Using Big Data to Solve Economic and Social Problems

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Part 1

Local Area Variation in Upward Mobility

The American Dream in Historical and International Perspective
Thus far, we have focused primarily on a snapshot of rates of upward mobility for children growing up in America today.

As we just discussed, a historical perspective is often useful in understanding determinants of current outcomes.

We cannot yet study trends in mobility by neighborhood, but we have made progress in understanding mobility over time at the national level.)
Historically, American Dream has been defined as the aspiration that children should have higher standards of living than their parents

- When asked to assess economic progress, children frequently compare their earnings to their parents [Goldthorpe 1987]

- Obama (2014): “People’s frustrations are partly rooted “in the fear that their kids won’t be better off than they were”

What fraction of children earn more than their parents, and how has this changed over time?

How many people are better off than their parents? Depends on how you cut the data.

Dimitrios Halikias and Richard V. Reeves · Wednesday, August 10, 2016
Key challenge: don’t have data linking parents to kids historically

Chetty et al. (2017) develop a method of estimating historical rates of mobility even in the absence of parent-child links

First describe basic results and then explain methodology
Percent of Children Earning More than their Parents
By Parent Income Percentile

Pct. of Children Earning more than their Parents

Parent Income Percentile

1940
Percent of Children Earning More than their Parents

By Parent Income Percentile

Pct. of Children Earning more than their Parents

Parent Income Percentile
Percent of Children Earning More than their Parents
By Parent Income Percentile
Percent of Children Earning More than their Parents
By Parent Income Percentile

Pct. of Children Earning more than their Parents

Parent Income Percentile
Percent of Children Earning More than Their Parents, by Birth Cohort

Pct. of Children Earning more than their Parents

Child's Birth Cohort
Methodology: Constructing Historical Estimates of Mobility

- We are able to get reliable estimates of mobility even though we do not have historical data linking kids to parents.

- Fundamental reason: almost all kids born in 1940 earned more than all parents → does not matter which kids are born to which parents.
Household Income Distributions of Parents and Children at Age 30

For Children in 1940 Birth Cohort

Income (Measured in Real 2014$)
Household Income Distributions of Parents and Children at Age 30

For Children in 1940 Birth Cohort

80th percentile of parents distribution

Parents

Children

Income (Measured in Real 2014$)
Household Income Distributions of Parents and Children at Age 30

For Children in 1940 Birth Cohort

- 14th percentile of children's distribution
- 80th percentile of parents distribution

Income (Measured in Real 2014$)
Methodology: Constructing Historical Estimates of Mobility

- We are able to get reliable estimates of mobility even though we do not have historical data linking kids to parents.

- Fundamental reason: almost all kids born in 1940 earned more than all parents → does not matter which kids are born to which parents.

- This is not the case for kids born in 1980s, but fortunately we have data linking kids to parents for that generation.
Household Income Distributions of Parents and Children at Age 30

For Children in 1980 Birth Cohort

- 74th percentile of children's distribution
- 80th percentile of parents distribution

Income (Measured in Real 2014$)
What Policies Can Increase Absolute Mobility?

- Two major changes in American economy since 1940: lower total economic growth rates and less equal distribution of growth
Growth in Real Mean Family Income by Income Quintile
1947 – 1973

Source: Goldin and Katz (2007)
Growth in Real Mean Family Income by Income Quintile

Source: Goldin and Katz (2007)
The poor and middle class used to see the largest income growth.

But now, the very affluent (the 99.999th percentile) see the largest income growth.

Note: Inflation-adjusted annual average growth using income after taxes, transfers and non-cash benefits.

Source: Piketty, Saez, and Zucman (2017); Leonhardt (2017)
WE ARE THE 99%
What Policies Can Revive Absolute Mobility?

- Two major changes in American economy since 1940: lower total economic growth rates and less equal distribution of growth.

- Consider two hypothetical scenarios for children born in 1980:
  
  1. **Higher growth**: growth rate since birth corresponding to 1940 cohort, with income distributed as it is today.

  2. **More broadly shared growth**: Same growth rates as today, but distributed across income groups as in 1940 cohort.
Percent of Children Earning More than Their Parents: Hypothetical Scenarios

Average: 91.5%
1940

Average: 50.0%
1980

Parent Income Percentile (conditional on positive income) vs. Pct. of Children Earning more than their Parents.
Percent of Children Earning More than Their Parents: Hypothetical Scenarios

- **1940**: Average: 91.5%
- **1980**: Average: 61.9%
- **Average**: 50.0%

Higher growth: 1940 GDP growth rate, 1980 shares
Percent of Children Earning More than Their Parents: Hypothetical Scenarios

Average: 91.5%
Average: 79.6%
Average: 61.9%
Average: 50.0%

1940 GDP growth, 1940 shares
1980 GDP growth, 1940 shares

More broadly shared growth: 1980 GDP growth, 1940 shares
Higher growth: 1940 GDP growth rate, 1980 shares

Parent Income Percentile (conditional on positive income)
Recap of last lecture: fraction of children earning more than their parents fell from 90% for those born in 1940 to 50% for those born in 1980

- Two-thirds of this decline was due to changes in the distribution of growth and one-third was due to slowing overall growth rate of American economy

- How does the American experience compare to other countries?

- Berman (2018) applies methodology of Chetty et al. (2017) in other countries to answer this question
United States

Abs. mobility, first cohort = 100%

Child's birth cohort

Source: Berman (2018)
Denmark

Abs. mobility, first cohort = 100%

Child's birth cohort

Baseline
Fixed inequality
Fixed income growth

Source: Berman (2018)
Source: Berman (2018)
Source: Berman (2018)
Main lesson: restoring the American Dream of high rates of upward mobility will require more broadly shared economic growth.

Need policies that will increase incomes in the bottom and middle of the income distribution.
Two broad approaches: redistribution (taxes/transfers, min wages) or increasing skills of lower-income Americans (“human capital”)

- Piketty and Saez: reductions in top income taxes and erosion of unions and minimum wages have led working-class Americans to fall behind

- Goldin and Katz: race between education and technology – need education to keep pace with technological change to increase wage rates
Restoring the American Dream

- We will discuss both tax policy and education in greater detail in later lectures.

- Important note: “education” is not just about technical skills.
  - Deming (2018) demonstrates this by investigating how wage rates vary with technical and social skills over time.
Growth in Real Hourly Wage Rates by Occupation Task Intensity
Cumulative Percent Change Between 1980 and 2012, Relative to 1980 Baseline

Source: Deming (2017)
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Policies to improve such skills could range from changes in education and training programs to housing voucher policies.
Is Increasing Social Mobility Desirable?

- Thus far we have assumed that our goal should be to increase mobility.

- But policies that increase mobility may not be desirable from an efficiency perspective:
  - Random college admissions would maximize social mobility.
  - But would violate principle of meritocracy and would likely reduce total economic output and growth.

- Next, assess tradeoff between mobility and growth, focusing on innovation as a driver of growth.