

Research on Tax Data in the United States

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United States Tax Data

- The **IRS Databank**: A Population Panel Dataset for Tax Policy Research

(In collaboration with Statistics of Income at IRS)

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- Balanced panel of everyone in the U.S. between 1996-2010
- Approximately 6.7 billion rows
- 90% of working-age adults file individual tax returns in a given year
- Many variables observed for non-filers via third-party reports
- Data on earnings, income, savings, social insurance, college, housing, geography, family ties, corporate balance sheets

Does Parental Income Affect College Enrollment? Evidence from Timing of Parental Layoffs

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Introduction

- Children in top income quartile five times more likely to graduate from college than children in bottom quartile, and gap is growing (Bailey & Dynarski 2011)
- Why don't more low-income children go to college?
- Three competing explanations (Becker 1964, Carneiro & Heckman 2002)
 1. Current income (e.g., to pay for college)
 2. Earlier income (e.g., to pay for pre-school, health care)
 3. Other factors (beliefs, preferences, abilities)

Introduction

1. Current income (e.g., to pay for college)

- Theoretical motivation: human capital markets lack collateral
- Policy motivation: US government transfers ~\$150B or ~5% of federal budget to parents each year
 - Child Tax Credit, Dependent Exemption, EITC, others
 - Many parents with older children, higher incomes
- Empirical challenge: parental income endogenous
- Two innovations:
 - Administrative data
 - Quasi-experimental research design: timing of parental layoffs

Illustration: Outcome Variable at Age 18

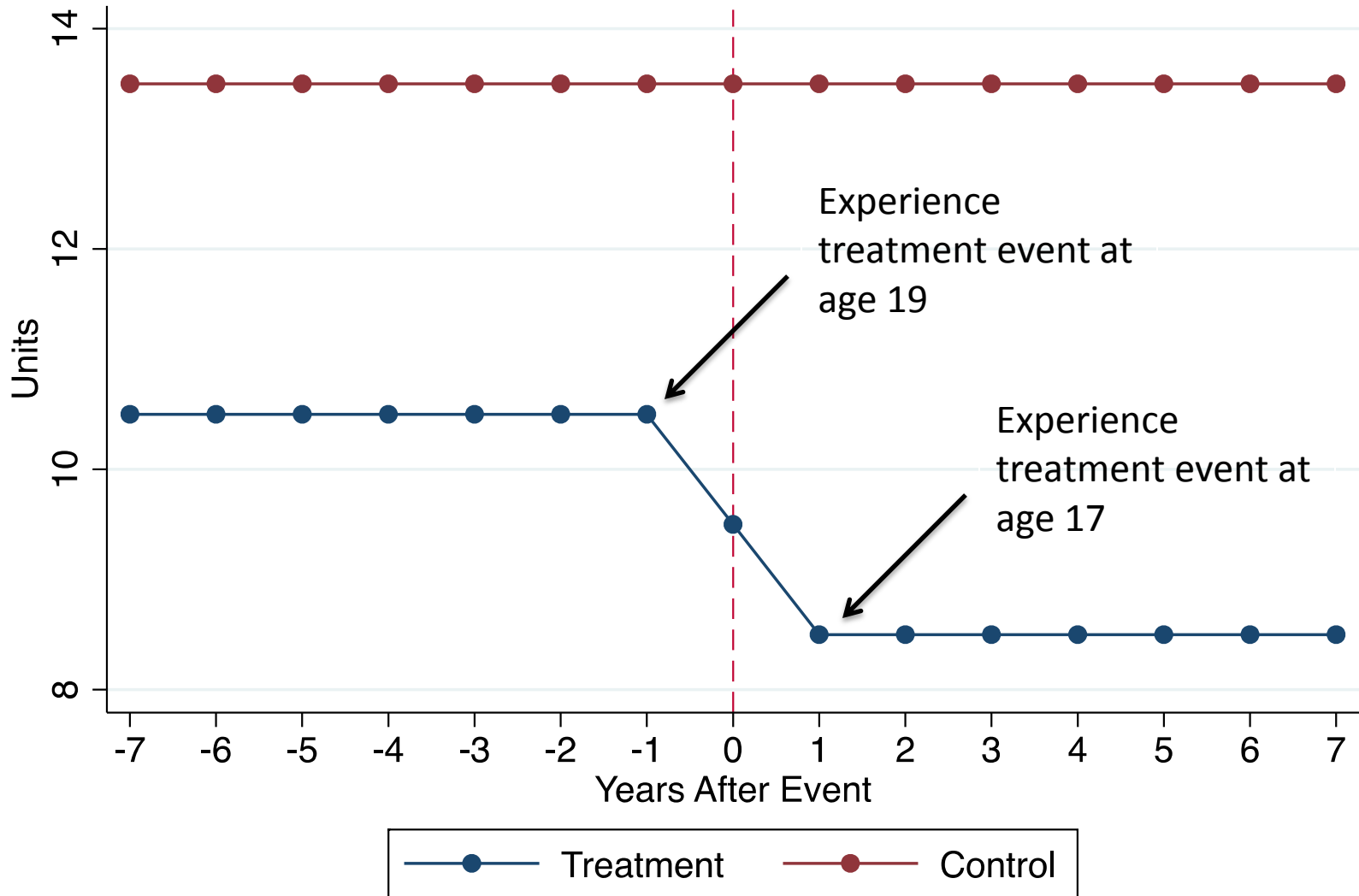


Illustration: Outcome Variable at Age 18

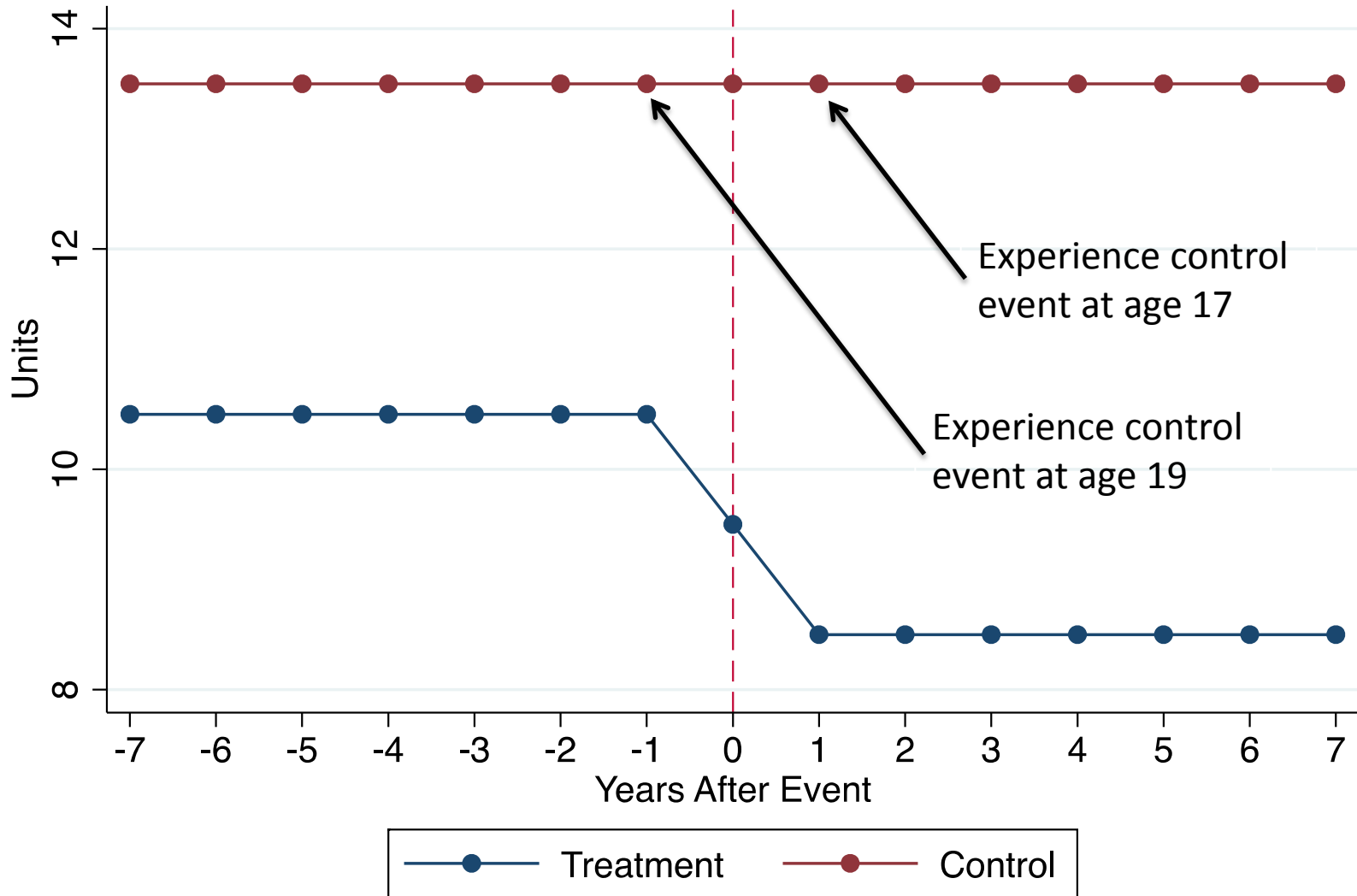
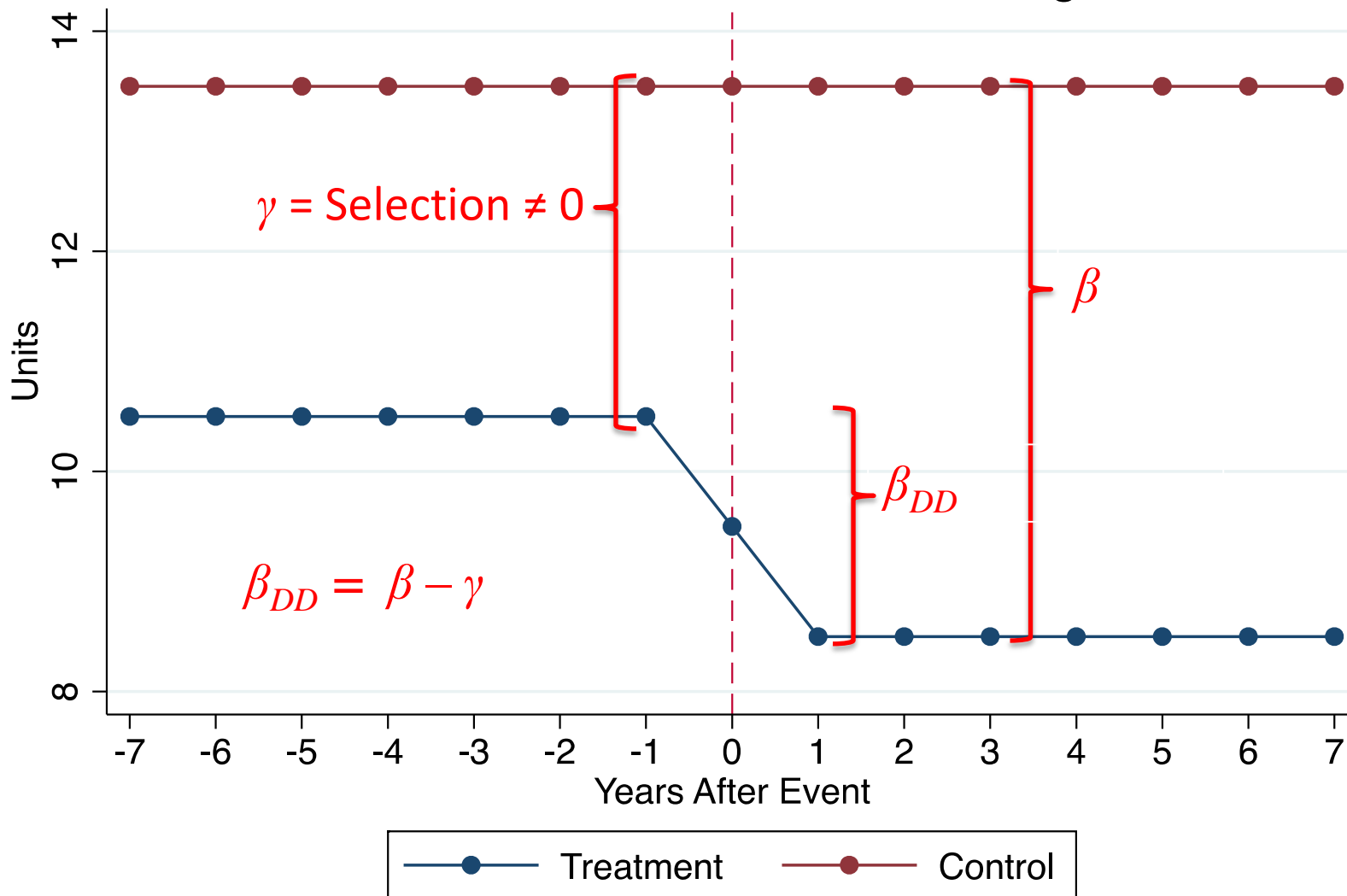


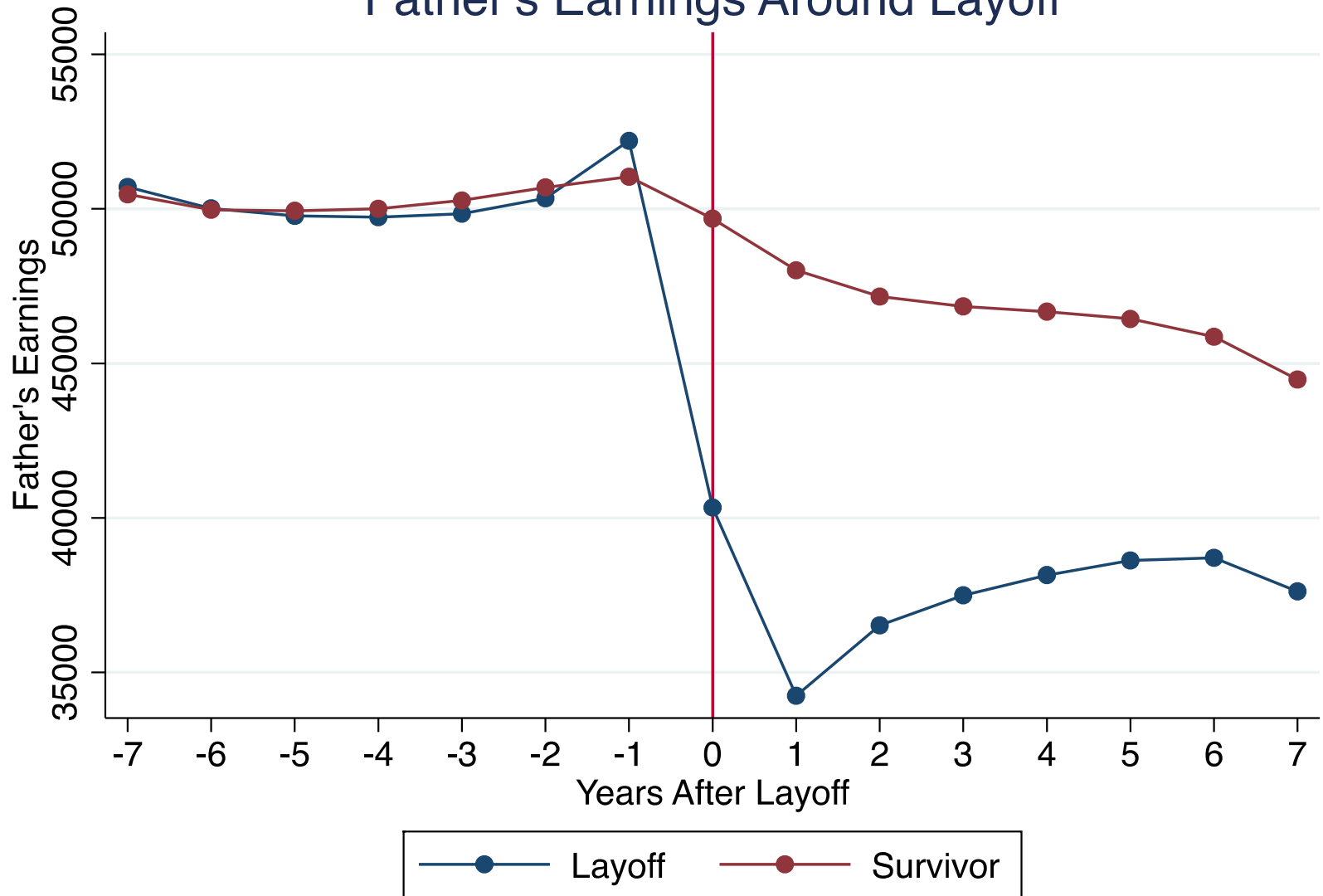
Illustration: Outcome Variable at Age 18



Data

- Focus on layoffs of fathers
 - Easier to compare with prior work on layoffs
 - Larger shocks for more families
- Layoff fathers: “treatment event”
 - “Layoff at **T**” = Positive UI at **T**, zero UI at **T-1**
- Survivor fathers: “control event”
 - “Survival at **T**” = Zero UI at **T**, zero UI at **T-1**, positive earnings at **T-1** in a firm with **>0** layoffs at **T**
 - Propensity-score reweight to match Layoff fathers

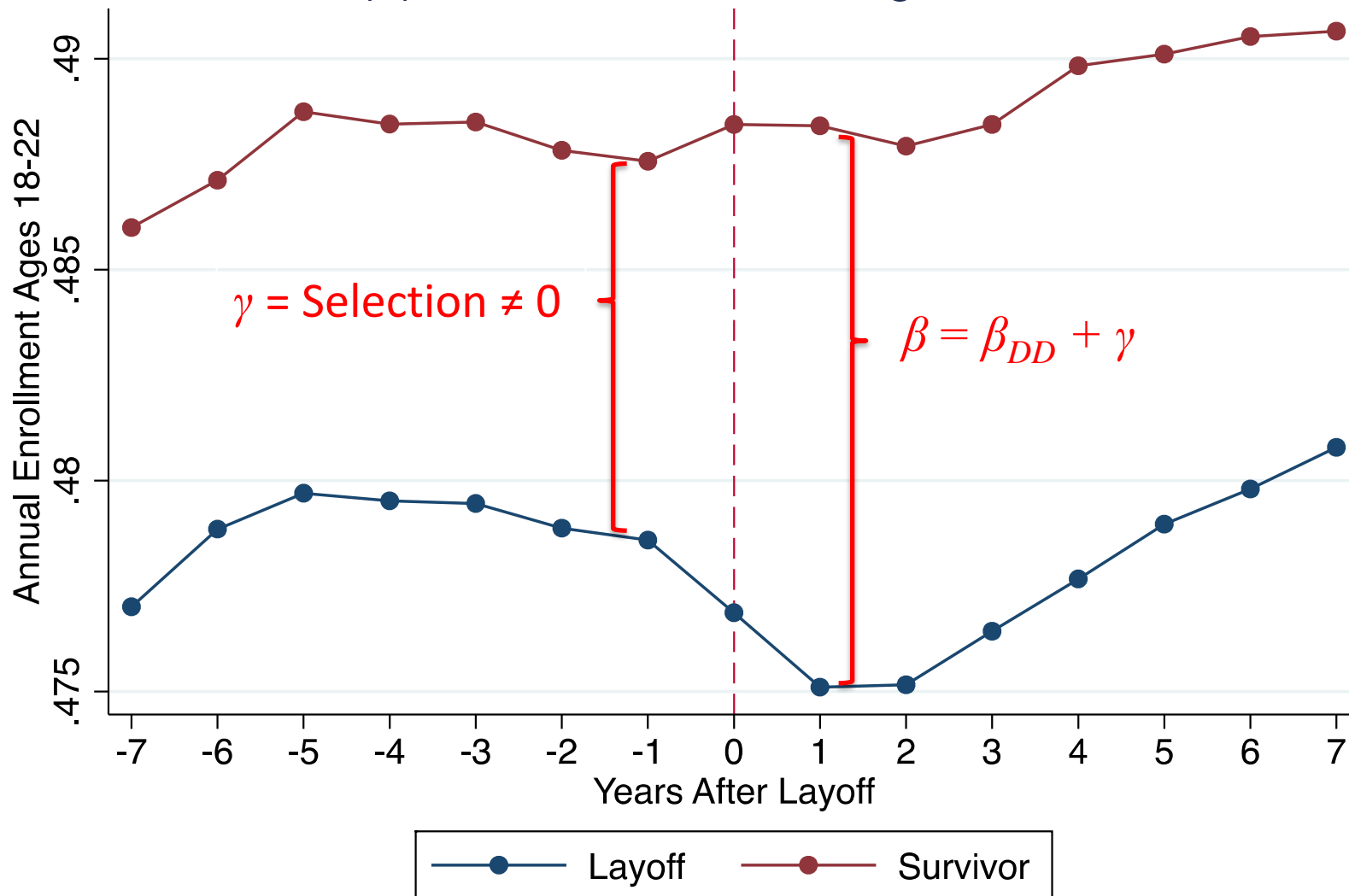
Father's Earnings Around Layoff



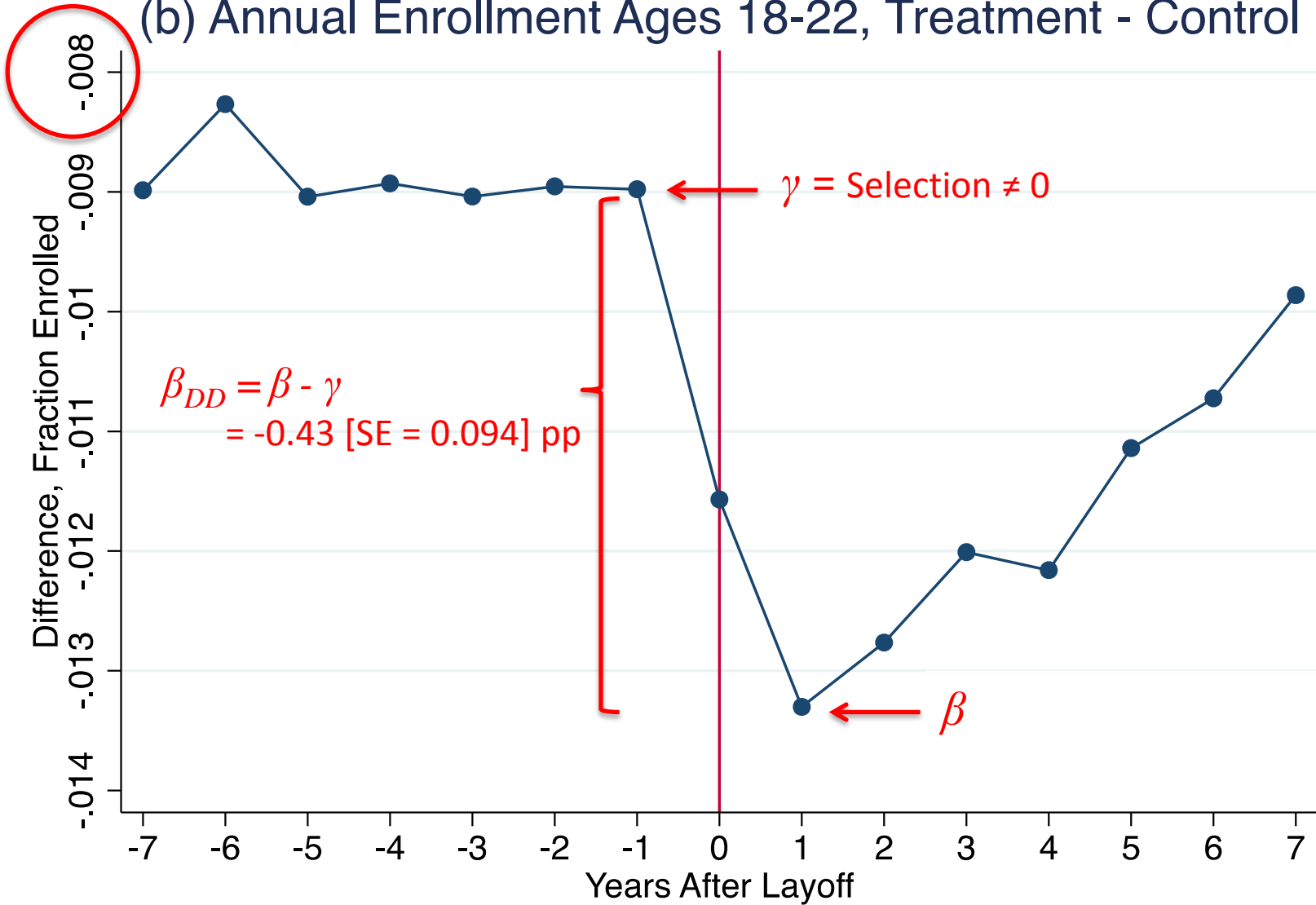
Effects of Layoffs on Parents

- Permanent **earnings** -15%
- Permanent **income** -10% (NPV wealth loss of \$50,000-100,000)
- Permanent **consumption** decline: mortgage interest \approx -9%
- Food consumption in PSID: -10% (Gruber 1997, Stephens 2001, 2004)
- Basic lifecycle model: permanent, unanticipated income shock reduces consumption one-for-one at typical asset levels
- Expect flexible expenditures to fall by more in short-run

(a) Annual Enrollment Ages 18-22



(b) Annual Enrollment Ages 18-22, Treatment - Control



Effects of Layoffs on Children

- This effect is small considering \$50,000-\$100,000 wealth loss
 - ~1% of base enrollment and years enrolled 18-22
 - ~13% of cross-sectional corr(income, college)
 - NPV lifetime child earnings loss \approx \$1,000-3,000
 - ~1 SD teacher quality in one grade (Chetty, Friedman, Rockoff 2012)
- Effects on other outcomes also small and precisely estimated
 - College quality (-), cost of college (-), earnings (+)

Effects of Layoffs on Children

- Why do layoffs have such small impacts on college choices?

$$\underbrace{\frac{DCOLLEGE}{DLAYOFF}}_{\text{Small}} = \underbrace{\frac{DINCOME}{DLAYOFF}}_{\text{Large}} \cdot \underbrace{\frac{DCONTRIBUTIONS}{DINCOME}}_{\text{Small}} \cdot \underbrace{\frac{DCOLLEGE}{DCONTRIBUTIONS}}_{\text{Large}}$$

Small
0.43 pp

Large
\$6,000

Small
5-10%

Large
3pp/\$1,000

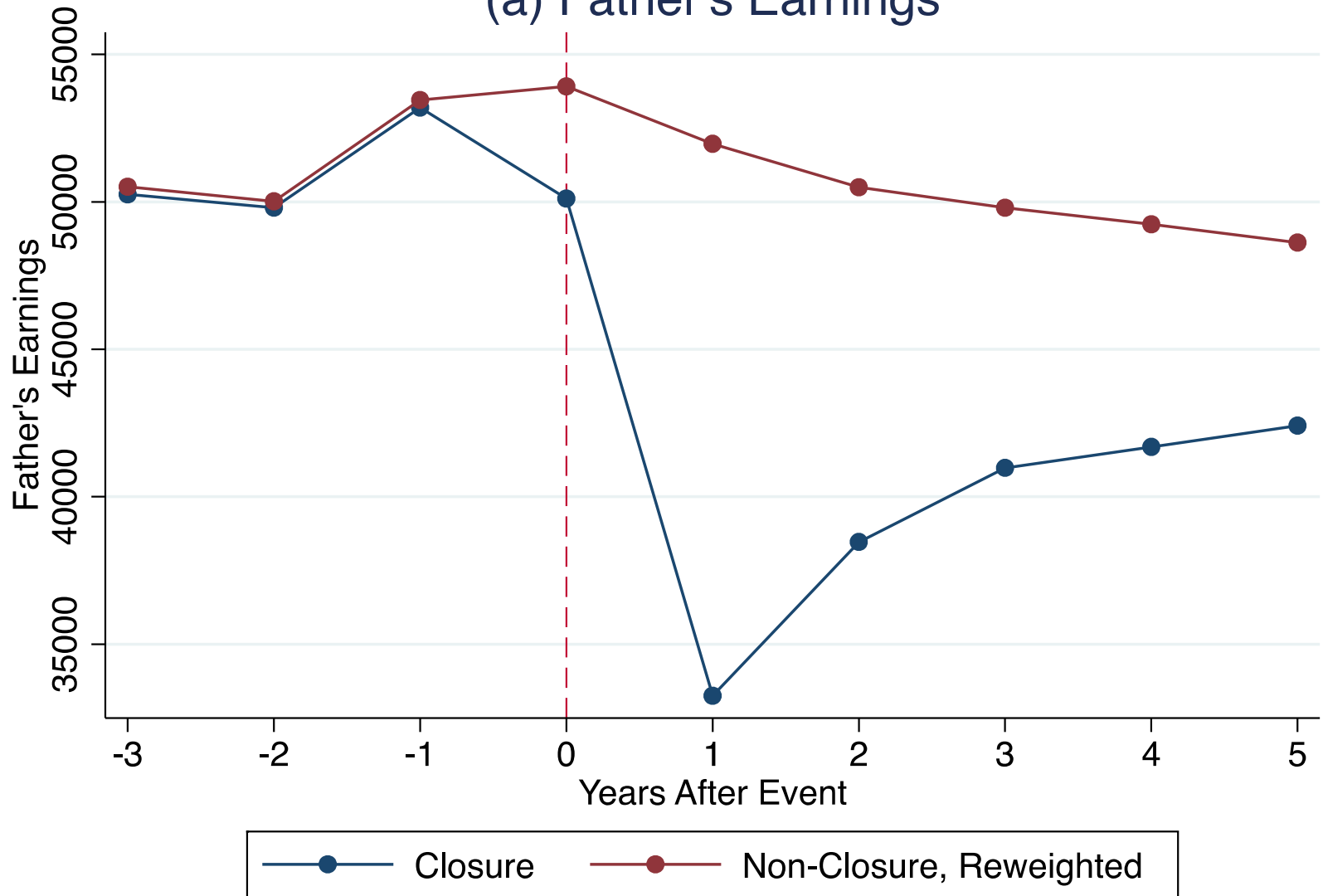
(Engel Curve:
Sallie Mae and
NPSAS)

(financial aid
literature)

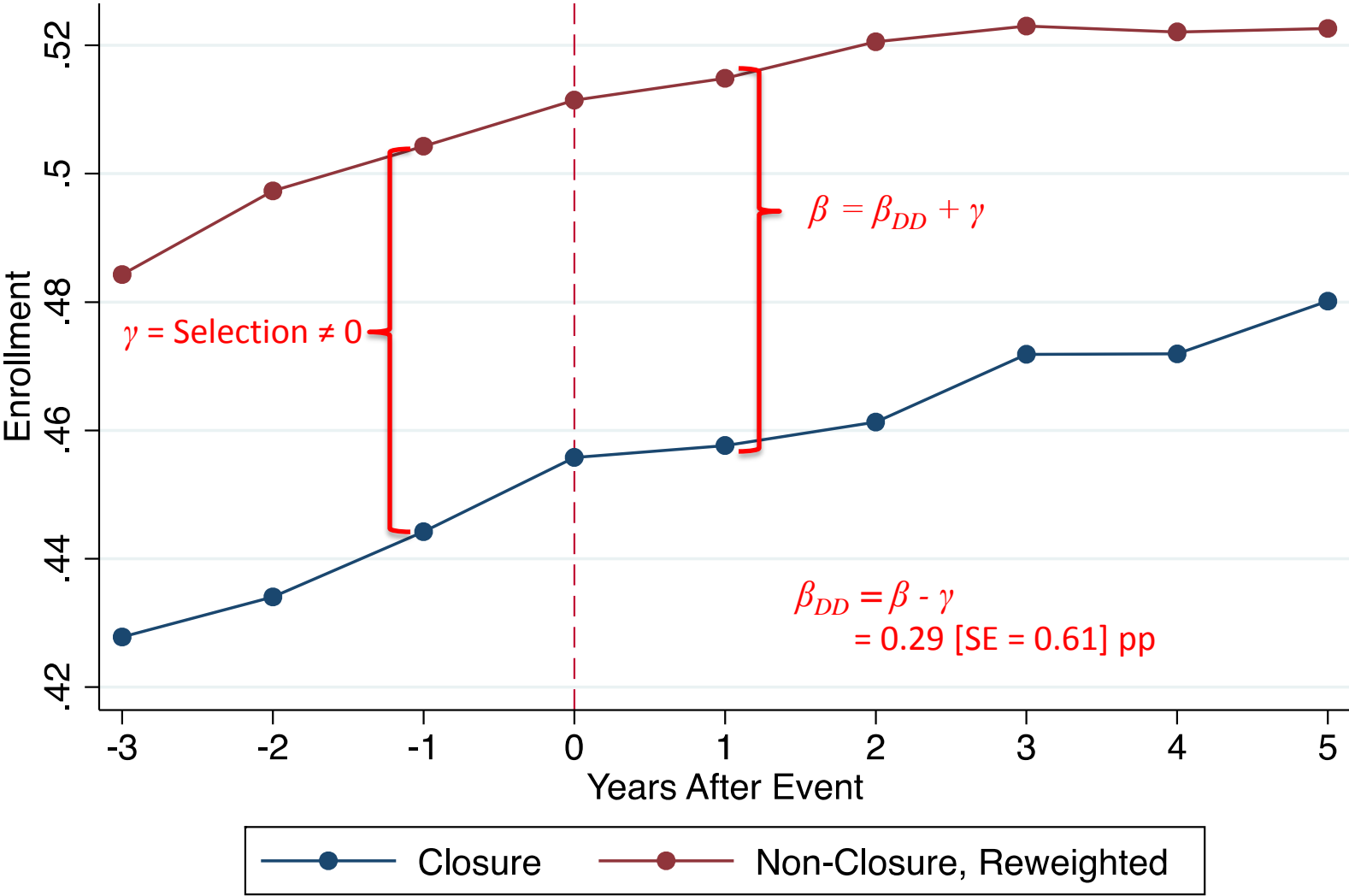
Effects of Layoffs on Children

- Results so far have exploited all parent layoffs
- Recent work on layoffs has restricted to firm closures (e.g., Oreopoulos, Page and Stevens 2008, Bratberg, Nilson and Vaage 2008, Rege, Telle and Votruba 2008)
 - Eliminates within-firm selection into layoff
 - Concern: between-firm selection
- Construct universe of firm closures in US
 - Large precision loss: Closure sample <1% as large as Layoffs

(a) Father's Earnings



College Enrollment Around Closure



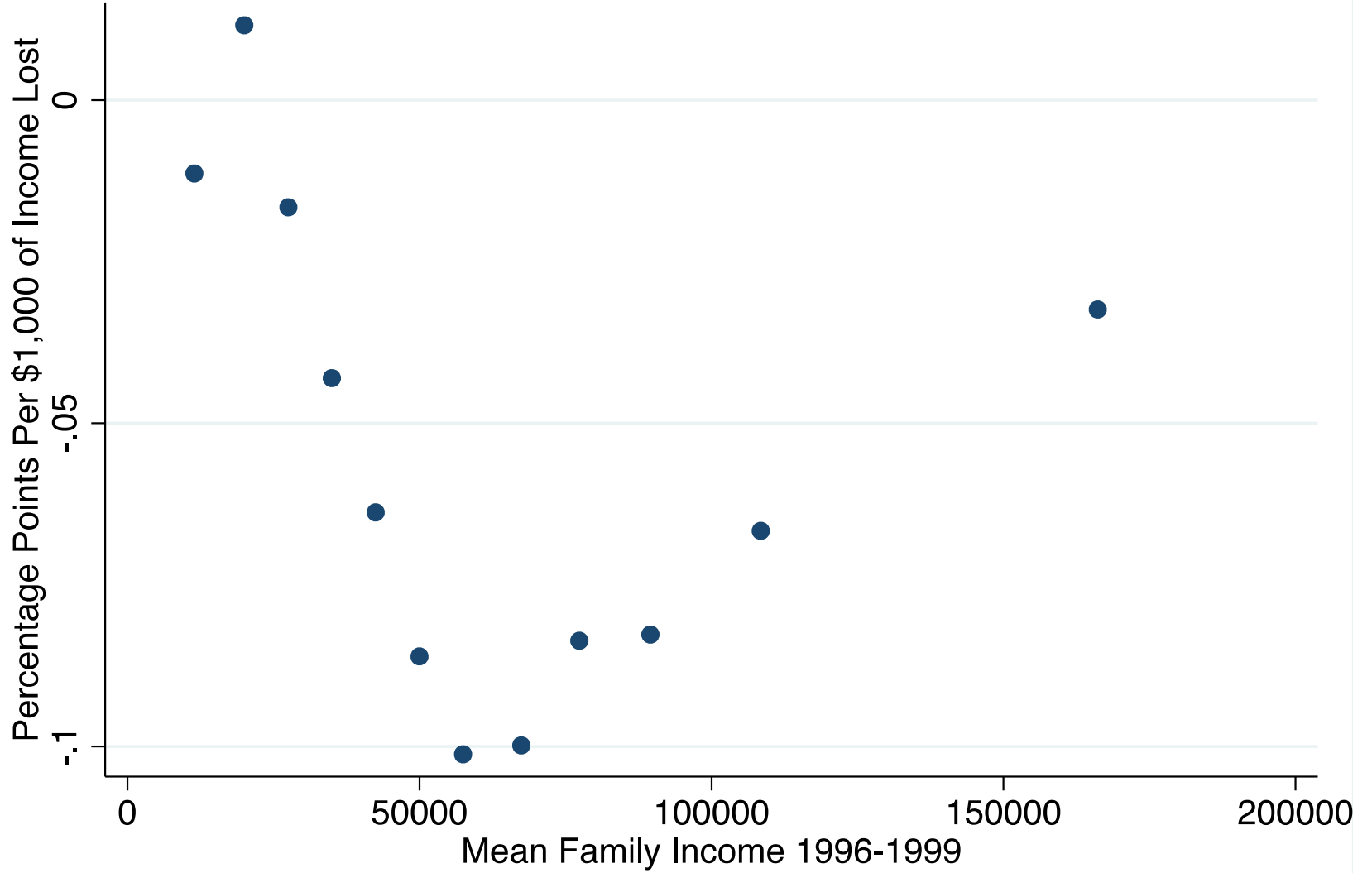
Effects of Layoffs on Children

- Closures make selection problem worse: Survivors are better controls for Layoffs than Non-Closures are for Closures
- Large β estimate driven entirely by selection: $\beta \approx \gamma$
- Noisy zero: consistent with estimate on full sample

Child Outcomes: Mechanisms

- Which families are most adversely affected by layoffs?
 - High-income or low-income?

(c) College Effects Per \$1,000 of Income Lost



Child Outcomes: Mechanisms

- U-shape: parental income affects children most at middle incomes
- Lower-income children don't rely on parents to finance college
 - More financial aid, loans, own earnings, own consumption
- For very high-income parents, college is small share of budget
 - College bears smaller share of absolute income losses
 - E.g. college spending a “necessity” not a “luxury”

Policies to Increase College Enrollment

- Financial aid likely ~**100-1,000 times** more effective per dollar
- Budget-neutral policy exercise:
 - Cut \$60b of income support for parents of older children
 - Add \$60b financial aid for children with below median income
 - New ~\$10k/year financial aid for children ages 18-22
 - Result: nearly eliminate college attainment gap

Conclusions

- Causal effects of layoffs during late childhood are small
 - Suggests 10-15% of corr(current income, college) is causal
- Marginal income least effective for *lowest*-income children
- Substantial selection into closing firms on unobservables correlated with child college enrollment
- Income transfers appear much less effective than financial aid

How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project STAR

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Diane Schanzenbach, Northwestern
Danny Yagan, Harvard

April 2011

Summary

- 11,571 students randomized across classrooms in 1985
- 95% linked to long-term outcomes in Databank
- Classrooms have large causal impacts on test scores
- Classrooms have large causal impacts on earnings
- Score gains translate into earnings gains, despite fade-out
- Classes appear to raise earnings through non-cognitive skills
- Subsequent work: teachers account for class effects
(Chetty, Friedman and Rockoff 2012)
- Teacher quality creates large economic value, and test scores can partly detect this value