welfare and anti-poverty programs
 - Find family income has a positive impact on school achievement of preschool but not older children.
- **Oreopoulos, Page, and Stevens (2008)**
 - Use worker displacement, Canadian data
 - Sons whose fathers were displaced earn 9% less
- **Rege, Telle, and Votruba (2007)**
 - Norwegian data
 - Father's plant closure leads to a decline in children's graduation year GPA
 - Mother's plant closure leads to an increase in school performance
 - Consistent with "role theories"
- **Blanden and Gregg (2004)**
 - Sibling fixed effects



Causal Relationships

Effect of Income on Child Outcomes: Lots More Papers...

- Shea (2000)
- Blau (1999)
- Levy and Duncan (2000)
- Mayer (1997)
- Chevalier, Harmon, O'Sullivan and Walker (2005)



Causal Relationships

Effect of Parental Education on Child Outcomes

- Twins
 - Behrman and Rosenzweig 2002
 - Antonovics and Goldberger 2004
 - Bingley, Christensen, and Jensen 2009
- Adoptees
 - Plug 2002
 - Sacerdote 2007
- Instrumental Variables
 - Chevalier 2004, Oreopoulos, Page and Stevens 2006, Black, Devereux, and Salvanes 2005, Holmlund, Lindahl, and Plug (forthcoming)
 - Maurin and McNally (2008)
 - Carneiro, Meghir and Parey (2007)



Causal Relationships

Causal Estimates using Intermediate Channels e.g. education affects birth weight, birth weight affects child outcomes

Currie (2007) provides review

Possible other directions:

- Family Size
- Age at First Birth



Causal Effects of Other Parental Characteristics

1. Occupations and Jobs
 - Kramarz and Skans (2007)
2. Attitudes and Social Behavior
 - Fernandez, Fogli, Olivetti (2004)



To Note: Other Correlations

Occupations and Jobs

- Hellerstein and Morrill (2008)
- Ermish and Francesconi (2002)
- DiPietro and Urwin (2003)

Smoking (Loureiro et al (2006))

Charitable Donations (Wilhelm et al (2008))

Risk/Trust (Dohmen et al (2008))

Question: Where does economics end?



Remaining Questions

Too big for us?

1. Immigration

2. Role of family background (more generally) on children's outcomes



Conclusions

1. What have we learned about transmission mechanisms?
2. What parental and family characteristics matter?
3. What do we still need to learn?