Improving Equality of Opportunity in America
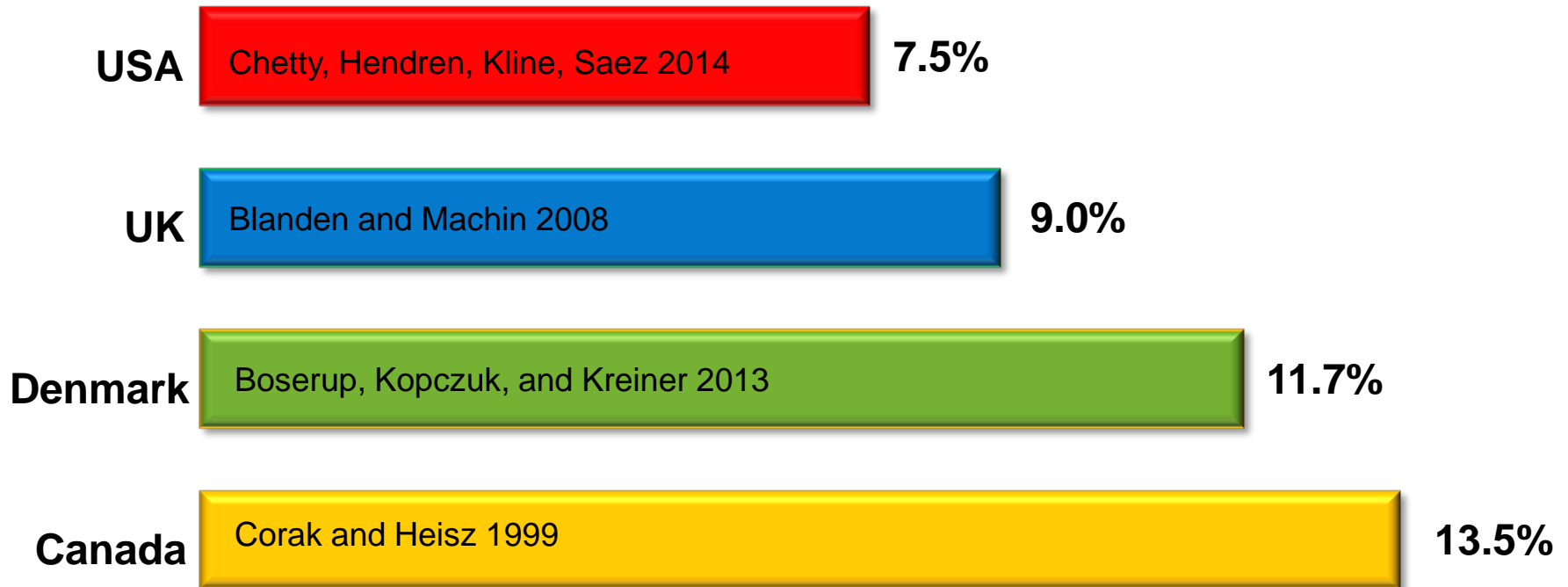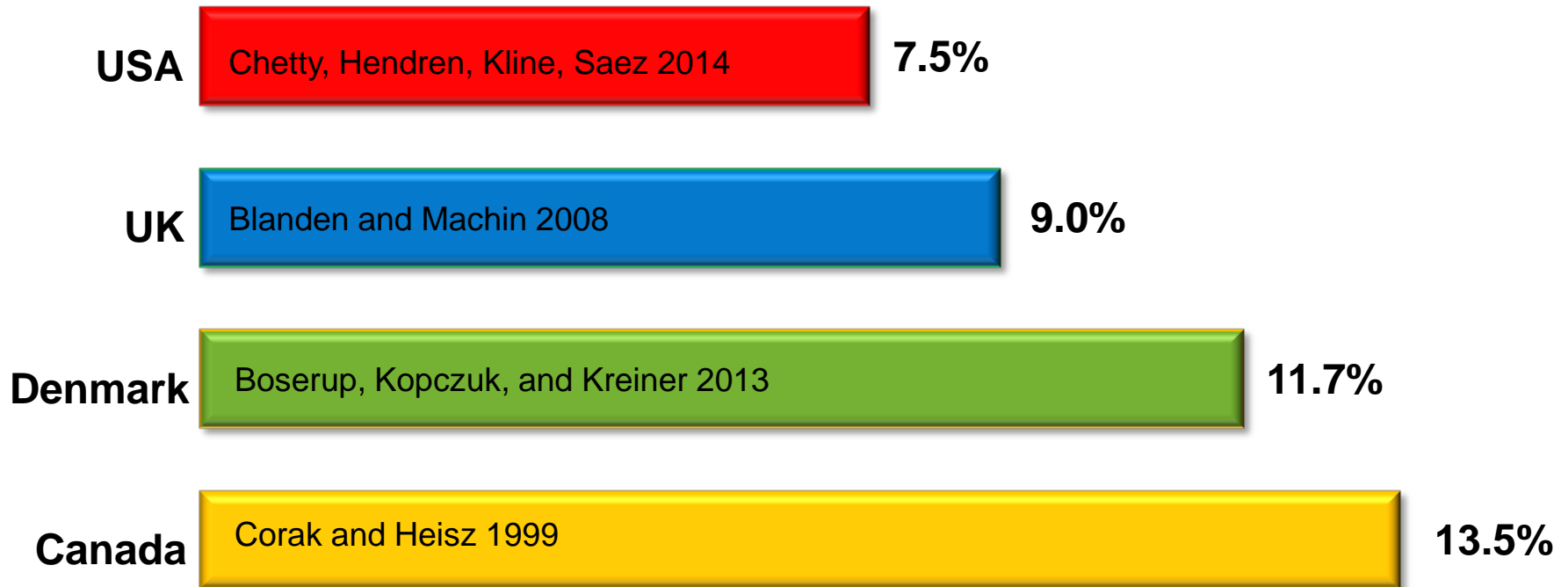## New Evidence and Policy Lessons

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Harvard University

The American Dream?

- Probability that a child born to parents in the bottom fifth of the income distribution reaches the top fifth:

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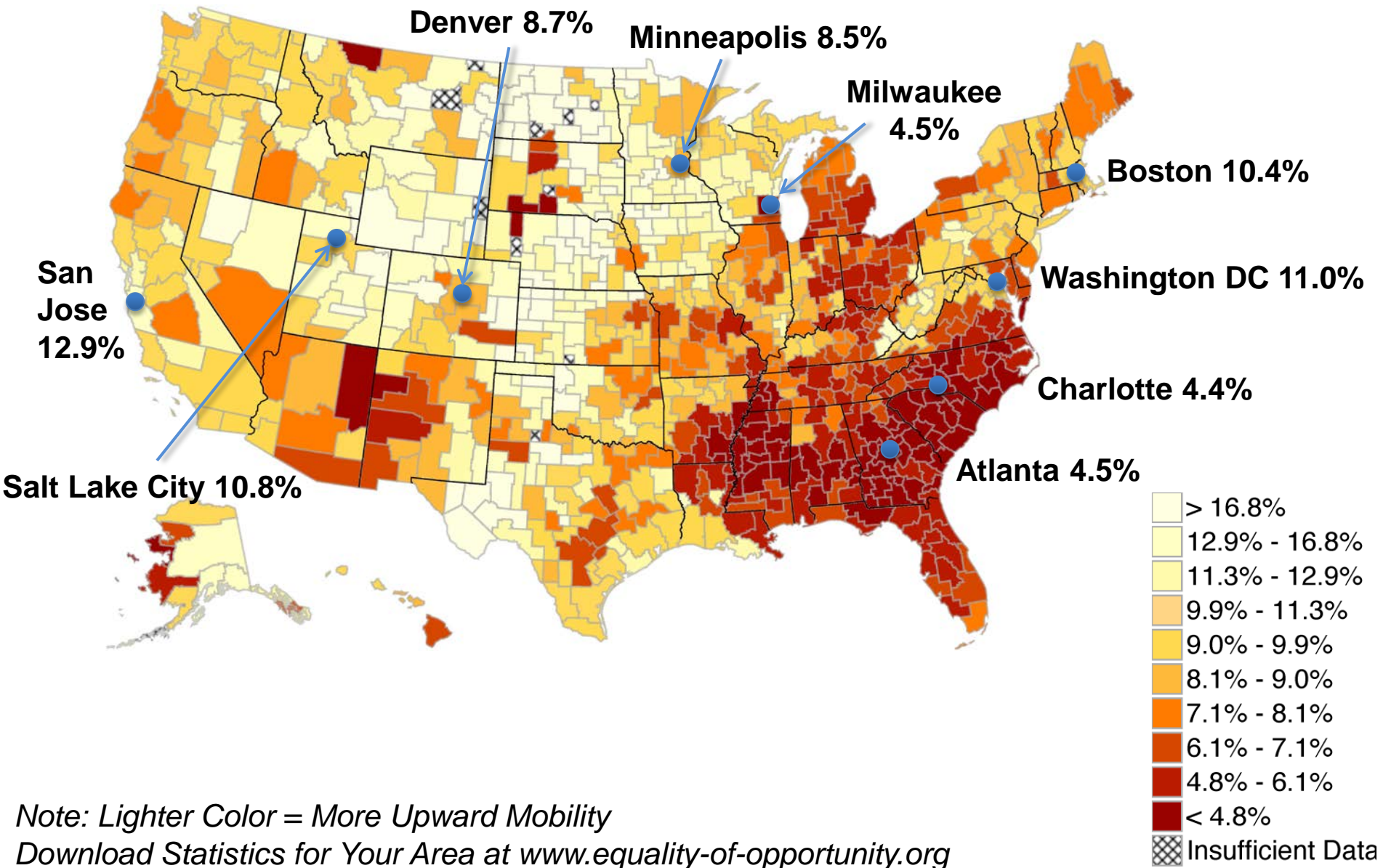
USA — Chetty, Hendren, Kline, Saez 2014 — **7.5%**

UK — Blanden and Machin 2008 — **9.0%**

Denmark — Boserup, Kopczuk, and Kreiner 2013 — **11.7%**

Canada — Corak and Heisz 1999 — **13.5%**

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→ Chances of achieving the "American Dream" are almost two times higher in Canada than in the U.S.

Differences in Opportunity Within the U.S.

- Differences across countries have been the focus of policy discussion

- But upward mobility varies even more *within* the U.S.

- We calculate upward mobility for every metro and rural area in the U.S.

  - Use anonymous earnings records on 40 million children born between 1980-1993

  - Classify children based on where they grew up, and track them no matter where they live as adults
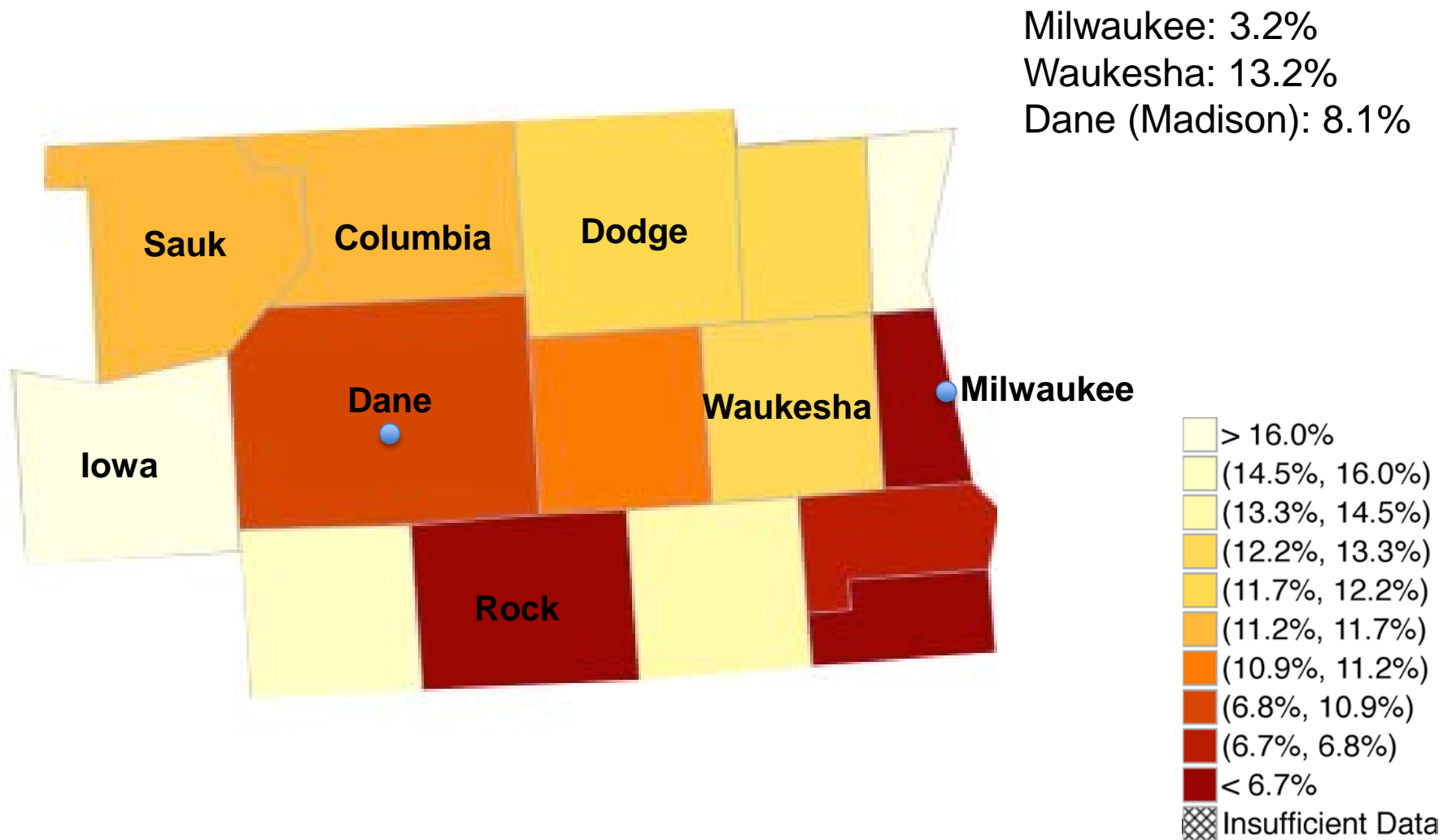
The Geography of Upward Mobility in the United States
Chances of Reaching the Top Fifth Starting from the Bottom Fifth by Metro Area

Denver 8.7%

Minneapolis 8.5%

Milwaukee 4.5%

Boston 10.4%

Washington DC 11.0%

Charlotte 4.4%

Atlanta 4.5%

San Jose 12.9%

Salt Lake City 10.8%

Legend:
- > 16.8%
- 12.9% - 16.8%
- 11.3% - 12.9%
- 9.9% - 11.3%
- 9.0% - 9.9%
- 8.1% - 9.0%
- 7.1% - 8.1%
- 6.1% - 7.1%
- 4.8% - 6.1%
- < 4.8%
- Insufficient Data

Note: Lighter Color = More Upward Mobility
Download Statistics for Your Area at www.equality-of-opportunity.org

The Geography of Upward Mobility in the Madison-Milwaukee Area
Odds of Reaching the Top Fifth Starting from the Bottom Fifth by County

Milwaukee: 3.2%
Waukesha: 13.2%
Dane (Madison): 8.1%

Sauk
Columbia
Dodge

Dane

Iowa

Waukesha

Milwaukee

Rock

> 16.0%
(14.5%, 16.0%)
(13.3%, 14.5%)
(12.2%, 13.3%)
(11.7%, 12.2%)
(11.2%, 11.7%)
(10.9%, 11.2%)
(6.8%, 10.9%)
(6.7%, 6.8%)
< 6.7%
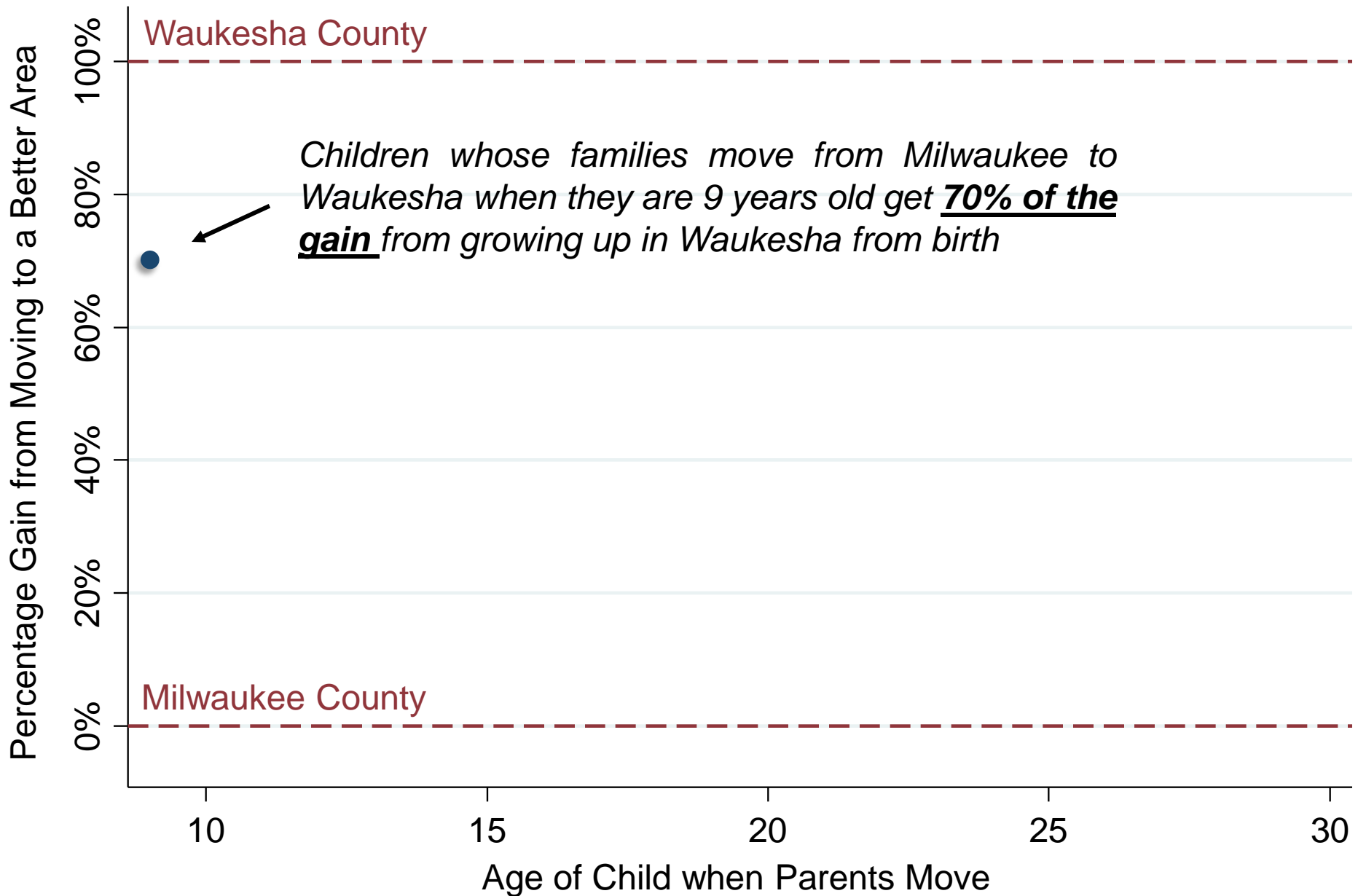Insufficient Data

Why Does Upward Mobility Differ Across Areas? The Importance of Childhood Environments

- Much of the variation in upward mobility across areas is due to *causal effects* of childhood environment

  - *Not* purely differences in the type of people living in each area

- Document this by studying families that move

  - Do children who move from Milwaukee to Waukesha do better as adults?

- Study 8 million families that move across counties in the U.S. with children of different ages
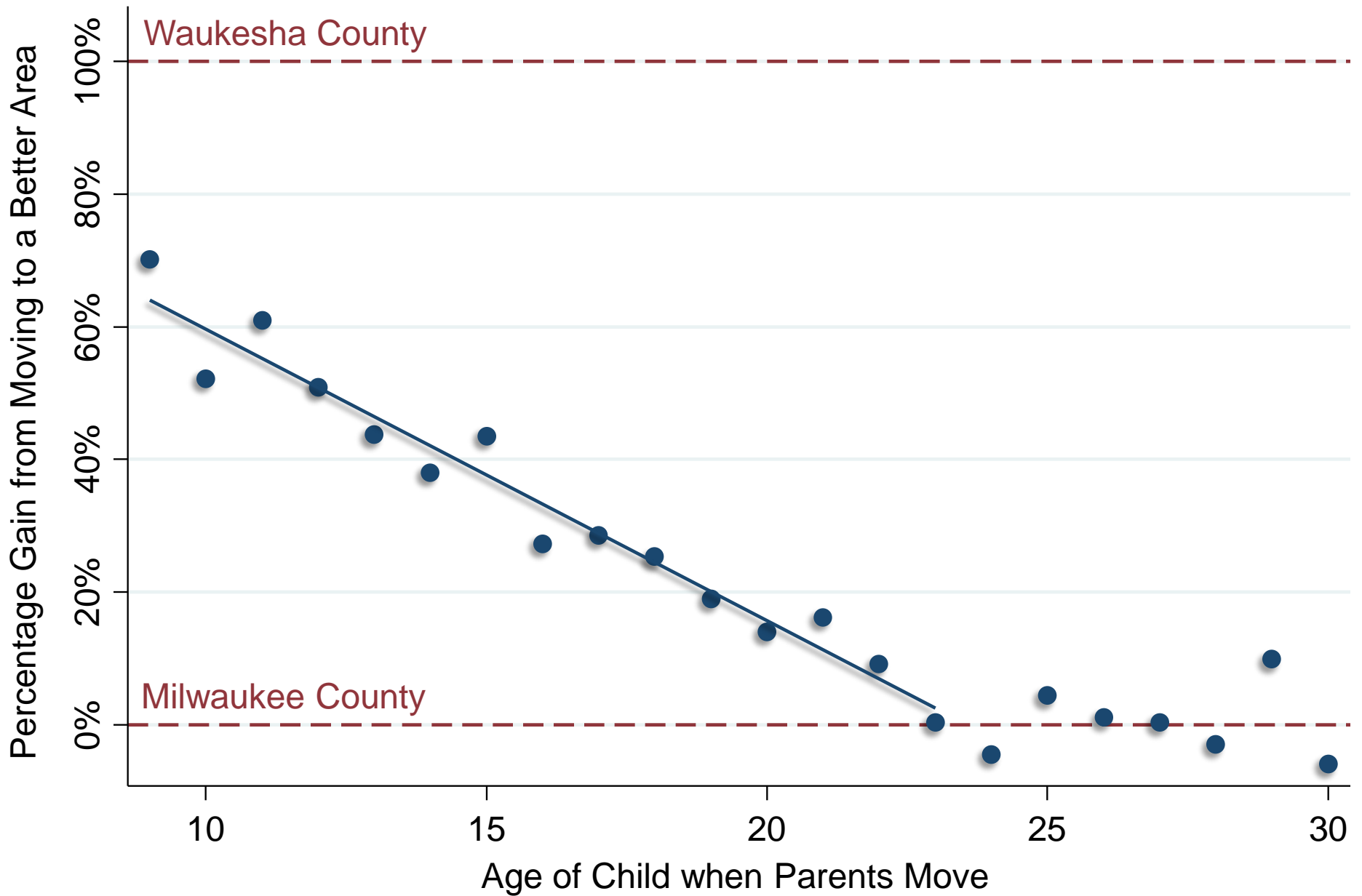
Source: Chetty and Hendren 2015

Effects of Moving to a Different Neighborhood on a Child's Income in Adulthood by Age at Move

Waukesha County

Milwaukee County

Percentage Gain from Moving to a Better Area

Age of Child when Parents Move

Effects of Moving to a Different Neighborhood
on a Child's Income in Adulthood by Age at Move

Waukesha County

Children whose families move from Milwaukee to Waukesha when they are 9 years old get ***70% of the gain*** from growing up in Waukesha from birth

Milwaukee County

Percentage Gain from Moving to a Better Area

Age of Child when Parents Move

Effects of Moving to a Different Neighborhood
on a Child's Income in Adulthood by Age at Move

Figure axes:
- Y-axis: Percentage Gain from Moving to a Better Area (0% to 100%)
- X-axis: Age of Child when Parents Move (10 to 30)
- Top dashed line: Waukesha County (100%)
- Bottom dashed line: Milwaukee County (0%)
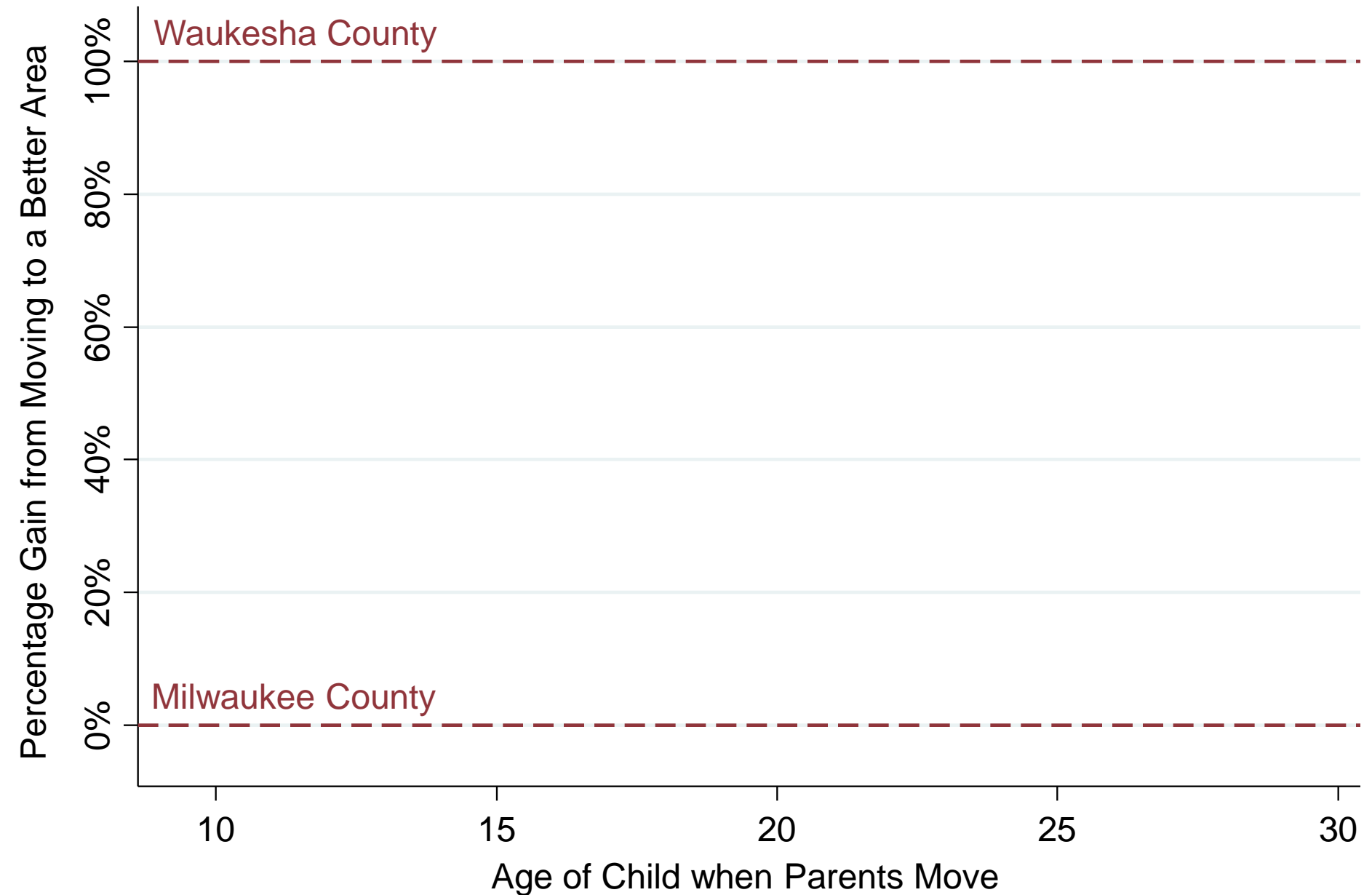
What are the Characteristics of High-Mobility Areas? Five Strongest Correlates of Upward Mobility

1. Segregation

   – Racial and income segregation associated with less mobility
   – Long commute times (sprawl) associated with less mobility
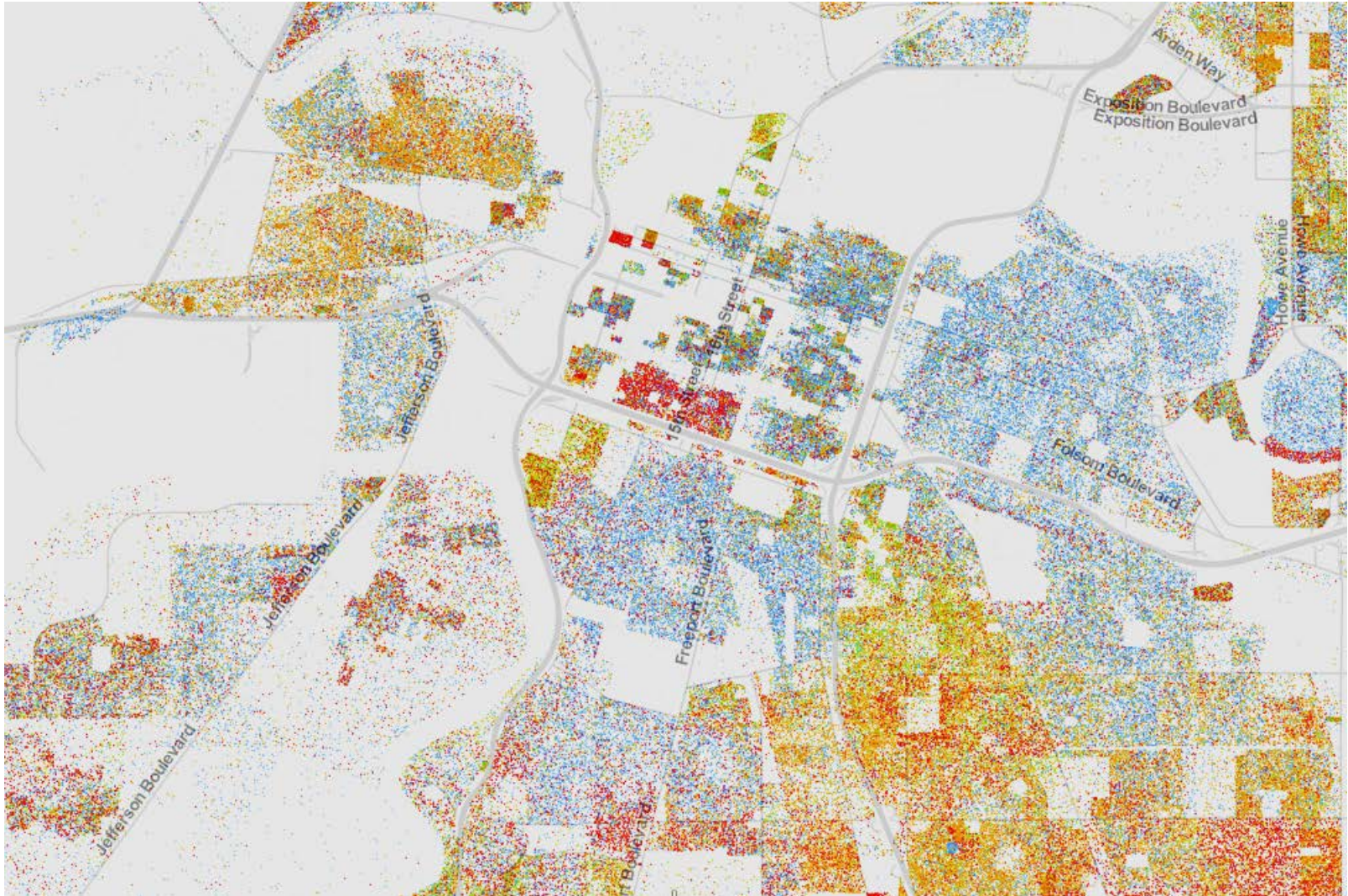
Racial Segregation in Milwaukee
Whites (blue), Blacks (green), Asians (red), Hispanics (orange)

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

   – Places with smaller middle class have much less mobility
   – Upper tail inequality (top 1%) not strongly related to mobility

Five Strongest Correlates of Upward Mobility

1. Segregation

2. Income Inequality

3. School Quality

   – Higher expenditure, smaller classes, higher test scores correlated with more mobility

Five Strongest Correlates of Upward Mobility

1. Segregation

2. Income Inequality

3. School Quality

4. Family Structure

   - Areas with more single parents have much lower mobility
   - Strong correlation even for kids whose *own* parents are married

Five Strongest Correlates of Upward Mobility

1. Segregation

2. Income Inequality

3. School Quality

4. Family Structure

5. Social Capital

   – "It takes a village to raise a child"
   – Putnam (1995): "Bowling Alone"

Policies to Improve Upward Mobility

- What policy changes can improve mobility?

- Focus here on two types of policies suggested by correlations:

  - Reducing segregation: affordable housing policies
  - Improving education: teacher effectiveness

- Other factors (e.g. family stability, social capital) may be important, but they are harder to change

Affordable Housing and Integration of Neighborhoods

- One way to increase integration: give low income families subsidized housing vouchers to move to better areas

- HUD Moving to Opportunity Experiment: gave such vouchers using a randomized lottery

  – 4,600 families in Boston, New York, LA, Chicago, and Baltimore in mid 1990's

Source: Chetty, Hendren, and Katz 2015

Common MTO Residential Locations in New York

Moving to Opportunity Experiment

- Children who moved to low-poverty areas when young (e.g., below age 13) do much better as adults:

  - 30% higher earnings = $100,000 gain over life in present value
  - 27% more likely to attend college
  - 30% less likely to become single parents

- But moving had little effect on the outcomes of children who were already teenagers

- Moving also had no effect on parents' earnings

- Reinforces conclusion that *childhood exposure* is a key determinant of upward mobility

Housing Policy Implications

- Moving to a mixed-income neighborhood improves outcomes for low-income children

- Mixed-income neighborhoods produce, if anything, slightly *better* outcomes for the rich

    - Integration could help the poor without hurting the rich

- Subsidized housing vouchers and changes in urban planning could increase upward mobility, but there are limits to scalability

    - Moving *everyone* in Harlem to Bronx is unlikely to help

    - Ultimately need policies that improve existing neighborhoods rather than simply moving people around

Education Policy: 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

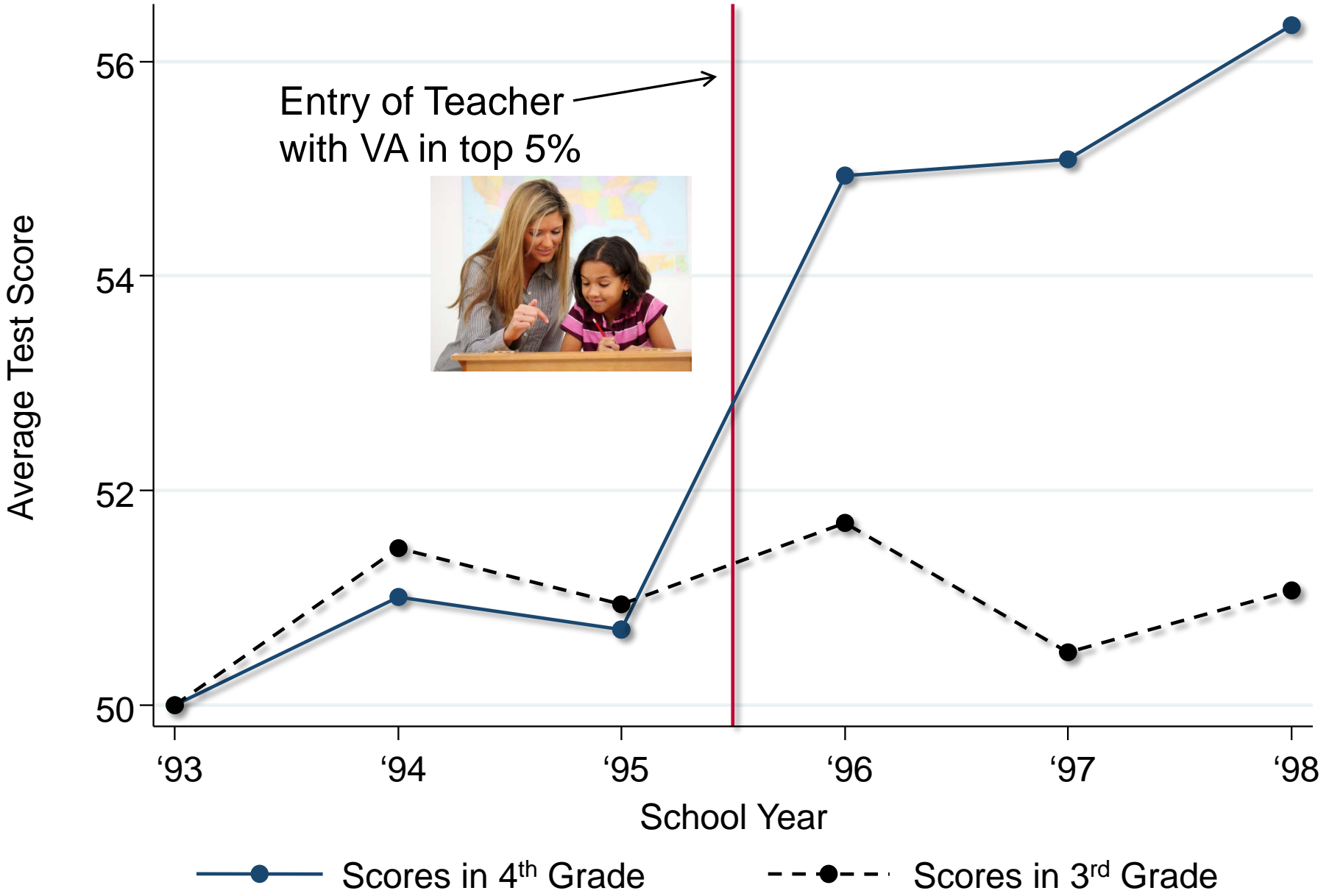*Source: Chetty, Friedman, Rockoff 2014a,b*

Measuring Teacher Quality: Test-Score Based Metrics
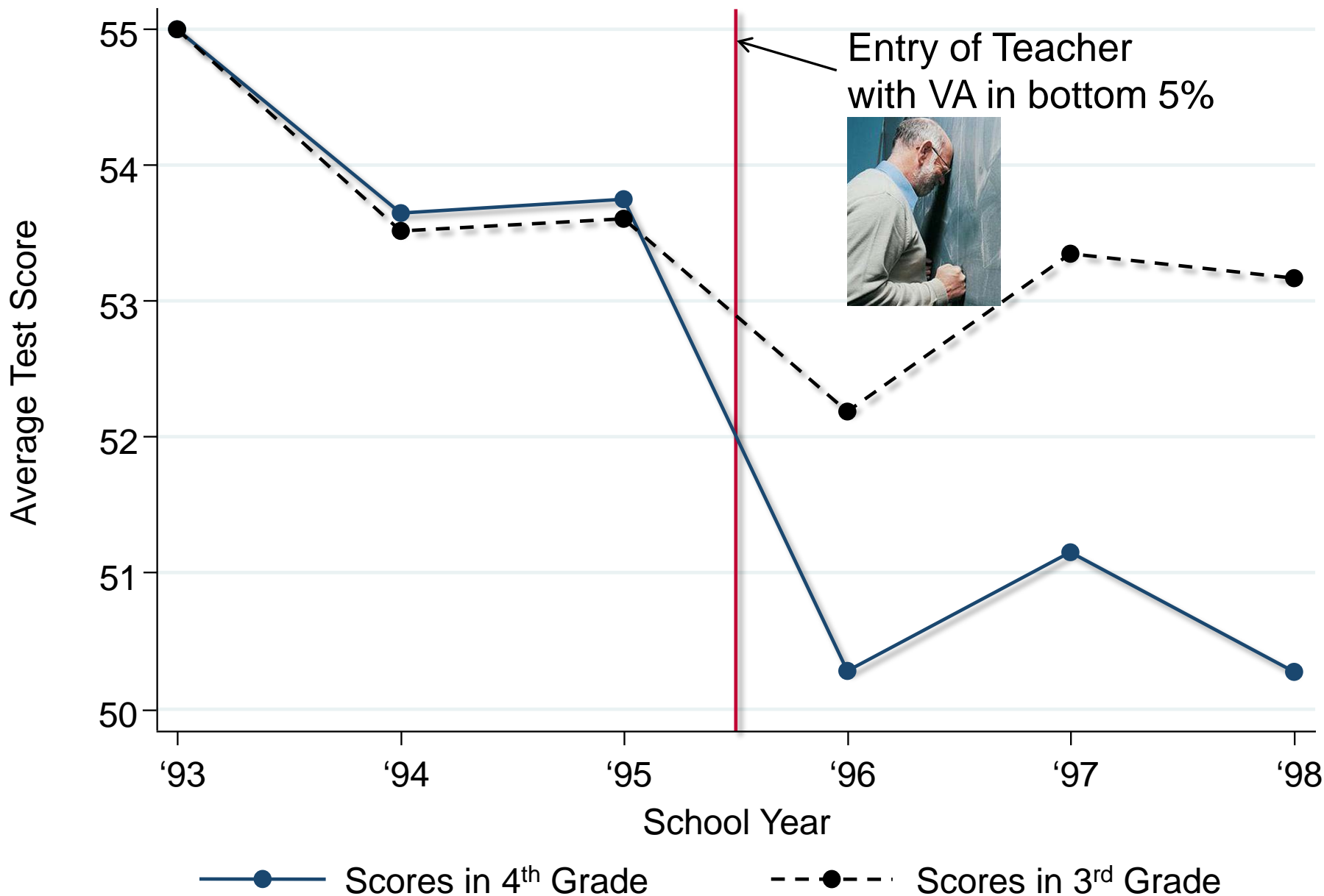
One prominent measure of teacher quality: teacher *value-added*

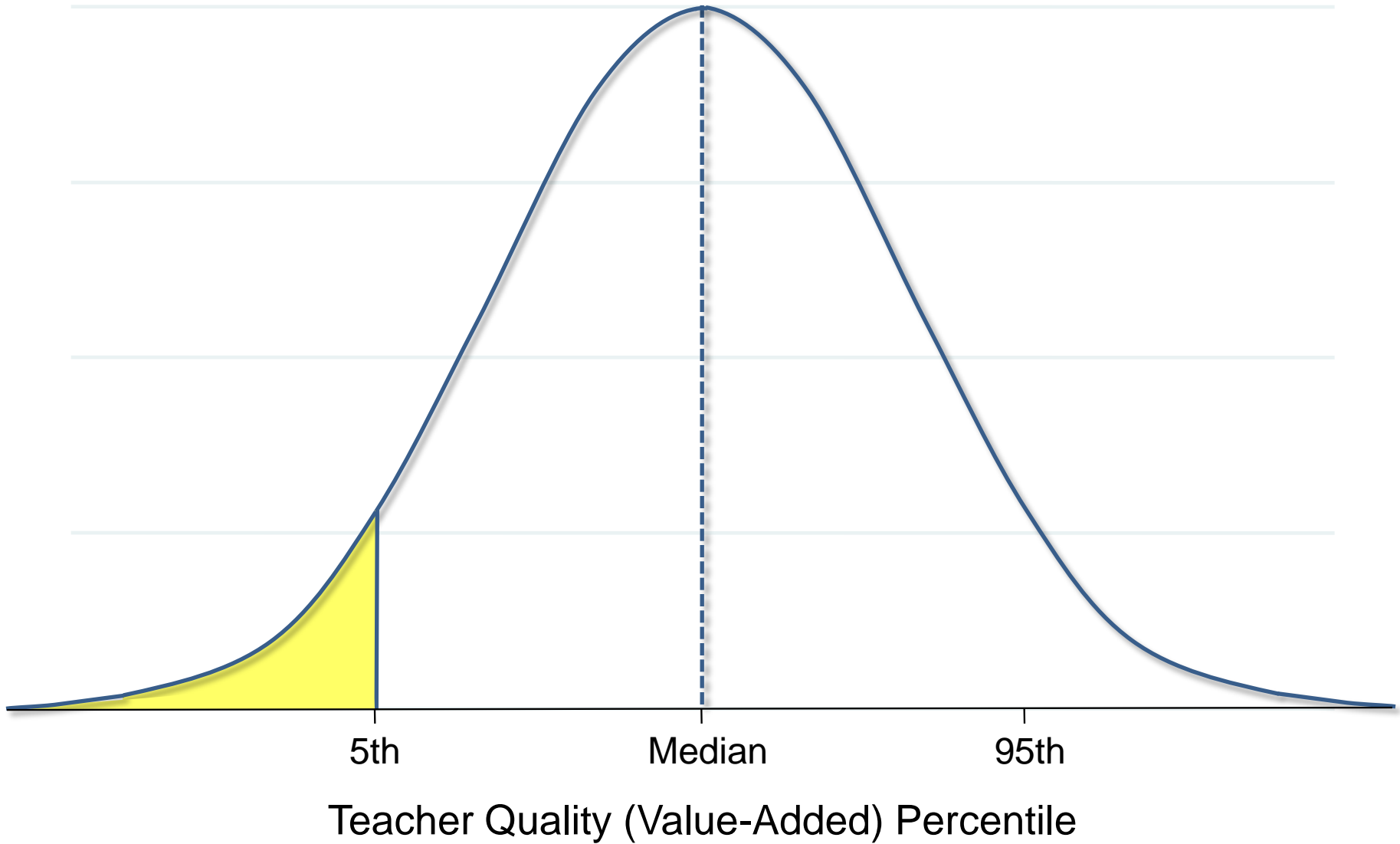How much does a teacher raise her/his students' test scores on average?

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

Entry of Teacher
with VA in top 5%

Average Test Score

56

54

52

50

'93   '94   '95   '96   '97   '98

School Year

—●— 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%

Average Test Score

School Year

'93   '94   '95   '96   '97   '98

———●——— Scores in 4th Grade   - - -●- - - Scores in 3rd Grade

The Value of Improving Teacher Quality

5th   Median   95th

Teacher Quality (Value-Added) Percentile

The Value of Improving Teacher Quality

+$50,000 lifetime earnings per child
= $1.4 million per classroom of 28 students
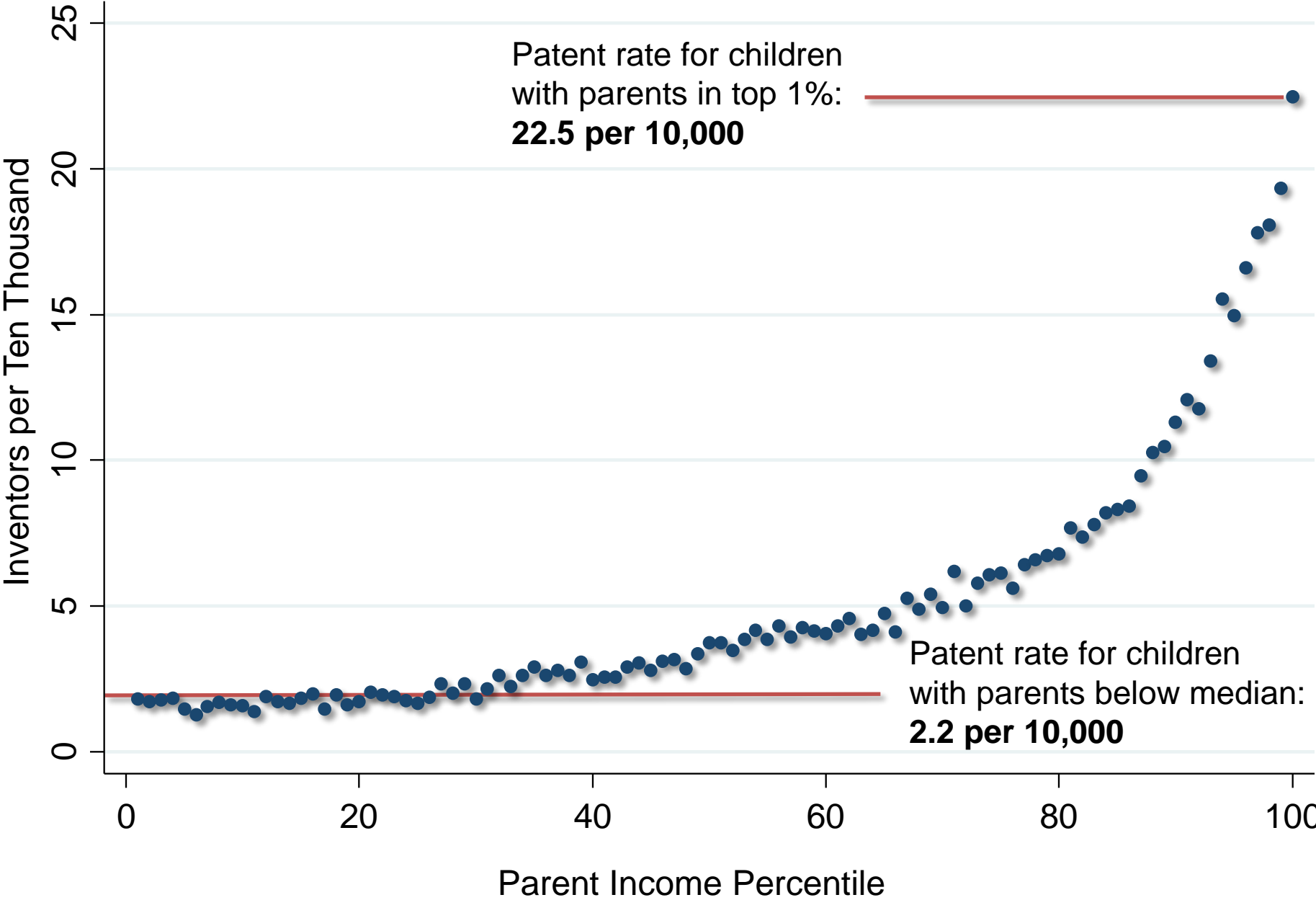= $250,000 in present value at 5% int. rate

5th   Median   95th

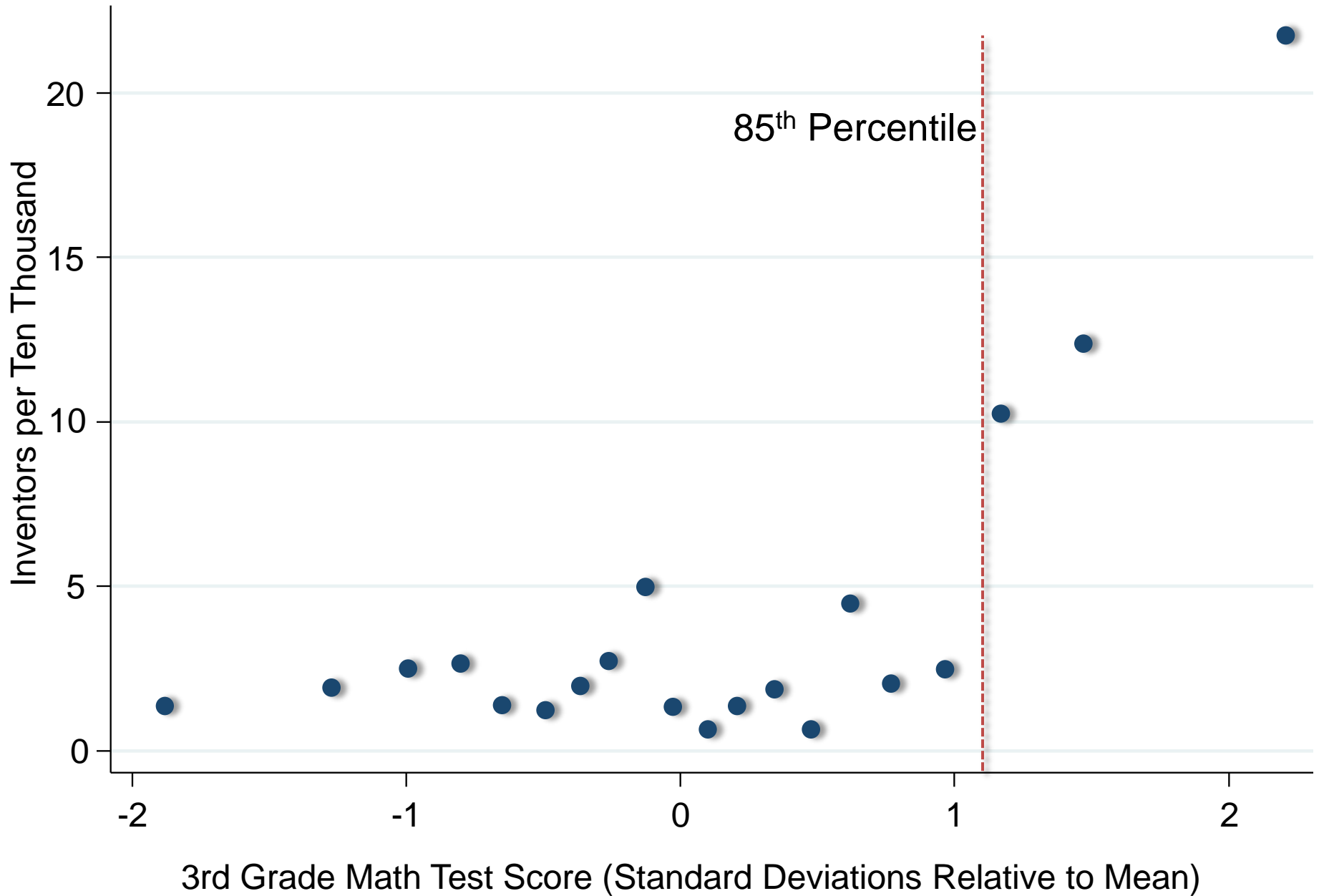Teacher Quality (Value-Added) Percentile

Equality of Opportunity and Economic Growth

- Traditional argument for greater social mobility is based on principles of justice

- But improving opportunities for upward mobility can also increase size of the economic pie

  – One child's success need not come at another's expense

- To illustrate, focus on innovation
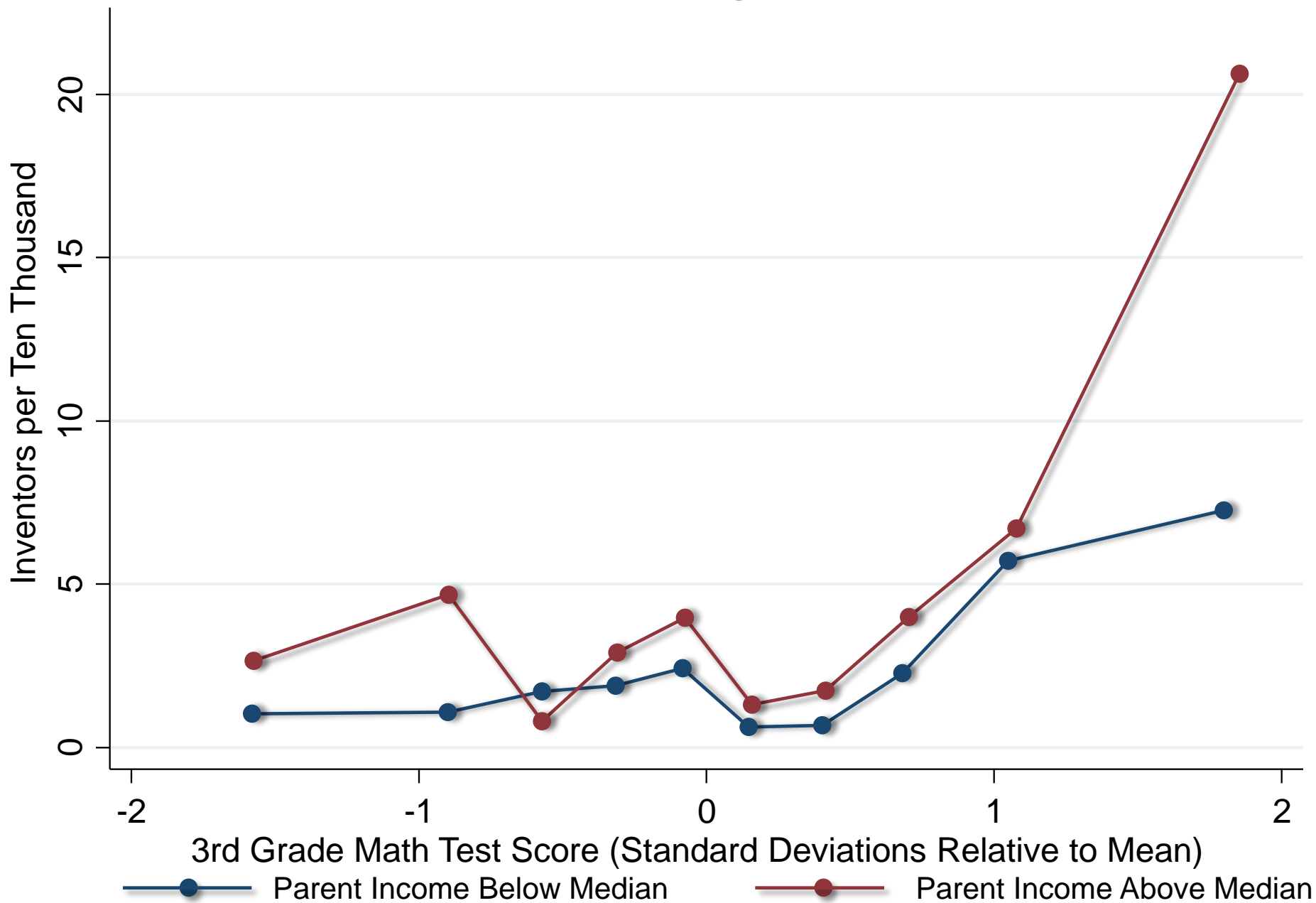
  – Study the lives of 750,000 patent holders in the U.S.

Source: Bell, Chetty, Jaravel, Petkova, van Reenen 2015

Patent Rates vs. Parent Income Percentile

Patent rate for children
with parents in top 1%:
22.5 per 10,000

Patent rate for children
with parents below median:
2.2 per 10,000

Inventors per Ten Thousand

Parent Income Percentile

Patent Rates vs. 3rd Grade Test Scores

85th Percentile

Inventors per Ten Thousand

3rd Grade Math Test Score (Standard Deviations Relative to Mean)

Patent Rates vs. 3ʳᵈ Grade Test Scores for Children with Low vs. High Income Parents

**Patent Rates vs. 3rd Grade Test Scores
for Children with Low vs. High Income Parents**

High-ability children much more
likely to become inventors if they
are from high-income families

Inventors per Ten Thousand

3rd Grade Math Test Score (Standard Deviations Relative to Mean)

Parent Income Below Median   Parent Income Above Median
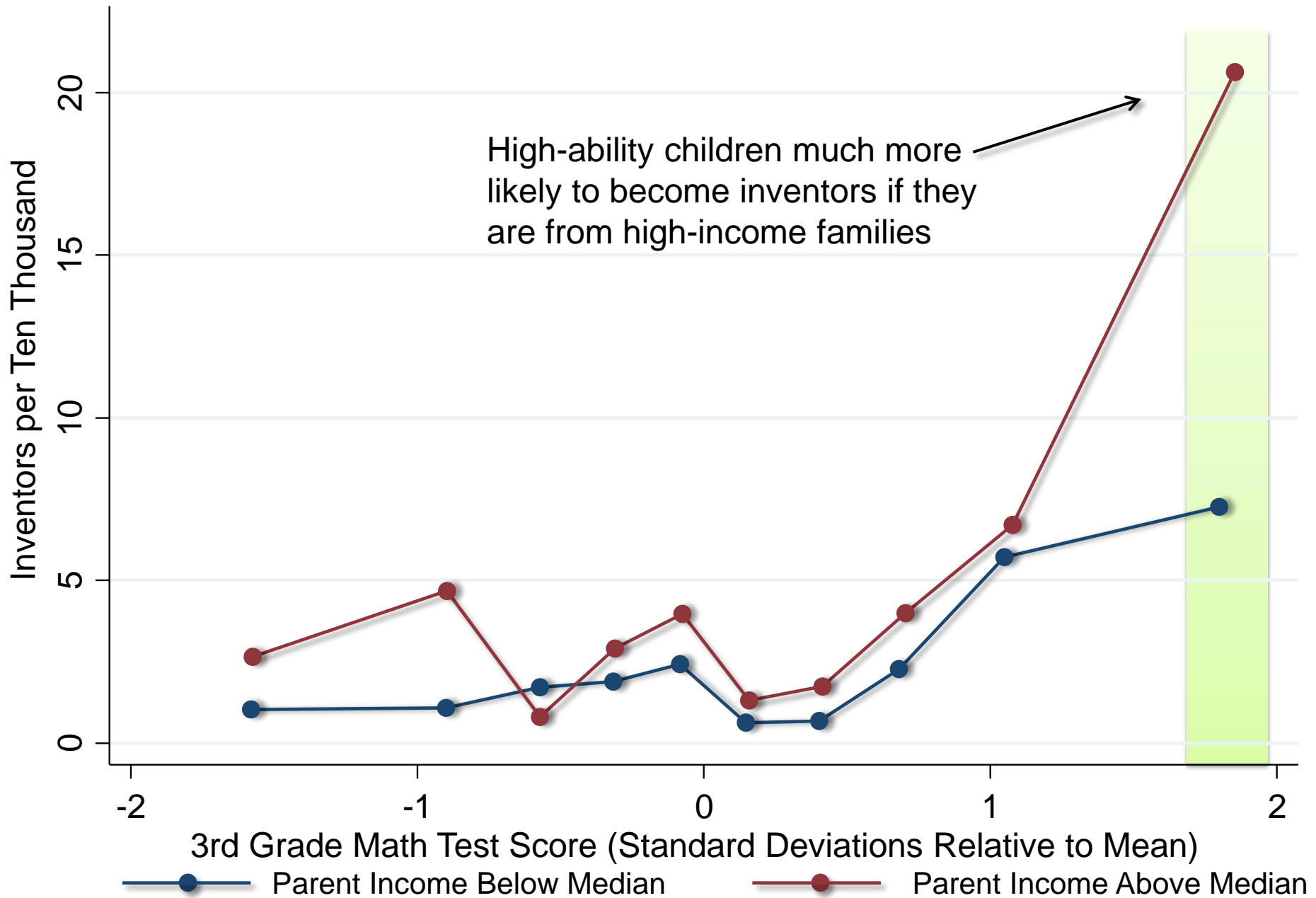
Upward Mobility and Economic Growth

- Gaps in test scores grow rapidly as children grow older

  - Low income children fall further behind over time

- Suggests that innovation gap may again be driven by differences in childhood environments

- Improving equality of opportunity could ultimately benefit everyone, not just low-income families

Policy Lessons

1. Tackle social mobility at a local, not just national level

   ▪ Focus on specific cities such as Milwaukee

Policy Lessons

1. Tackle social mobility at a local, not just national level

2. Improve childhood environment at all ages (not just earliest ages)

   - Short term: housing vouchers to help families move

   - Long term: improve neighborhoods (e.g., schools)

Policy Lessons

1. Tackle social mobility at a local, not just national level

2. Improve childhood environment at all ages (not just earliest ages)

3. Harness big data to evaluate other policies scientifically and measure local progress and performance

   - Identify which neighborhoods are in greatest need of improvement and which policies work

Download County-Level Data on Social Mobility in the U.S.
www.equality-of-opportunity.org/data

| HOME | EXECUTIVE SUMMARY | PAPER | CITY RANKINGS | INTERACTIVE MAP | DOWNLOAD DATA | FAQ'S | RESEARCH TEAM | IN THE NEWS |

Downloadable Data on Intergenerational Mobility

Data Description		
Preferred Mobility Measures by Commuting Zone	Stata file	Excel file
Online Data Table 1: National 100 by 100 Transition Matrix	Stata file	Excel file
Online Data Table 2: Marginal Income Distributions by Centile	Stata file	Excel file
Online Data Table 3: Intergenerational Mobility Statistics and Selected Covariates by County	Stata file	Excel file
Online Data Table 4: Intergenerational Mobility Statistics by Metropolitan Statistical Area	Stata file	Excel file
Online Data Table 5: Intergenerational Mobility Statistics by Commuting Zone	Stata file	Excel file
Online Data Table 6: Quintile-Quintile Transition Matrices by Commuting Zone	Stata file	Excel file
Online Data Table 7: Income Distributions by Commuting Zone	Stata file	Excel file
Online Data Table 8: Commuting Zone Characteristics	Stata file	Excel file
Online Data Table 9: Commuting Zone Characteristics Definitions and Data Sources		Excel file
Geographic Crosswalks (Tolbert and Sizer 1996, Autor and Dorn 2009 & 2013)	Zip file	
Replication Stata Code and Datasets	Zip file	
Downloadable Map of Absolute Upward Mobility		

Version 2.0, released January 17, 2014. For Version 1.0 (released on July 22, 2013), click here. Version 2.0 reports statistics using the 1980-82 birth cohorts (rather than 1980-81) and includes new data such as mobility statistics by county and MSA, new CZ-level covariates, and marginal income distributions for parents and children.

For more information on the data, please email info@equality-of-opportunity.org

An Opportunity and a Challenge

Metro Area	Odds of Rising from Bottom to Top Fifth
Dubuque, IA	17.9%
San Jose, CA	12.9%
Washington DC	10.5%
U.S. Average	7.5%
Chicago, IL	6.5%
Milwaukee, WI	4.5%

Milwaukee vs. Waukesha County Ranking on Five Predictors of Upward Mobility