

Rising Earnings Inequality

Prof. Lutz Hendricks

Econ520

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The issues

Earnings inequality has been rising for the past 35 years.

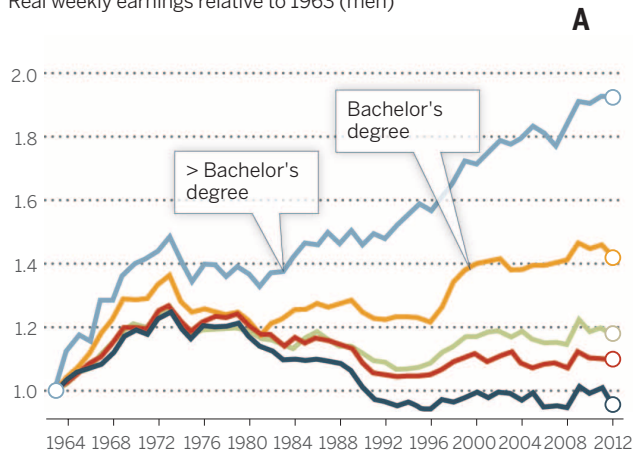
Why has this happened?

- ▶ rising return to schooling (well understood)
- ▶ automation?
- ▶ international trade?

What could be done about it?

Rising return to schooling

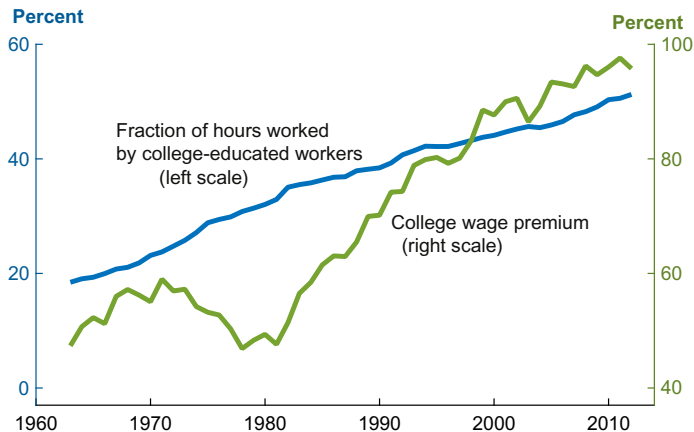
Real weekly earnings relative to 1963 (men)



Source: Autor (2014)

Remarkable: No wage gains for high school grads since 1970

Why Did the College Premium Rise?



Source: Jones (2016)

Surprise: The premium rose even as the relative supply of college grads rose.

Skill biased technical change

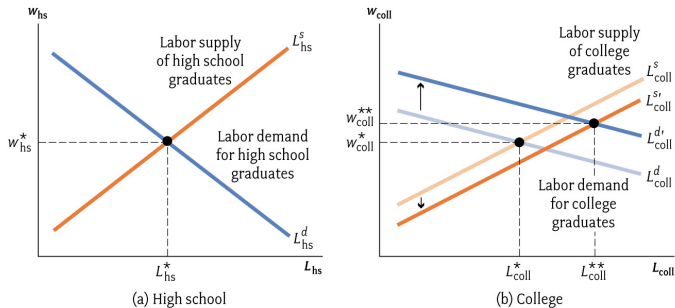


FIGURE 7.9 Understanding the Rising Return to Education

Macroeconomics, Charles I. Jones
Copyright © 2008 W. W. Norton & Company

Demand for college labor rises faster than supply

A Simple Model of SBTC

SBTC: Skill-biased technical change.

Aggregate production function:

$$Y_t = F(\mu_t H_t, L_t) \quad (1)$$

H : labor input of college grads, L : others

μ_t : skilled-labor augmenting technology

- ▶ computers? internet?
- ▶ μ_t grows over time

A Simple Model of SBTC

Wages = marginal products of labor

$$w_{H,t} = \mu_t \frac{\partial F}{\partial (\mu H)} \quad (2)$$

SBTC: μ grows at a constant rate over time

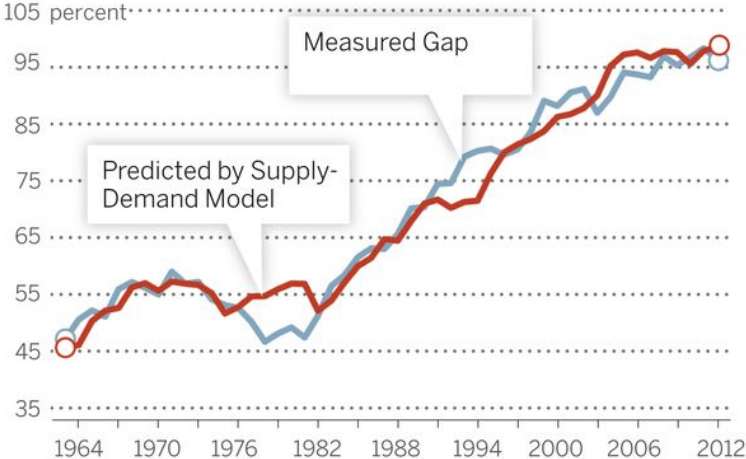
How well does this model fit the data?

- ▶ Take labor supplies from the data (hours worked)
- ▶ Fit a constant growth trend for μ

Model Fit

College versus high school wage gap (%)

B



Model Implications

The “Race Between Education and Technology” (Goldin & Katz).

For a long time, the demand for skilled labor has been rising

- ▶ in many countries
- ▶ at a constant rate

For a long time, the **rising supply** of skilled labor prevented the rise of the college premium.

Around 1980, the rise in U.S. college attendance slowed down.

- ▶ Why?

Since then, demand outstrips supply and the college premium rises.

Skill biased technical change

SBTC is widely viewed as a main contributor to rising wage inequality.

Demand for skilled / managerial occupations rose over time.

Potential causes:

- ▶ computers, automation
- ▶ international trade

Automation

How does automation (computers, AI) affect the demand for labor?

Types of jobs:

- ▶ highly skilled: usually hard to automate (abstract decision making)
- ▶ skilled blue collar: easy to automate (assembly lines, bank tellers)
- ▶ unskilled: hard to automate “soft tasks” (retail sales)

Result: automation pushed workers from middle income to low income jobs.

Labor Market Polarization

Figure 6. Employment Growth Has Polarized Between High- and Low-Paid Occupations

CHANGES IN OCCUPATIONAL EMPLOYMENT SHARES AMONG WORKING-AGE ADULTS, 1980–2015

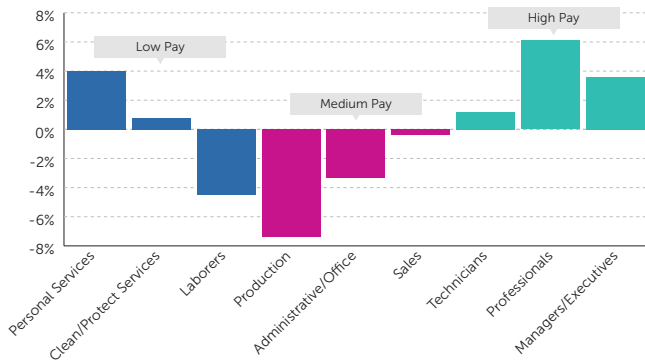


Figure is constructed using U.S. Census of Population data for 1980, 1990, and 2000, and pooled American Community Survey (ACS) data for years 2014 through 2016, sourced from IPUMS (Ruggles et al., 2018). Sample includes working-age adults ages 16–64 excluding those in the military. Occupational classifications are harmonized across decades using the classification scheme developed by Dorn (2009).

Source: Autor (2020)

Do Robots Destroy Jobs?

Acemoglu and Restrepo (2019)

- ▶ each manufacturing robot replaces about 6 workers
- ▶ total jobs lost until 2007: 670,000
- ▶ surprise: few new jobs are created elsewhere
- ▶ a nice summary in the NY Times

Growing evidence suggests: workers are surprisingly immobile.

Does this contradict the AS/AD model's implications?

Will Jobs Disappear?

Will automation make most jobs obsolete?

Should we expect that workers without college degrees will become unemployable?

For a long answer, see Autor (2020).

Policy Implications

What could governments do to counter the effects of automation?
(A good topic for your term paper!)

- ▶ Raise the minimum wage?
- ▶ Universal basic income?
- ▶ Tax robots (Bill Gates)?

What else could be done?

Reading

- ▶ Autor (2014) on the race between education and technology.

Advanced Reading

- ▶ Gordon, Robert J.; Dew-Becker, Ian (2007). "Selected Issues in the Rise of Income Inequality. *Brookings Papers on Economic Activity*, 2007, 2, pp. 169-190. DOI: 10.1353/eca.2008.0011
- ▶ Dew-Becker, Ian. Gordon, Robert J. (2005). "Where Did the Productivity Growth Go? Inflation Dynamics and the Distribution of Income." *Brookings Papers on Economic Activity*, 2005, 2, pp. 67-150. DOI: 10.1353/eca.2006.0004
- ▶ Autor (2020): A report on the outlook for future work and earnings. Focuses on automation and AI.

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- Acemoglu, D. and P. Restrepo (2019): "Robots and Jobs: Evidence from US Labor Markets," *Journal of Political Economy*, 128, 2188–2244, publisher: The University of Chicago Press.
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