Improving Equality of Opportunity in America
New Evidence and Policy Lessons

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Is America the “Land of Opportunity”? 

- U.S. is traditionally hailed as the “land of opportunity”
  - Does it live up to this reputation?
  - How can we improve disadvantaged children’s chances of success?
New Evidence from Big Data

- Our research group is using “big data” to develop new answers to these questions

- Analyze anonymous records on the earnings of 40 million children and their parents
  - Study kids’ chances of moving up in the income distribution
Is America the Land of Opportunity?

- The answer depends on where you live
  - Some cities in America are lands of opportunity; others are lands of persistent inequality

- To start, let's compare two cities with vibrant economies:

  Salt Lake City, UT

  Charlotte, NC
The Geography of Upward Mobility in the United States
Probability of Reaching the Top Fifth Starting from the Bottom Fifth

Note: Lighter Color = More Upward Mobility
## Highest Upward Mobility in the 50 Largest Cities

<table>
<thead>
<tr>
<th>Rank</th>
<th>Metro Area</th>
<th>Odds of Reaching Top Fifth Starting from Bottom Fifth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>San Jose, CA</td>
<td>12.9%</td>
</tr>
<tr>
<td>2</td>
<td>San Francisco, CA</td>
<td>12.2%</td>
</tr>
<tr>
<td>3</td>
<td>Washington DC</td>
<td>11.0%</td>
</tr>
<tr>
<td>4</td>
<td>Seattle, WA</td>
<td>10.9%</td>
</tr>
<tr>
<td>5</td>
<td>Salt Lake City, UT</td>
<td>10.8%</td>
</tr>
<tr>
<td>6</td>
<td>New York, NY</td>
<td>10.5%</td>
</tr>
<tr>
<td>7</td>
<td>Boston, MA</td>
<td>10.5%</td>
</tr>
<tr>
<td>8</td>
<td>San Diego, CA</td>
<td>10.4%</td>
</tr>
<tr>
<td>9</td>
<td>Newark, NJ</td>
<td>10.2%</td>
</tr>
<tr>
<td>10</td>
<td>Manchester, NH</td>
<td>10.0%</td>
</tr>
</tbody>
</table>
## Lowest Upward Mobility in the 50 Largest Cities

<table>
<thead>
<tr>
<th>Rank</th>
<th>Metro Area</th>
<th>Odds of Reaching Top Fifth Starting from Bottom Fifth</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Cleveland, OH</td>
<td>5.1%</td>
</tr>
<tr>
<td>42</td>
<td>St. Louis, MO</td>
<td>5.1%</td>
</tr>
<tr>
<td>43</td>
<td>Raleigh, NC</td>
<td>5.0%</td>
</tr>
<tr>
<td>44</td>
<td>Jacksonville, FL</td>
<td>4.9%</td>
</tr>
<tr>
<td>45</td>
<td>Columbus, OH</td>
<td>4.9%</td>
</tr>
<tr>
<td>46</td>
<td>Indianapolis, IN</td>
<td>4.9%</td>
</tr>
<tr>
<td>47</td>
<td>Dayton, OH</td>
<td>4.9%</td>
</tr>
<tr>
<td>48</td>
<td>Atlanta, GA</td>
<td>4.5%</td>
</tr>
<tr>
<td>49</td>
<td>Milwaukee, WI</td>
<td>4.5%</td>
</tr>
<tr>
<td>50</td>
<td>Charlotte, NC</td>
<td>4.4%</td>
</tr>
</tbody>
</table>
What Drives the Differences in Upward Mobility Across Areas?

- Start by exploring racial differences
- Most obvious pattern from map: areas with a large African-American population have less upward mobility
Correlation = -0.585
(0.065)
Race and Upward Income Mobility

- But *white* Americans also have lower rates of upward mobility in areas with a large African-American share

- Stronger correlate is racial and income *segregation*
  - Segregation affects both low-income blacks and whites
Racial Segregation in Atlanta
Whites (blue), Blacks (green), Asians (red), Hispanics (orange)

Source: Cable (2013) based on Census 2010 data
Racial Segregation in Sacramento
Whites (blue), Blacks (green), Asians (red), Hispanics (orange)

Source: Cable (2013) based on Census 2010 data
Five Strongest Correlates of Upward Mobility

1. Segregation

2. Income Inequality (size of middle class)

3. School Quality

4. Social Capital

5. Family Structure
Policies to Improve Upward Mobility

- Five factors give us hints about where to look to improve social mobility
  - But they do not identify causal mechanisms or policy tools

- What specific policies can improve mobility?

- For illustration, focus on education policies and in particular on impacts of teachers
Using “Big Data” to Study Teachers’ Impacts

School district records
2.5 million children
18 million test scores

Tax records
Earnings, College Attendance, Teen Birth

Source: Chetty, Friedman, Rockoff 2012
Measuring Teacher Quality

One prominent measure of teacher quality: teacher *value-added*

How much does a teacher raise her/his students’ test scores on average?
A Quasi-Experiment: Entry of High Value-Added Teacher

Entry of Teacher with VA in top 5%

Average Test Score

School Year

'S93 '94 '95 '96 '97 '98

Scores in 4th Grade
Scores in 3rd Grade
Scores in 4th Grade

Scores in 3rd Grade

A Quasi-Experiment: Entry of Low Value-Added Teacher

Entry of Teacher with VA in bottom 5%
Effect of Teacher Quality on College Attendance Rates
Effect of Teacher Quality on Earnings

- 5th Percentile: $20.5K
- Median: $21.0K
- 95th Percentile: $21.5K
- 99th Percentile: $22.0K

The graph shows the relationship between teacher quality (value-added) percentile and earnings at age 28. There is a positive correlation, indicating that higher teacher quality is associated with higher earnings.
Effect on Teacher Quality on Teenage Birth Rates

Women with Teenage Births

Teacher Quality (Value-Added) Percentile

5th  Median  95th
The Value of Improving Teacher Quality
+$50,000 \text{ lifetime earnings per child} = $1.4 \text{ million per classroom of 28 students} = $250,000 \text{ in present value at 5\% int. rate}
"We know a good teacher can increase the lifetime income of a classroom by over $250,000.... Every person in this chamber can point to a teacher who changed the trajectory of their lives”


“A recent study by Harvard and Columbia economists found that students with effective teachers are less likely to become pregnant, more likely to go to college and more likely to get higher-paying jobs....Ineffective teachers are hurting our students’ futures – we can’t allow that.”

- Michael Bloomberg, *State of the City*, 2012
1. Teacher quality matters: attract top talent to teaching (e.g., Finland)

2. Standardized testing can provide valuable input into identifying good teachers and schools

3. Teacher quality matters in all grades, not just early ages

4. Teacher quality may be more important than class size
1. Place-based policies are valuable
   - Focus on improving Charlotte, Indianapolis, and Atlanta; not just national interventions
Broader Lessons for Economic and Social Policy

1. Place-based policies are valuable

2. Harnessing big data can provide a scientific evidence base for designing many policies
   - Social safety nets
3. Simply collecting and disseminating performance data can spark social change
   - Pension policies
   - Tax policies
An Opportunity and a Challenge

<table>
<thead>
<tr>
<th>Commuting Zone</th>
<th>Odds of Rising from Bottom to Top Fifth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dubuque, IA</td>
<td>17.9%</td>
</tr>
<tr>
<td>San Jose, CA</td>
<td>12.9%</td>
</tr>
<tr>
<td>Washington DC</td>
<td>10.5%</td>
</tr>
<tr>
<td>Chicago, IL</td>
<td>6.5%</td>
</tr>
<tr>
<td>Indianapolis, IN</td>
<td>4.8%</td>
</tr>
<tr>
<td>Memphis, TN</td>
<td>2.6%</td>
</tr>
</tbody>
</table>
Persistence of Income Across Generations

Trends in Intergenerational Mobility in the U.S.: 1971-1993 Birth Cohorts

Persistence of Income Across Generations

Child's Birth Cohort

0 0.2 0.4 0.6 0.8

Income Rank-Rank (Child Age 30; SOI Sample)
Forecast Based on Age 26 Income and College Attendance