Announcements

- Readings for this week:
  - Corak, M. (2013) "Income inequality, equality of opportunity, and intergenerational mobility." Journal of Economic Perspectives
  - Chetty et al. (2014) "Is the United States still a land of opportunity? Recent trends in intergenerational mobility" American Economic Review
- Let me know if you run into any problems working on the Du Bois project
- We'll go over referee report details on Wednesday

Residual Wage Inequality: Percentage Difference in Weekly Wages at 90th and 10th Percentiles, Holding Other Factors Constant, 1963–1994
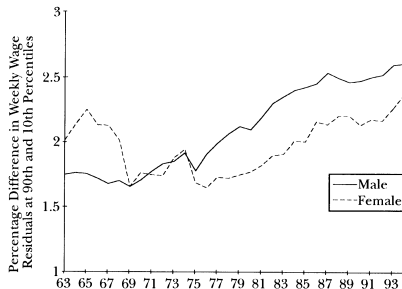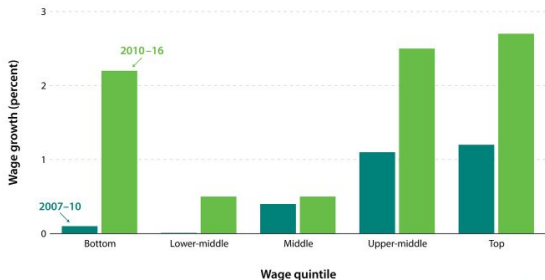

Source: (p90-p10)/p10 of the residuals from log earnings regression, estimated separately in each year from the March CPS

FIGURE 13.
Real Wage Growth by Wage Quintile, 2007–10 and 2010–16

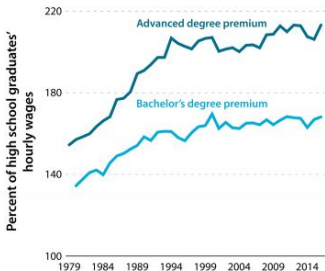Source: Current Population Survey, BLS (2007–16); authors' calculations.
Note: Wages are hourly and expressed in 2016 dollars, deflated using the CPI-U-RS. Sample is restricted to workers ages 25–54 and pooled within years. Growth rates are cumulative.
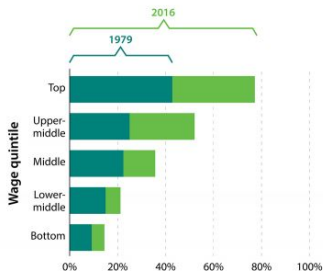
FIGURE 3A.

Bachelor's Degree and Advanced Degree Wage Premiums, 1979–2016

Source: Current Population Survey, BLS (1979–2016); authors' calculations.
Note: Sample restricted to workers ages 25–54. Wage premiums are the ratio of median wages for each educational attainment group with respect to median wages for workers with exactly a high school diploma.

FIGURE 3B.

Share of Income Quintile with a Four-Year Degree, 1979 and 2016

Source: Current Population Survey, BLS (1979–2016); authors' calculations.
Note: Wages are hourly. Sample is restricted to workers ages 25–54.

THE HAMILTON PROJECT
BROOKINGS

The Effect of Bill Gates

- In the previous figure, the bachelor's degree premium is defined as the ratio of college graduates' hourly wages to high school graduates' wages
- What impact does a Bill Gates have here?
  - He is super rich
  - He is also a college dropout
- First, note the fine print: "Wage premiums are the ratio of median wages for each educational attainment group with respect to median wages for workers with exactly a high school diploma."

The Effect of Bill Gates

- Let's make it a little more interesting
- According to Business Insider, Bill Gates makes $11.5 billion dollars a year.
- I've pulled CPS data for 2017 from IPUMS and calculated a bachelor degree wage premium similar to that in the previous figure
- Let's add in Bill Gates (and then many Bill Gates) to see what impact he might have

The Effect of Bill Gates

Bill Gates and the College Earnings Premium

Number of Bill Gates	Median earnings, non-college grad	Median earnings, college grad	College earnings premium using median	Mean earnings, non-college grad	Mean earnings, college grad	College earnings premium using mean
0	$22,000	$47,000	213.6	$28,163	$60,678	215.5
1	$22,000	$47,000	213.6	$28,337	$60,678	214.1
10	$22,000	$47,000	213.6	$29,906	$60,678	202.9
100	$22,000	$47,000	213.6	$45,593	$60,678	133.1
1000	$22,000	$47,000	213.6	$202,462	$60,678	30.0
10000	$22,000	$47,000	213.6	$1,770,918	$60,678	3.4
1000000	$22,880	$47,000	205.4	$172,000,000	$60,678	0.0

Bill Gates and the Residual

- Recall the 90-10 residual wage inequality figure
- Think about Bill Gates as a case study
- His grandfather was a national bank president, his father was a prominent lawyer and his mother was on the First Interstate BancSystem board of directors
- He went to a private preparatory school (Lakeside School) which had a Teletype Model 33 ASR terminal and a block of computer time on a General Electric computer
- All of that is going into the residual
- It all also starts to raise questions of mobility

Measuring Mobility

- Measuring mobility raises many of the same issues as measuring inequality along with a couple of new ones
- First, the question of the outcome of interest is largely the same
- We may care about a variety of outcomes:
  - Income
  - Wealth
  - Consumption
  - Occupation
  - Education
  - Health
  - Location

Measuring Mobility

- Beyond thinking of the outcome of interest, with mobility we need to think about the time frame of interest
- Do we care about intragenerational mobility? This could involve issues of how easy it is to switch careers or climb the corporate ladder
- Do we care more about intergenerational mobility, the extent to which your outcomes are dependent on those of your parents?
- Is it just parents we care about? What about grandparents, great grandparents, etc.?

Measuring Mobility

- In theory, there are many different dimensions of mobility we care about
- In practice, we often have to focus on those dimensions for which we have appropriate data
- Getting good data for mobility is much harder than getting good data for inequality
- Inequality can be measured with all sorts of datasets giving you a cross-section of the population
- Mobility requires observing individuals at multiple points in time or observing multiple generations

Measuring Mobility

- Typically, we need a *longitudinal* study
- A couple of common ones for the US
  - National Longitudinal Survey of Youth
  - Panel Study of Income Dynamics
- These types of surveys will contain multiple income observations for individuals and, if you're lucky, income for both children and their parents at comparable ages
- Observing both child and parent incomes leads us to one of the most common ways to measure mobility, the intergenerational income elasticity

Referee Report

- The first referee report is coming up, it is due February 22nd at 5pm
- For the first part of today's lecture we're going to talk about what a referee report is
- We'll discuss how the publication process works in economics, how I write referee reports, and how you should write your referee report (which is not the same as how I write mine)
- The key details are contained in a handout posted on our Blackboard site

From Idea to Publication

Here is the basic timeline of an economics paper:

1. Come up with the idea, gather data, run regressions, gather more data, run more regressions . . .
2. Write up a working paper version of the paper
3. Present at conferences, workshops and seminars, do more analysis and rewrites based on feedback
4. Polish the paper
5. Send the paper to the best journal you think it has a chance out
6. Hopefully receive referee reports and a chance to revise, if not return to step 4
7. Do everything the referees ask for and send it back to the journal
8. Repeat steps 5 and 6 until acceptance or rejection
9. If rejected return to step 4
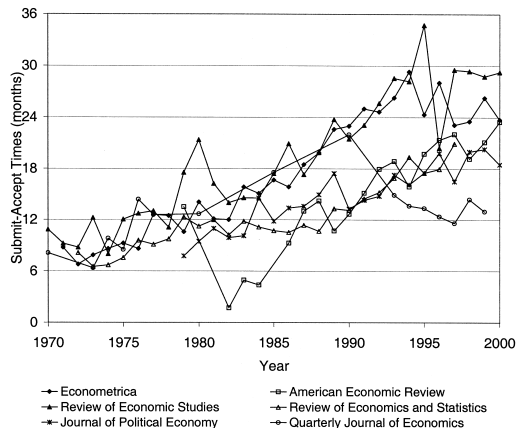
From Idea to Publication

FIG. 1.—Mean submit-accept times for papers in top general-interest journals

From Ellison (2002) "The Slowdown of the Economics Publishing Process" *Journal of Political Economy*

From Idea to Publication

TABLE 1
MEAN SUBMIT-ACCEPT TIMES AT VARIOUS JOURNALS

| | MEAN TOTAL REVIEW TIME IN YEAR | | | |
JOURNAL	1970	1980	1990	1999
	Top Five General-Interest Journals			
AER		13.5*	12.7	21.1
Econometrica	8.8†	14.0†	22.9†	26.3†
JPE		9.5	13.3	20.3
QJE	8.1	12.7	22.0	13.0
REStud	10.9†	21.5	21.2	28.8
	Other General-Interest Journals			
Canadian J. Econ.		11.3*		16.6
Econ. Inquiry		3.4*		13.0
Econ. J.		9.5*		18.2†
Internat. Econ. Rev.	7.8†	11.9†	15.9†	16.8†
REStat	8.1	11.4	13.1	18.8
	Economics Field Journals			
J. Appl. Econometrics			16.3†	21.5†
J. Comparative Econ.		10.3†	10.9†	10.1†
J. Development Econ.	5.6†‡	6.4†	12.6†	17.3†
J. Econometrics		9.7†	17.6†	25.5†
J. Econ. Theory	.6†	6.1†	17.0†	16.4†
J. Environmental Econ. and Management		5.5†	6.6†	13.1†
J. Internat. Econ.		8.7*		16.2
J. Law and Econ.		6.6*		14.8
J. Math. Econ.	2.2†‡	7.5†	17.5	8.5
J. Monetary Econ.			11.7†	16.0†
J. Public Econ.	2.6†§	12.5†	14.2†	9.9†
J. Urban Econ.		5.4†	10.3†	8.8†
Rand J. Econ.		7.2*	20.0	20.9
	Journals in Related Fields			
Accounting Rev.		10.1	20.7	14.5
J. Accounting and Econ.		11.4†	12.5†	11.5†
J. Finance		6.5*		18.6
J. Financial Econ.	2.6†‡	7.5†	12.4†	14.8†

* Date from Yohe (1980) pertain to 1979 and probably do not include the review time for the final resubmission.
† Does not include review time for final resubmission.
‡ Data for 1974.
§ Data for 1972.

TABLE 3
REVISIONS AT THE *QJE*

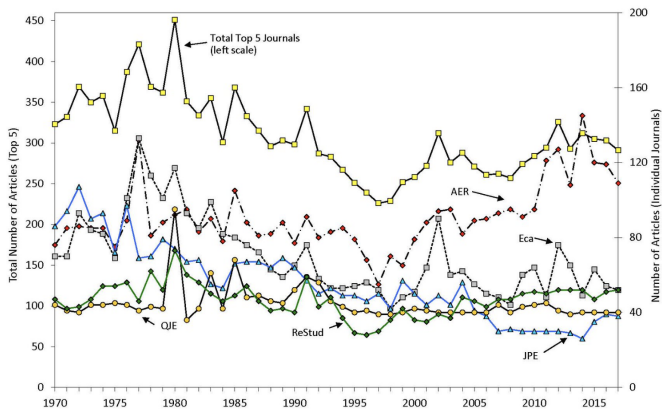|	YEAR OF PUBLICATION								
	1940	1950	1960	1970	1980	1985	1990	1995	1997
Mean submit-accept time (months)	3.7	3.8	3.6	8.1	12.7	17.6	22.0	13.4	11.6
Mean number of revisions	.6	.8	.6	1.2	1.4	1.5	1.7	2.2	2.0
Mean number of revisions before acceptance	.4	.1	.2	.5	.8	1.0	1.7	2.2	2.0
Mean author time for first preac-cept revision (months)	1.4	2.1	2.0	2.1	3.0	4.2	3.6	4.1	4.7
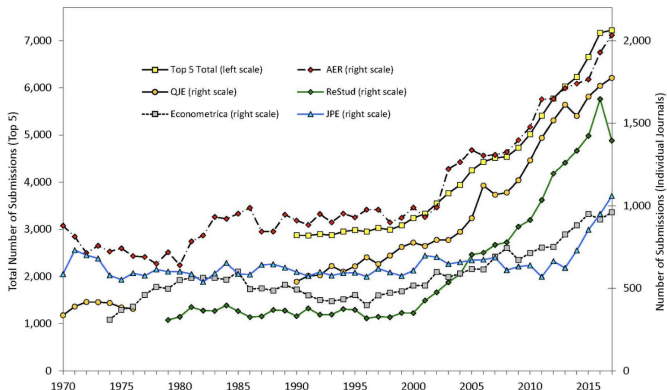
Notes: AER submissions are Nov. 1 - Oct. 31. Eca submissions are July 1 - June 31. REStud submissions are March 1 - Feb. 28. AER and Econometrica data found from annual editors' reports; QJE, REStud, and JPE data are obtained from editorial staff.

From Stefano DellaVigna (2018), UC Berkeley, AER Editor
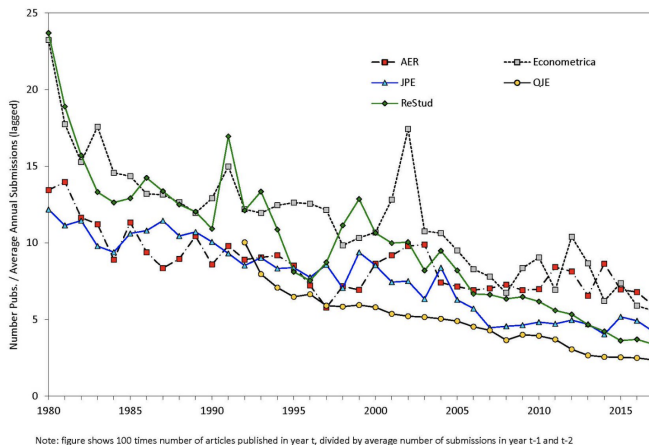
From Stefano DellaVigna (2018), UC Berkeley, AER Editor

Note: figure shows 100 times number of articles published in year t, divided by average number of submissions in year t-1 and t-2

From Stefano DellaVigna (2018), UC Berkeley, AER Editor

The Referee Process

- Peer review at economics journals is intended to accomplish two things:
  - Ensure the technical correctness of articles
  - Ensure that articles significantly add to our body of knowledge
- The referee assesses a paper both for correctness and for the novelty and size of its contribution
- The referee relays this assessment to the editor
- The referee also prepares a report for the authors, summarizing the paper and highlighting its strengths and weaknesses
- This report typically contains suggestions for improving the paper

Now let's look at some sample referee reports and talk about what I expect in your reports.

Your Referee Reports

- Due February 22, 5pm: Clark and Cummins (2015) "Intergenerational Wealth Mobility in England, 1858-2012"
- Due March 15, 5pm: Miller (2008) "Women's suffrage, political responsiveness, and child survival in American history"

The Great Gatsby Curve: More Inequality is Associated with Less Mobility across the Generations
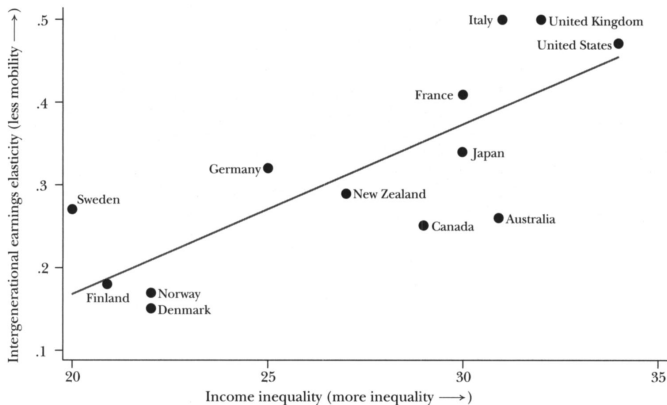
Measuring Mobility

- Consider the following regression, where y_c is the child's income and y_p is the parent's income:

$$ln(y_c) = \beta_0 + \beta_1 ln(y_p) + \varepsilon$$

- β_1 gives us our intergenerational income elasticity, a measure of how closely correlated parent and child incomes are
- Notice that if β_1 equals zero, parent's income has no effect on the expected value of a child's income
- As β_1 gets larger, the marginal effect of parent's income on the expected value of child's income gets larger
- So bigger values of β_1, the intergenerational income elasticity, suggest lower levels of mobility

Measuring Mobility

- Before discussing some other measures of mobility, it is worth taking a moment to think about a few measurement issues that are somewhat unique to mobility estimates
- We will do so by playing around with estimates of the intergenerational income elasticity
- Let's head over to Stata (notes on this exercise will be posted on Blackboard and is also available here)

The Great Gatsby Curve: More Inequality is Associated with Less Mobility across the Generations

TABLE 1—SAMPLE CHARACTERISTICS
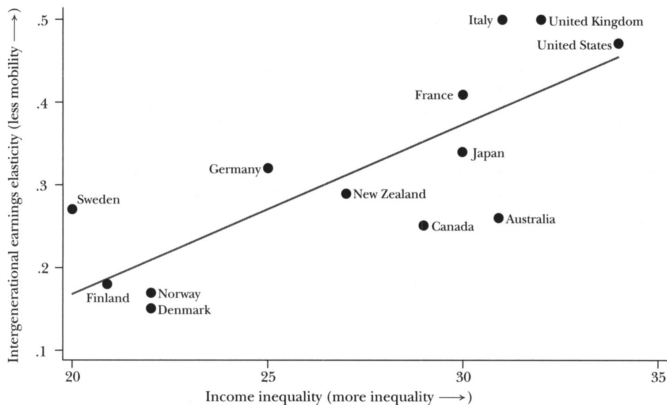
Variable	Mean	Standard deviation	Minimum	Maximum
Son's age in 1984	29.6	2.4	25.0	33.0
Son's earnings in 1984	22,479	15,019	19	147,656
Son's log earnings in 1984	9.75	0.94	2.94	11.90
Father's age in 1967	42.0	7.7	27.0	68.0
Father's earnings in 1967[a]	29,304	20,015	405	202,215
Father's log earnings in 1967[a]	10.10	0.69	6.00	12.22

[a]The sample statistics for father's 1967 earnings are in 1984 dollars and pertain to the sample of 322 fathers analyzed in the first row and column of Table 2.

Measuring Mobility

Table 2—OLS Estimates of ρ from Log Earnings Data

Year of father's log earnings	Single-year measure	Two-year average	Three-year average	Four-year average	Five-year average
1967	0.386 (0.079) [322]				
		0.425 (0.090) [313]			
1968	0.271 (0.074) [326]		0.408 (0.087) [309]		
		0.365 (0.081) [317]		0.413 (0.088) [301]	
1969	0.326 (0.073) [320]		0.369 (0.083) [309]		0.413 (0.093) [290]
		0.342 (0.078) [312]		0.357 (0.088) [298]	
1970	0.285 (0.073) [318]		0.336 (0.084) [301]		
		0.290 (0.082) [303]			
1971	0.247 (0.073) [307]				

Notes: Standard-error estimates are in parentheses, and sample sizes are in brackets.

FIGURE 4.—SIMULATION AND ACTUAL ESTIMATES FROM AVERAGING FATHERS' EARNINGS

Measuring Mobility
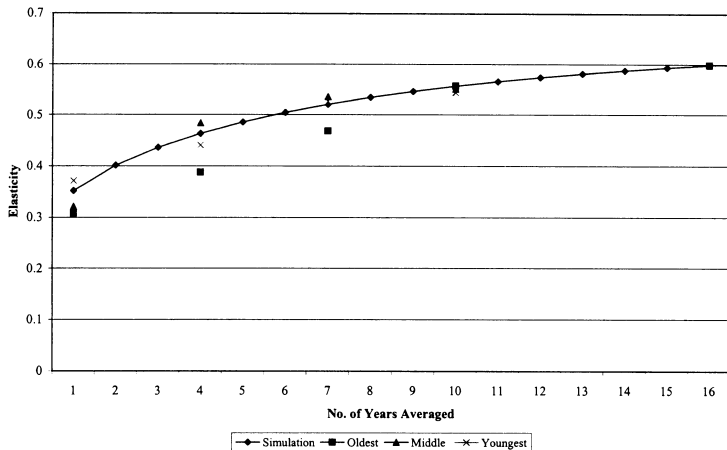
- The intergenerational income elasticity is by far the most prevalent mobility measure
- As we saw, it does have a few problems
- Chetty et al. point out a couple of additional problems:
  - In the raw data for the US, the relationship between parent and child log income is rather nonlinear
  - Using log income requires excluding individuals with zero income
- A solution to these two extra problems is to use the rank-rank correlation
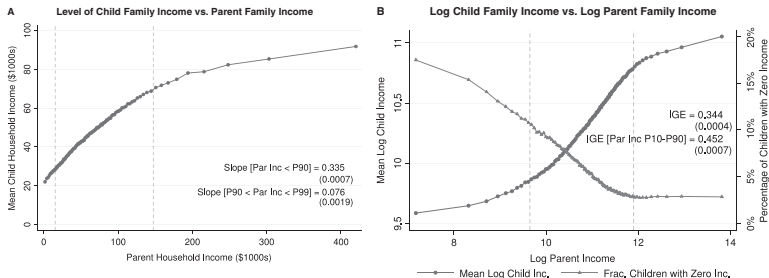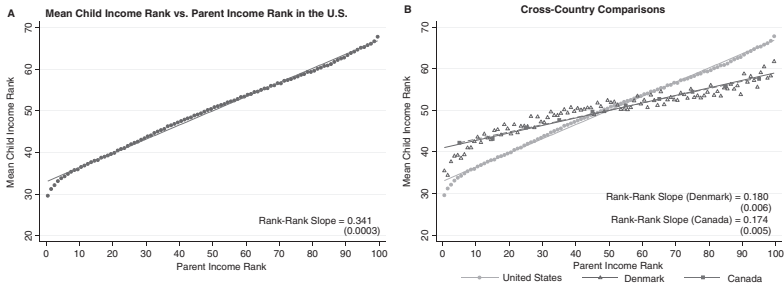
FIGURE II

Association between Children's and Parents' Percentile Ranks

Earnings Deciles of Sons Born to Top Decile Fathers: United States and Canada
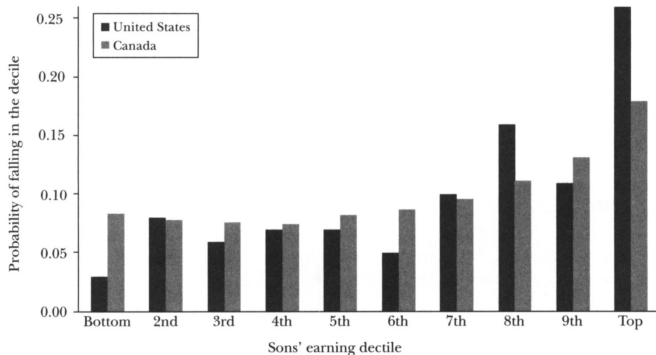
Source: Corak and Heisz (1999, table 6); Mazumder (2005, table 2.2).

Earnings Deciles of Sons Born to Bottom Decile Fathers: United States and Canada

Source: Corak and Heisz (1999, table 6); Mazumder (2005, table 2.2).

Measuring Mobility
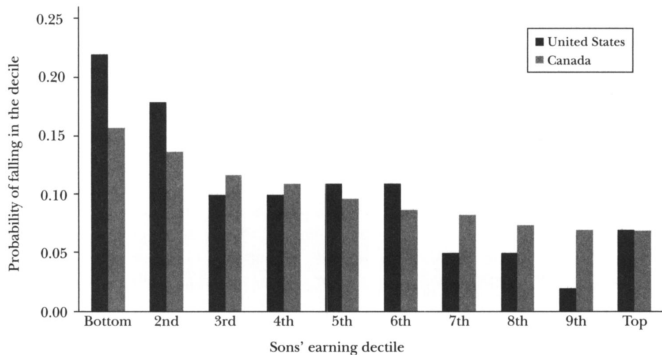
- So we've got the intergenerational income elasticity and the rank-rank coefficient
- Both of these tell us something interesting about relative mobility
- But neither really captures what the general public talks about when they talk mobility
- Mostly, people are thinking about the concept of *upward mobility*
- Chetty et al. look into this concept as well

Measuring Mobility

- Define $\overline{r_p}$ as the mean income rank for a child whose parents were in the p percentile of the income distribution

- Chetty et al. are going to estimate this value at the commuting zone level to construct two different measures of mobility:

- Absolute upward mobility:

$$\overline{r_{25}}$$

- Relative mobility:

$$\frac{\overline{r_{100}} - \overline{r_0}}{100}$$

Patterns of Mobility

A Absolute Upward Mobility: Mean Child Rank for Parents at 25th Percentile ($\bar{r}_{25}$) by CZ

Legend:
- 52.0 - 65.0
- 48.5 - 52.0
- 45.9 - 48.5
- 44.6 - 45.9
- 43.3 - 44.6
- 42.0 - 43.3
- 40.8 - 42.0
- 39.2 - 40.8
- 37.3 - 39.2
- 26.0 - 37.3
- Insufficient Data

Patterns of Mobility

Relative Mobility: Rank-Rank Slopes $\frac{\bar{r}_{100} - \bar{r}_0}{100}$ by CZ

B

Legend:
- 0.404 - 0.508
- 0.381 - 0.404
- 0.360 - 0.381
- 0.346 - 0.360
- 0.330 - 0.346
- 0.312 - 0.330
- 0.292 - 0.312
- 0.270 - 0.292
- 0.240 - 0.270
- 0.068 - 0.240
- Insufficient Data
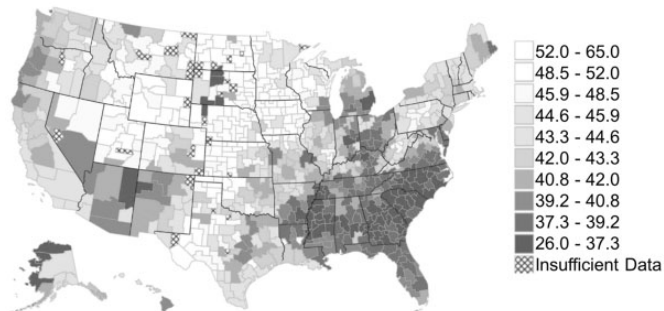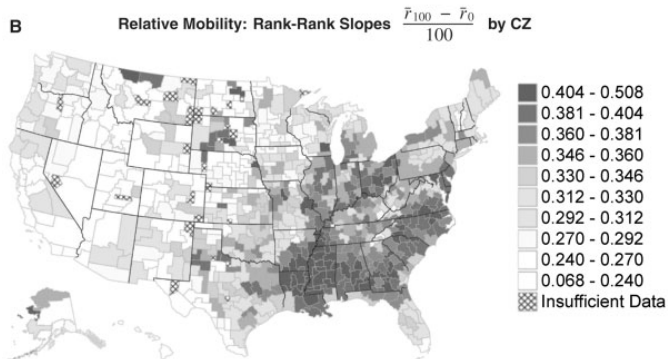
Higher Returns to Schooling are Associated with Lower Intergenerational Earnings Mobility
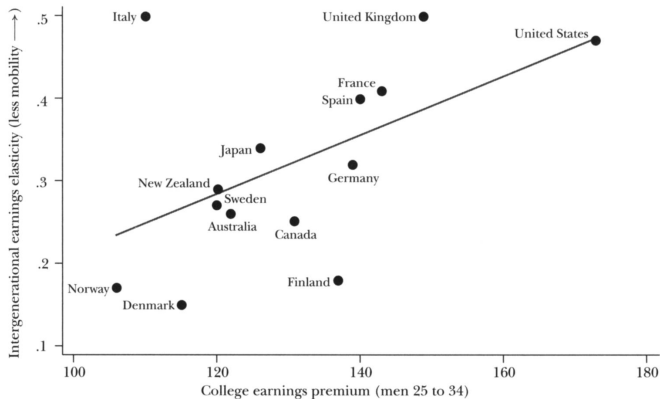
The Higher the Return to College, the Lower the Degree of Intergenerational Mobility: United States, 1940 to 2000

TABLE II
Key Statistics by College Tier

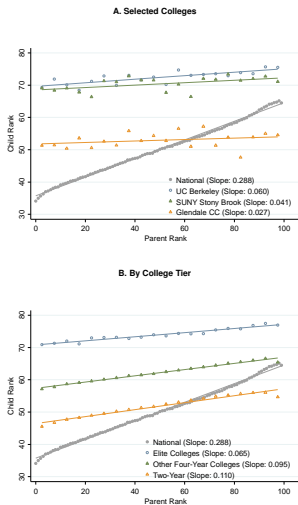| College Tier:	Share of Parents From: Bottom 20% (%)	Bottom 60% (%)	Top 1% (%)	Median Parent Income ($)	Median Child Earnings ($)	Within-College Rank-Rank Slope	Success Rate Top 20% (%)	Top 1% (%)	Mobility Rate Top 20% (%)	Top 1% (%)	Trend in Access Bottom 20% (pp)	Bottom 60% (pp)	Num. of Colleges (80-82 cohorts)	Num. of Students (80-82 cohorts)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Ivy Plus	3.8	18.2	14.5	171,000	82,500	0.086	58.0	12.78	2.18	0.48	0.65	0.86	12	52,724
Other elite colleges	4.3	21.4	10.0	141,900	65,400	0.060	50.6	5.80	2.20	0.25	-0.46	-3.11	62	183,973
Highly selective public	5.5	29.0	2.5	107,300	53,600	0.099	40.7	2.67	2.22	0.15	-0.05	-1.71	26	393,548
Highly selective private	4.1	23.9	7.0	124,700	56,500	0.057	42.3	3.33	1.73	0.14	-0.30	-4.89	66	134,098
Selective public	8.4	39.8	1.3	87,100	41,600	0.102	23.3	0.70	1.95	0.06	-0.07	-1.89	364	1,944,082
Selective private	7.1	37.4	2.4	90,700	44,400	0.080	27.0	1.00	1.91	0.07	0.13	-2.85	446	486,852
Nonsel. 4-year public	17.0	59.5	0.6	61,200	29,800	0.085	13.5	0.19	2.30	0.03	-0.06	0.94	72	257,854
Nonsel. 4-yr. priv. non-prof.	10.7	45.2	2.0	80,500	29,000	0.079	13.6	0.42	1.45	0.04	3.43	5.54	52	55,947
2-year non-profit	14.6	55.4	0.5	66,900	29,800	0.110	12.3	0.18	1.80	0.03	1.82	3.68	604	2,021,451
Four-year for-profit	21.1	66.8	0.5	51,500	28,900	0.095	12.2	0.15	2.57	0.03	4.70	8.85	60	126,025
Two-year for-profit	20.6	67.3	0.3	51,500	31,300	0.092	13.1	0.17	2.71	0.04	5.47	9.63	37	42,313
Less than two-year colleges	20.9	65.7	N/A	53,000	18,800	0.096	7.7	0.19	1.60	0.04	2.66	8.27	14	10,032
All colleges	10.8	45.0	1.7	80,500	38,100	0.090	18.0	0.59	1.95	0.06	2.15	3.65	1,815	5,708,899

Patterns of Mobility

TABLE III
Relationship Between Children's and Parents' Income Ranks Within Colleges

Sample:	All Children		Sons	Daughters	Full Sample		
Dependent Variable:	Individual Earnings Rank	Working	Individual Earnings Rank		HH Earn. Rank	Married	HH Inc. Rank
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. Full Population							
Parent Rank	0.288	0.191	0.334	0.240	0.357	0.372	0.365
	(0.002)	(0.005)	(0.000)	(0.000)	(0.009)	(0.005)	(0.008)
B. All College-Goers (with College FE)							
Parent Rank	0.100	0.030	0.118	0.064	0.142	0.175	0.149
	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)
C. Elite Colleges (with College FE)							
Parent Rank	0.065	0.023	0.090	0.036	0.107	0.151	0.131
	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.004)	(0.002)
D. Other 4-Year Colleges (with College FE)							
Parent Rank	0.095	0.024	0.114	0.064	0.139	0.170	0.147
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
E. 2-Year Colleges (with College FE)							
Parent Rank	0.110	0.042	0.125	0.067	0.149	0.185	0.154
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

FIGURE III: Relationship Between Children's and Parents' Ranks within Colleges

A. Selected Colleges

- National (Slope: 0.288)
- UC Berkeley (Slope: 0.060)
- SUNY Stony Brook (Slope: 0.041)
- Glendale CC (Slope: 0.027)

B. By College Tier

- National (Slope: 0.288)
- Elite Colleges (Slope: 0.065)
- Other Four-Year Colleges (Slope: 0.095)
- Two-Year (Slope: 0.110)

FIGURE V: Mobility Rates: Success Rates vs. Access by College
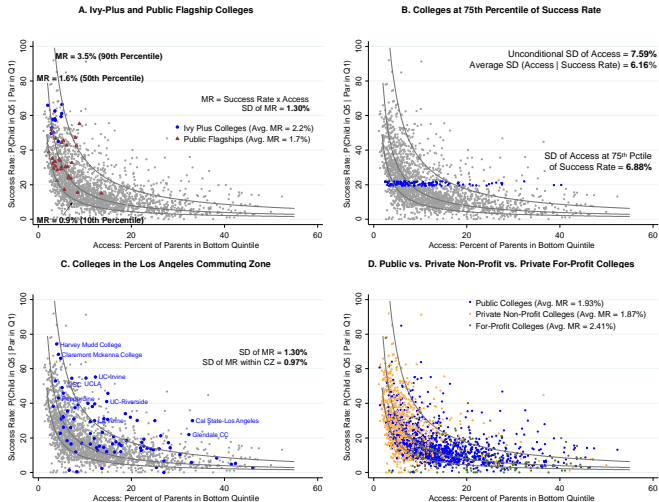
Patterns of Mobility

	William & Mary		UVA		VCU		Richard Bland	
	Other elite schools		Other elite schools				Two-year (public and	
Category	(public and private)		(public and private)		Selective public		private not-for-profit)	
	Parents	Students	Parents	Students	Parents	Students	Parents	Students
Median income	$176,400	$59,800	$155,500	$71,200	$97,200	$40,200	$69,300	$32,700
Average income								
percentile	84th	72nd	81st	76th	69th	61st	57th	54th
Share in top 1%	6.5%	6.3%	8.5%	10.0%	<1%	1.1%	<1%	<1%
Share in top 5%	35.0%	24.0%	32.0%	31.0%	8.9%	7.3%	1.1%	1.2%
Share in top 10%	56.0%	37.0%	49.0%	45.0%	23.0%	15.0%	5.9%	6.9%
Share in top 20%	73.0%	54.0%	67.0%	62.0%	43.0%	30.0%	20.0%	19.0%
Share in bottom 20%	2.0%	9.0%	2.8%	8.2%	5.4%	10.0%	9.7%	12.0%

You can check on other colleges here.

Money Matters: Higher-Income Families in the United States Have Higher Enrichment Expenditures on Their Children