

Econ 133 – Global Inequality and Growth

Labor income inequality: the role of market forces

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Roadmap

- The role of education in the labor market
- Why has the “skill premium” increased?
- Policy implications

1 The role of education in the labor market

What determines labor income inequality?

- In a perfectly competitive economy, wage = marginal productivity
- Marginal productivity depends on (i) tasks that workers can accomplish (which in turn depend on education, know-how, experience, etc.: “skills” in short); (ii) relative scarcity
- So depends on skill demand (what employers require) & supply

1.1 The skill premium

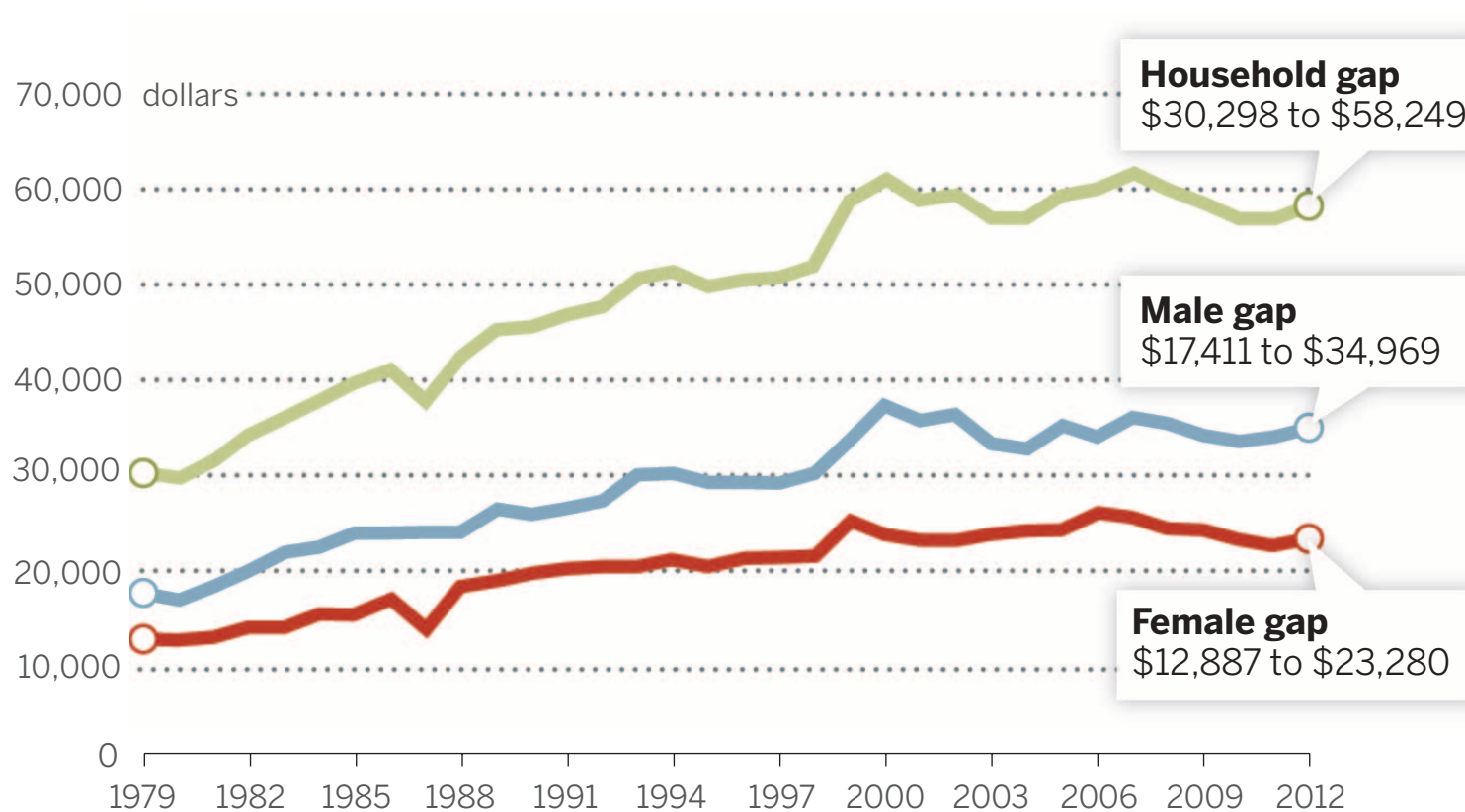
- Assume $Y = F(L_s, L_u)$ with $L_s =$ workers with high-level of education, $L_u =$ workers with low-level of education, and that demand for L_s rises over time bc of technological change
 - Ex: $F(L_s, L_u) = L_s^\alpha L_u^{1-\alpha}$, with $\alpha \uparrow$ over time
 - If L_s is fixed, then the relative wage of highly educated workers w_s/w_u (= “skill premium”) will rise over time
- Race between education and technology = Tinbergen model

1.2 The rise in the skill premium

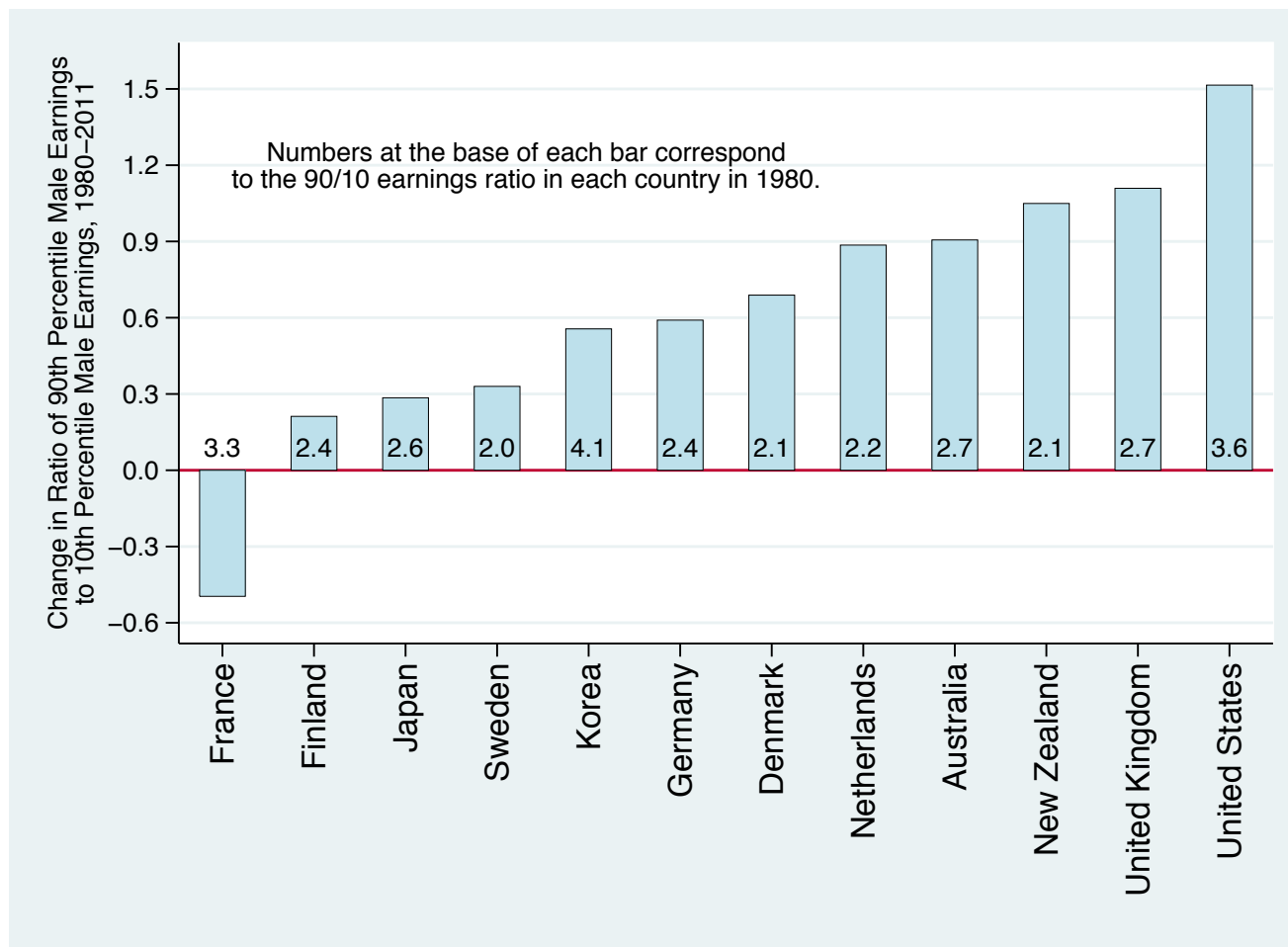
- Skill premium ↗ in many advanced countries in recent decades
- US: earnings gap between college and high school graduates has more than doubled over the past three decades
- This rise can explain up to 60–70% of the rise of US wage inequality between 1980 and 2005 (Goldin and Katz 2010)

College/high school median annual earnings gap, 1979–2012

In constant 2012 dollars



Source: Autor (2014)



Source: Autor (2014)

Whenever the supply of college educated workers stagnates, the skill premium always rises:

A — True

B — False

2 Why has the skill premium increased?

Two main factors: change in skill supply, change in skill demand

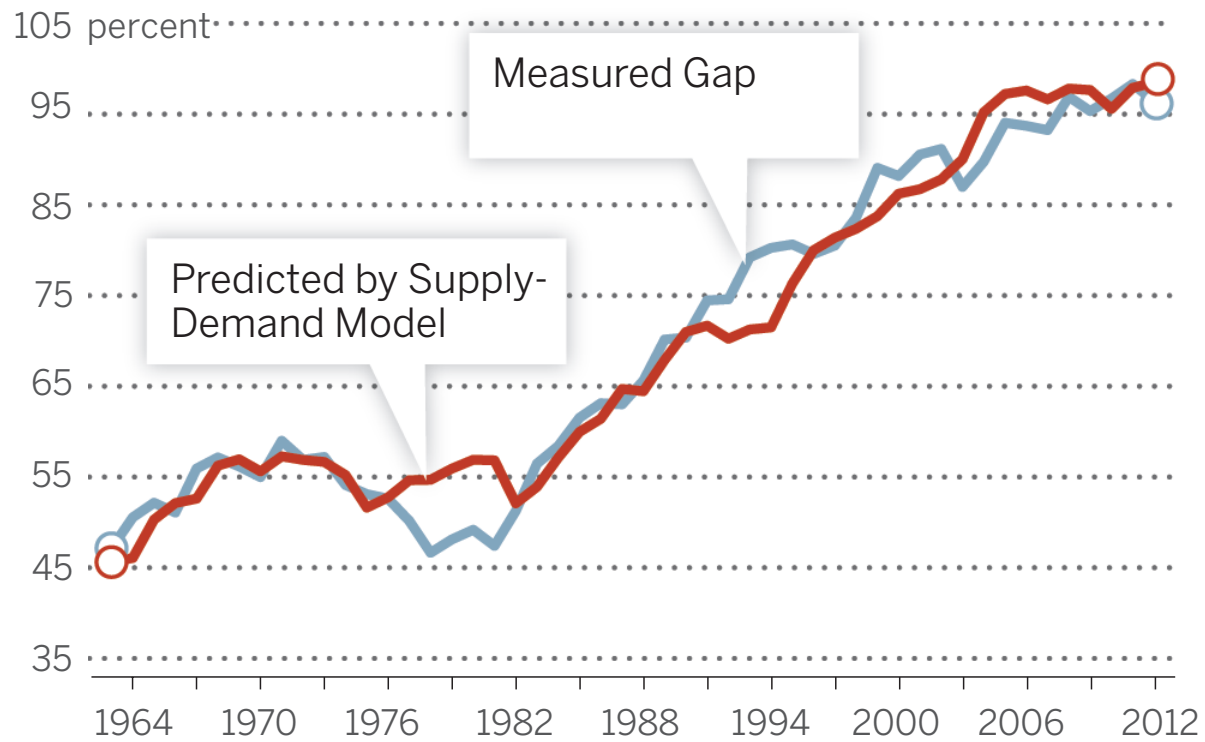
2.1 Skill supply

- Key determinant of the supply of skills = education system
- 1900-1940: US became first nation in the world to deliver universal high school education to its citizens.

- But in 1940, only 6% of Americans had 4-year college degree
- 1950s-1970s: sharp rise in college enrollment: GI bills; Vietnam war draft deferral
- After 1982: big slowdown (modest increase since post 2005 → flattening of the college premium after 2005)
- Goldin and Katz (2010) find systematic < 0 correlation between growth rate of college grads and change in skill premium in the US

College versus high school
wage gap (%)

B



Source: Autor (2014)

2.2 Skill demand

- Skill demand continued to rise post 1980
- 20th century: successive waves of innovation (electrification, mass production, motorized transportation, telecommunications) have
↘ demand for physical labor and ↗ the centrality of cognitive labor

Today: ongoing process of machine substitution for routine human labor. Consequences:

- Complements educated workers who excel in abstract tasks that are at present difficult to automate but essential to perform
- But downward pressure on workers with low-level of education → drop in non-college employment opportunities in production, clerical, and administrative support positions stemming from automation

→ fall in real wage of workers with relatively low educational attainments:

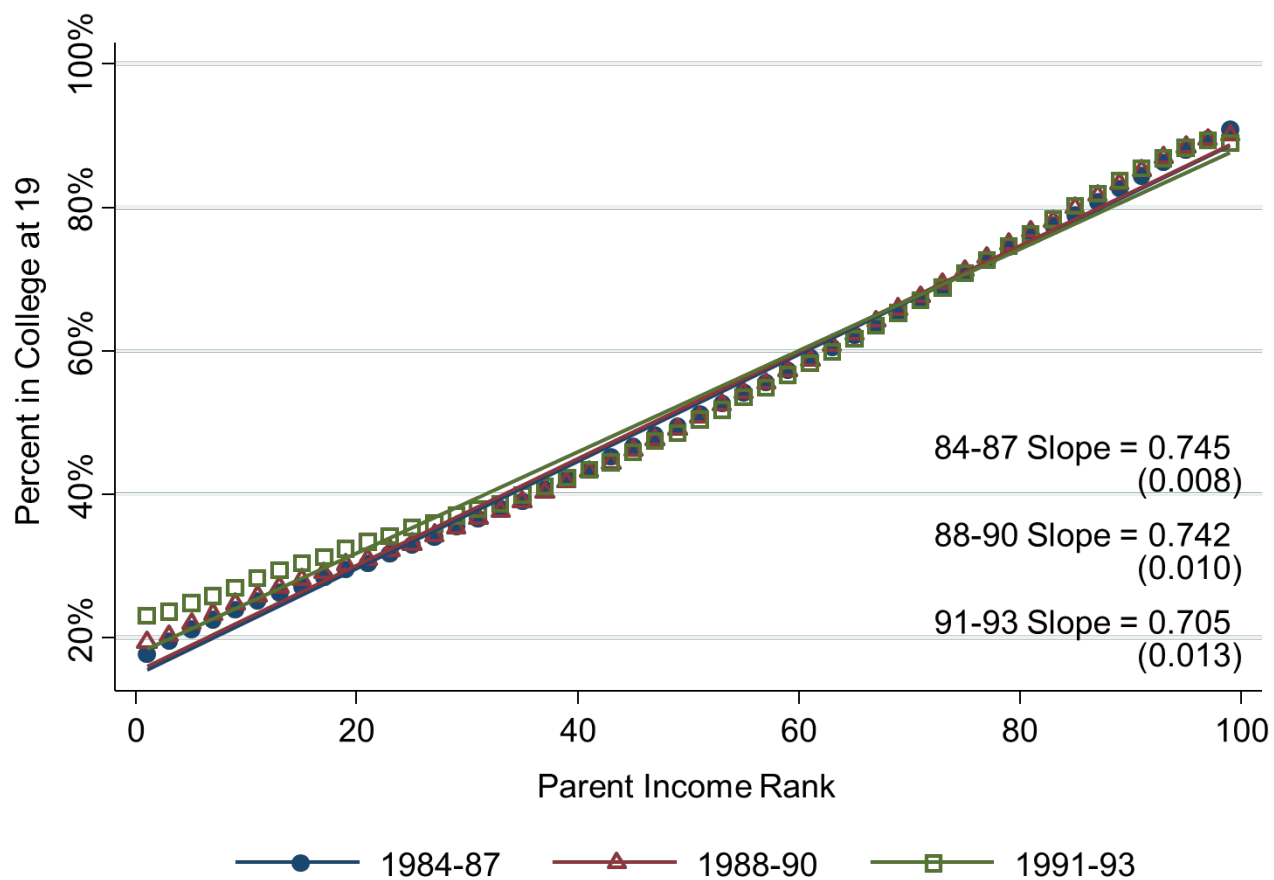
- -22% over 1980-2012 for high school dropouts males

- -11% for high school graduates
- Fall of labor force participation

2.3 Why has college supply declined?

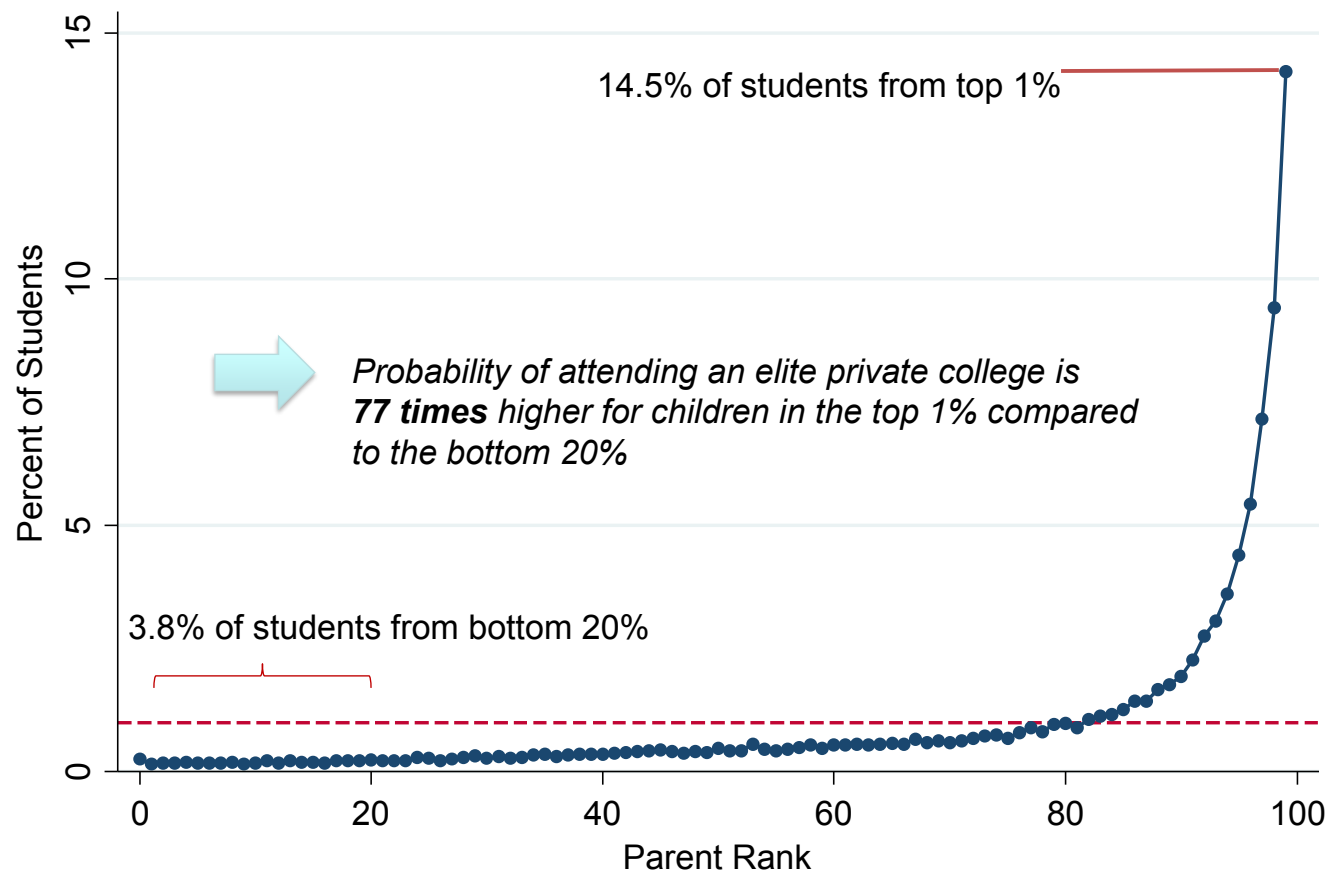
- Temporary factor: end of Vietnam war
- Long run factor: inequality in access to education

Appendix Figure 4. College Attendance Rates vs. Parent Income Rank by Cohort

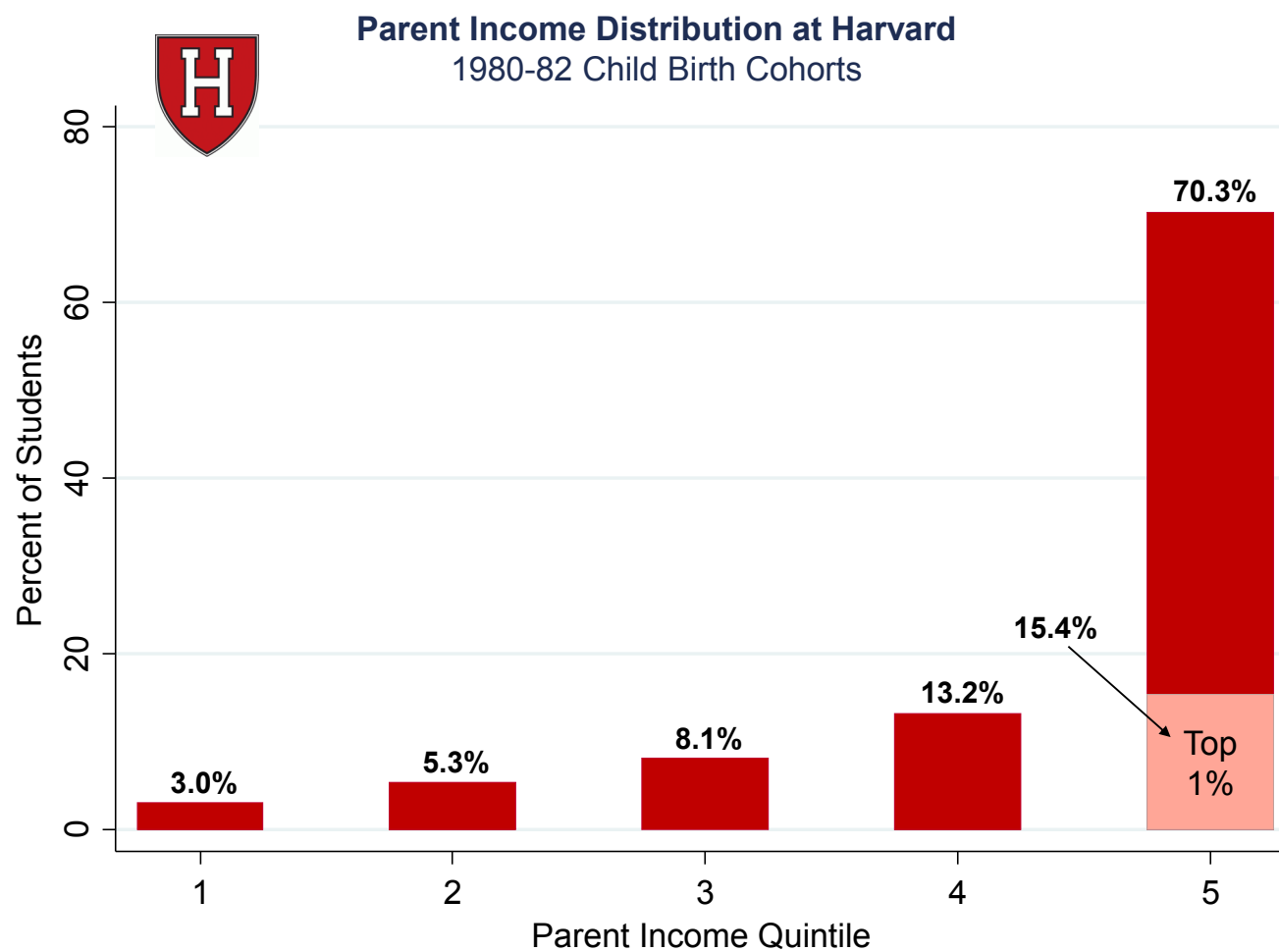


Source: Chetty et al. (2014)

Parent Income Distribution by Percentile Ivy Plus Colleges



Source: Chetty et al. (2016)



Source: Chetty et al. (2016)

3 Policy implications

Right way to reduce wage inequ. in the long run is inv. in education

- Excellent preschool through high school education
- Broad access to postsecondary education
- Good nutrition, public health, and home environments
- All of this requires gov. revenue: progressive taxes and transfers

References

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