INSURING LABOR INCOME SHOCKS: THE ROLE OF THE DYNASTY

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(Preliminary and Incomplete)

The Role of the Family

- Families can be formidable institutions for providing insurance when formal markets fail or are missing

- Two channels:
  - Pooling risks among members of the *same* generation
  - Facilitating transfers *across* generations

This Paper

- Focus on the second channel
  - Do parents buffer shocks to children's income?
  - What type of shocks (transitory vs persistent) are insured?
  - For married kids: How is insurance shared between parents of the two spouses? Do parents only respond to their own child's shocks?
  - *In progress*: Do parents "play favorite", discriminate by gender or presence of grand-kids, etc.?

Related literature

- Role of parents as source of insurance: Kaplan (2012), Boar (2021), Andersen et al (2020)
  - We focus on monetary transfers and realized shocks
- Dynastic transfers: Kotlikoff and Spivak (1981), Altonjii, Hayashi and Kotlikoff (1997)
  - We look at insurance vis-a-vis income shocks
- Literature on the role of *own* family or other arrangements as income risk sharing device (Blundell, Pistaferri and Preston 2008; Guler, Guvenen and Violante 2012; Ortigueira and Siassi 2013; Heathcote, Storesletten and Violante 2014; Blundell, Pistaferri and Saporta-Eksten, 2016)
  - We look at parents as source of insurance

Outline

- Implications for parents' wealth dynamics from a simple model
- Data
- Identification
- Results

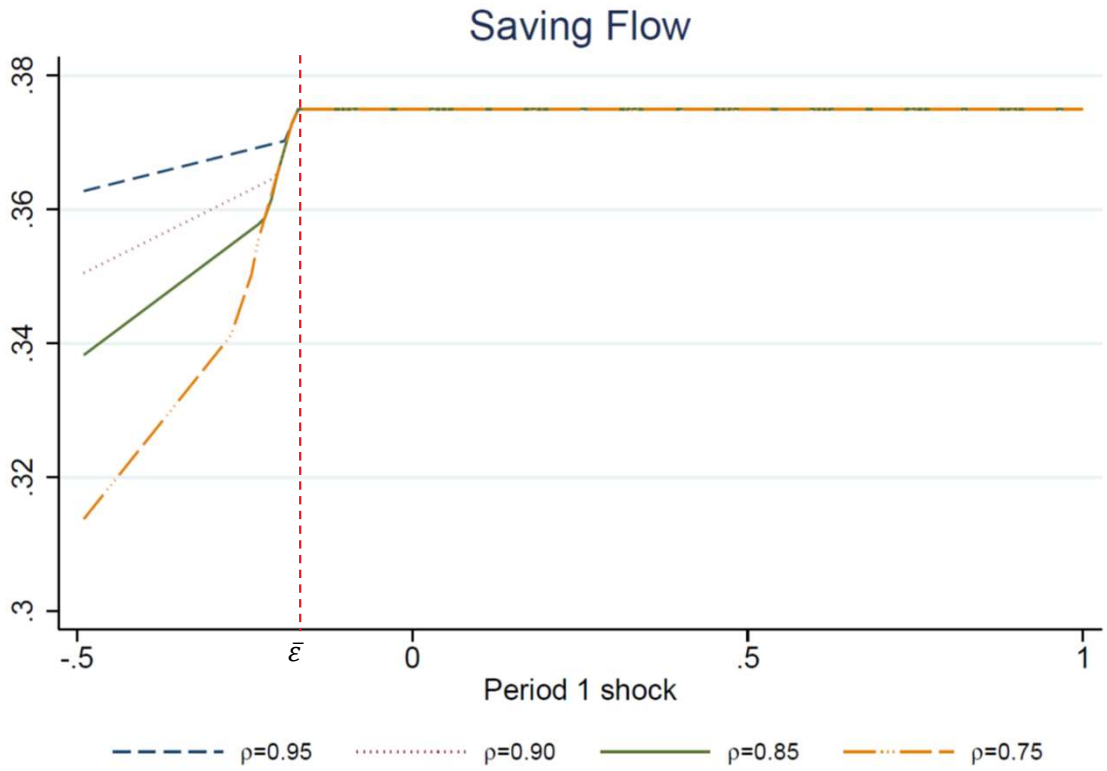
A Simple Model

- Three period model, with parents and kids interacting in the last two
- Concave, separable utility; parents are altruistic

- Kids cannot borrow/save, have cash-on-hand c^k
- Parents decide savings Δw^p, and may make current and future non-negative transfers τ_1 and τ_2 to their kids

- Parents' decisions made after observing shocks to kid's income in first period, ε_1^k
- Shocks are persistent: $\varepsilon_2^k = \rho\varepsilon_1^k + \eta_2^k$

Main implications: current shocks

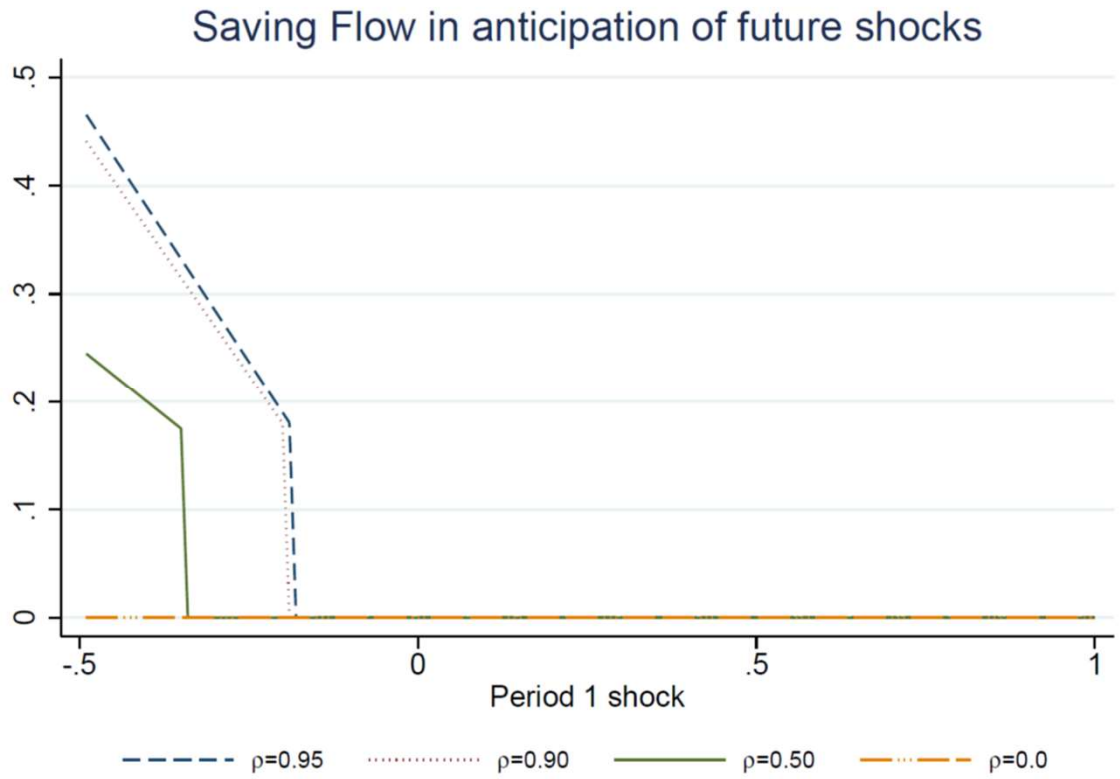


- When both transfers are active ($\epsilon_1^k \leq \bar{\epsilon}$):

$$\Delta w_1^p = \frac{1}{2} y^p + \frac{1}{2}(1-\rho)\epsilon_1^k - \frac{1}{2} w_o^p$$

- Do nothing if positive or mildly negative shocks
- Dissave (save less) if negative current shock to finance transfer

Main implications: persistent shocks



- Saving against transfers to be made in the future due to shocks being persistent

The empirical model

- Estimate by OLS:

$$\Delta w_{it}^{p} = \gamma_0 + \gamma_1 y_{it}^{p} + \gamma_2 w_{it-1}^{p} + \gamma_3 c_{it-1}^{k} + \beta^{+} \varepsilon_{it}^{k} \mathbf{1}\{\varepsilon_{it}^{k} \geq 0\} + \beta^{-} \varepsilon_{it}^{k} \mathbf{1}\{\varepsilon_{it}^{k} < 0\} + u_{it}$$

- Model predictions: $\beta^{+} = 0, \beta^{-} > 0$
- OLS estimate of β^{-} is a weighted average of response to transitory (β^{T}) and persistent shocks (β^{P})

Empirical challenges

- Need data that:
  - Link families intergenerationally
  - Contain info on parents' and kids' income and assets
  - Contain information on plausibly exogenous sources of income fluctuation

Our Data

- We use Norwegian administrative data (1997-2014) that meet these challenges:
  - Families can be intergenerationally linked and observed for a long time period
  - Exhaustive information on virtually all assets and income sources
  - Can match workers with their firms, providing a source of exogenous variation in wages $\rightarrow$ firm shocks are partly transmitted to workers

Wealth and income notions

- Measures of parents' wealth
  - Change in liquid assets → a measure of transferable purchasing power to buffer shocks
- Income: the sum of wages and pensions
  - Captures post-shock available resources
  - For kids it is mostly wages, for parents it is mostly (exogenous) pensions or transfers
- Cash on hand: liquid wealth plus income → kids' consumption

Sample selection

- Focus on "kids" aged 25-55
- Employed in the private sector → to match with their firm's balance sheets and obtain an instrument for wage fluctuations
- Drop observations where parents and children work in the same industry, and children with earnings below "basic income"
- Sample: 3 million child-parents pairs, observed between 1997 and 2014
  - 13 million person-year obs., 9 million married "kids"

Income and firm Value Added Shocks

- Firm value-added shocks. Estimate:

$$\log(VA_{jt}) = X'_{jt}\psi + v_{jt}$$

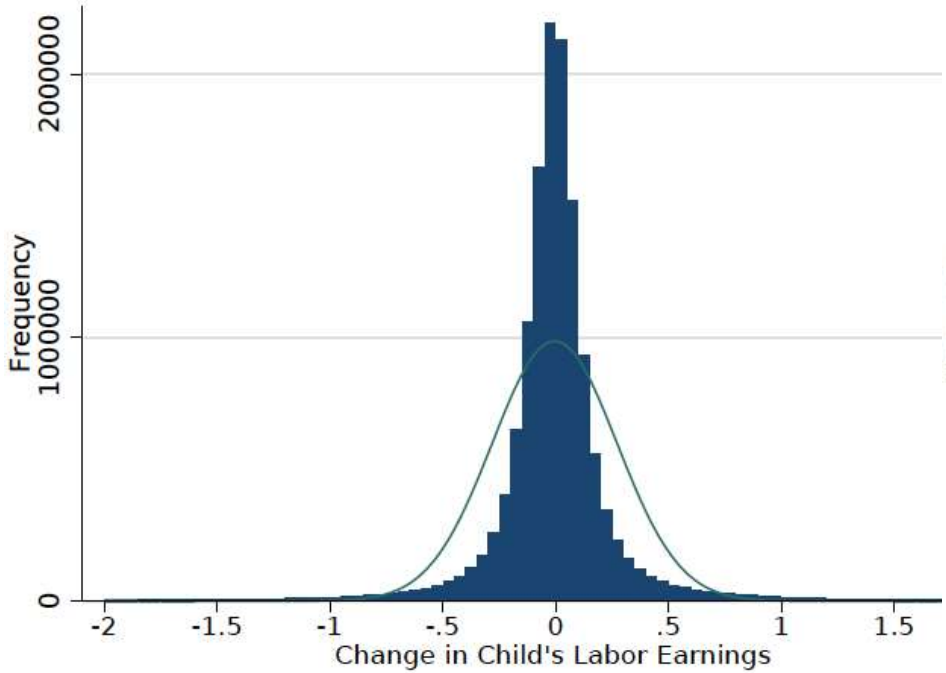
  - First-difference of residual Δv_{jt} is our measure of firm shock
  - X includes time x sector dummies to capture predictable components

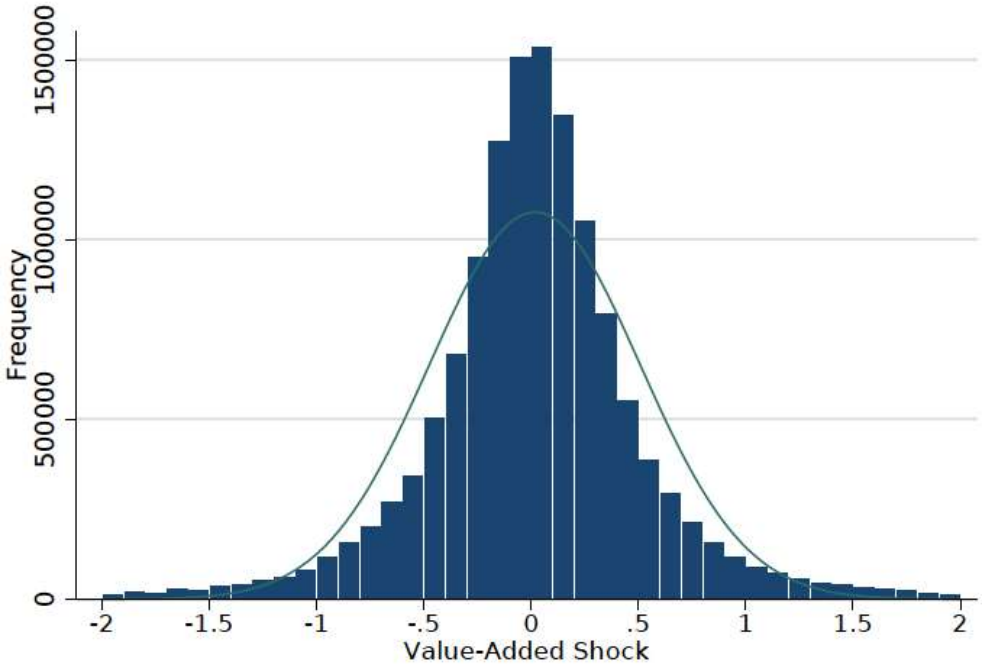
- Kid's labor income shocks. Estimate:

$$\log(y^k_{it}) = Z'_{it}\lambda + \varepsilon_{it}$$

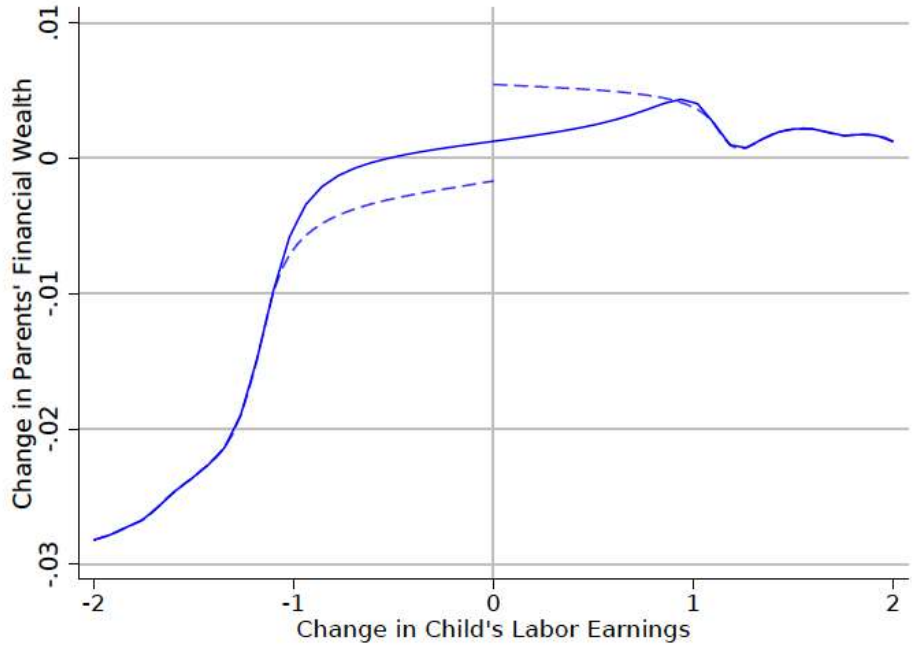
  - First-difference of residual $\Delta\varepsilon_{it}$ is our measure of the kid's income shock
  - Z includes demographics, time x sector dummies to capture predictable components (and potentially common shocks)

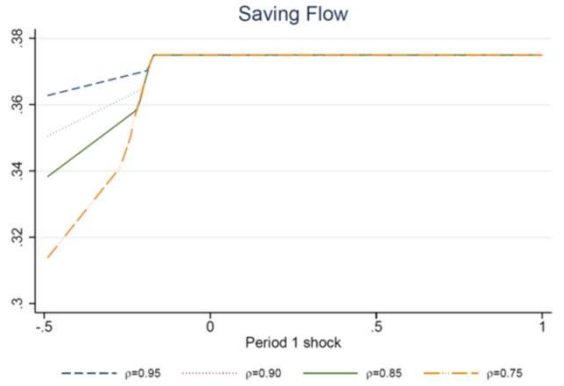
Kid's income and firm VA shocks





Testing main implications: current shocks





Testing main implications: regression

	OLS Regression on total current shock	
ε_{it}^{k}	0.014*** (0.0008)	
$\varepsilon_{it}^{k} \times \mathbf{1}\{\varepsilon_{it}^{k} < 0\}$		0.040*** (0.0013)
$\varepsilon_{it}^{k} \times \mathbf{1}\{\varepsilon_{it}^{k} \geq 0\}$		-0.005*** (0.0012)
Parents' wealth	-0.111*** (0.0002)	-0.111*** (0.0002)
Parents' income	0.073*** (0.0005)	0.074*** (0.0005)
Kid's cash on hand	0.073*** (0.0004)	0.071*** (0.0004)

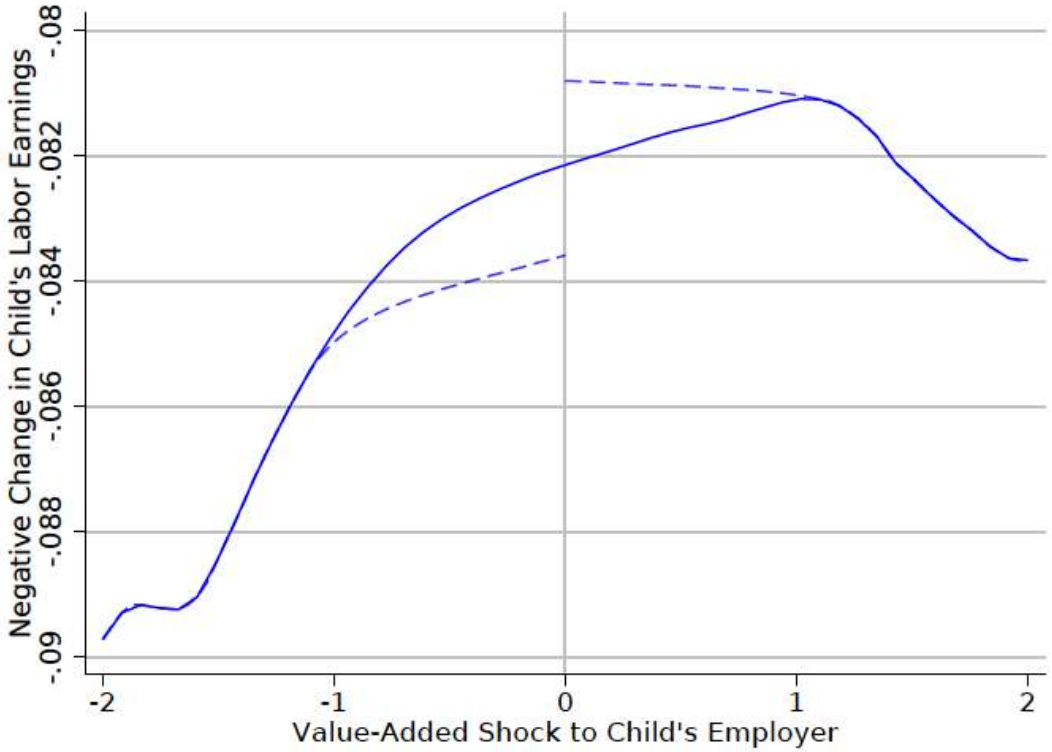
Response to permanent shocks: identification

- OLS estimate measures the joint parents' savings response to transitory and persistent shocks
- To tell them apart we:
  1. First, identify response to persistent shocks
  2. Then back up response to transitory shocks
- Rely on GPS (2005): firms fully insure workers vis-à-vis transitory shocks to their VA and pass through part of the persistent shocks

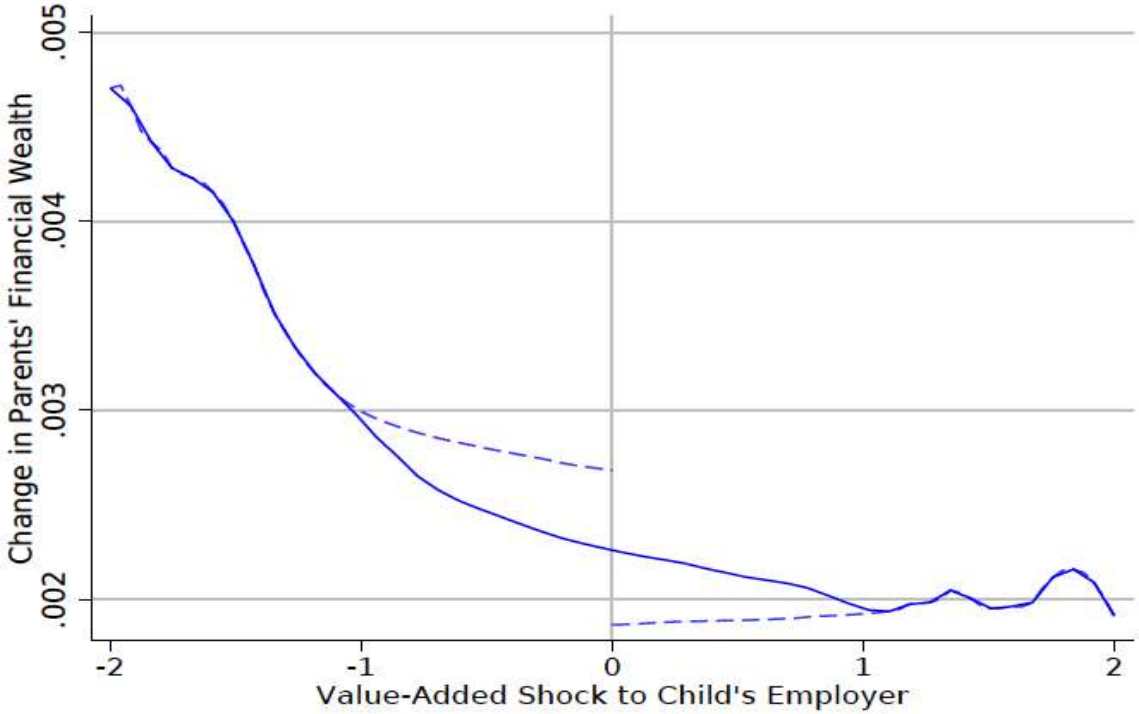
Identification 2

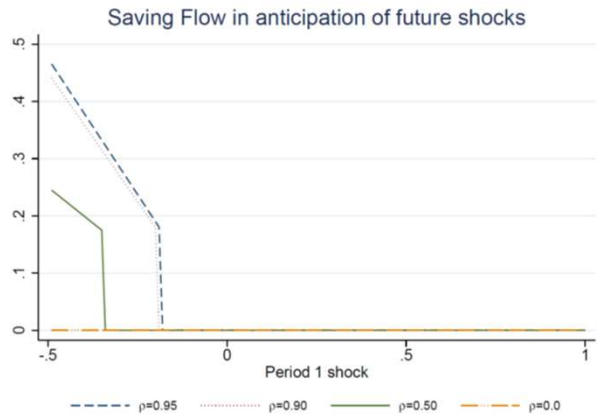
- Focus on workers in private firms
- A regressions of the negative change in kid's income on the negative change in the firm's value added isolates permanent drops in income
  - (first stage for IV)

Results: First Stage of IV



Results: Permanent shocks, Reduced Form





Permanent shocks regressions: IV

	IV regression, change in parents' wealth	
$\varepsilon_{it}^{k} \times \mathbf{1}\{\varepsilon_{it}^{k} < 0\}$	-0.288*** (0.1045)	-0.317*** (0.1054)
$\varepsilon_{it}^{k} \times \mathbf{1}\{\varepsilon_{it}^{k} \geq 0\}$	0.106 (0.0720)	
Parent wealth	-0.109*** (0.0004)	-0.109*** (0.0004)
Parent income	0.068*** (0.0015)	0.069*** (0.0013)
Kids' cash on hand	0.083*** (0.0044)	0.077*** (0.0019)

Backing up response to transitory shock

Income variance decomposition	
$\sigma^2_{\varepsilon^T}$	0.105
$\sigma^2_{\varepsilon^P}$	0.077
$\frac{\sigma^2_{\varepsilon^P}}{\sigma^2_{\varepsilon^P} + \sigma^2_{\varepsilon^T}}$	0.42

Elasticities from regressions	
β_{OLS}	0.040*** (0.0013)
$\beta^P (= \beta_{IV})$	-0.317*** (0.1054)
Implied transitory shock elasticity	
β^T	0.52*** (0.1134)

Replacement rate of transitory shock

- At sample mean of child's labor income, a 10% shocks amounts to an income loss of about $4,280
- At sample mean of parents' liquid asset holdings, our estimates imply a transfer-induced reduction in parents' liquid assets of about $2,400
- Thus, parental insurance can cover about **half** of children's income loss, a non-negligible effect
- Much larger than Andersen et al's (2020) estimate (7%)

Other Results

1. *Blood matters*: Parents more likely to insure when their own son/daughter – rather that their daughter/son-in-law – suffers an income loss

2. Parents are less likely to respond when their child has alternative forms of insurance (i.e., a working spouse)

3. When there are multiple sets of parents, there is more insurance than when only one set of parents is present
   - No free-riding; competition for "attention" (or grand-kids' attention)?

4. No evidence of reverse insurance: Kids <u>do not</u> insure parents

Conclusion

- Strong evidence that transfers from parents to kids are a key source of insurance vis a vis labor income shocks
- Does not require a specific precautionary motive, only that parents have more assets than kids, care about them and have concave utility
  - important for macro models
- Extension: interaction between post shock transfers and precautionary savings
  - A high variance of future shocks may tone down current transfer motive