



# Session 8: The Dismal Science — Unemployment and Inequality

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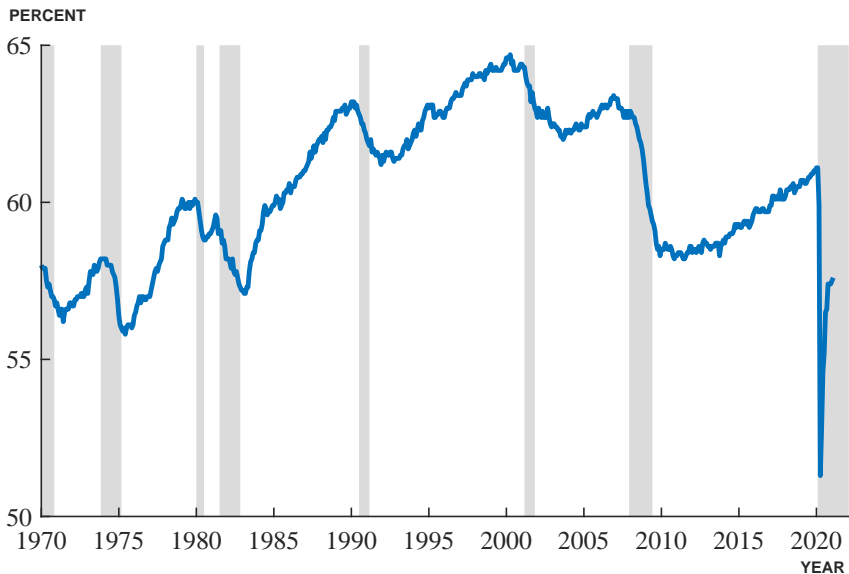
## Outline: Unemployment and Inequality

- Some facts about U.S. and international labor markets
- Using supply and demand to understand unemployment
- Inequality
- The rising return to education

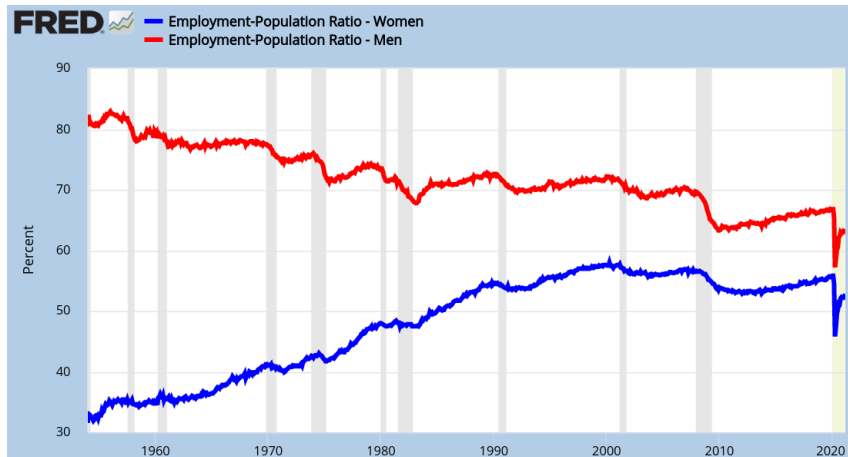


# Unemployment

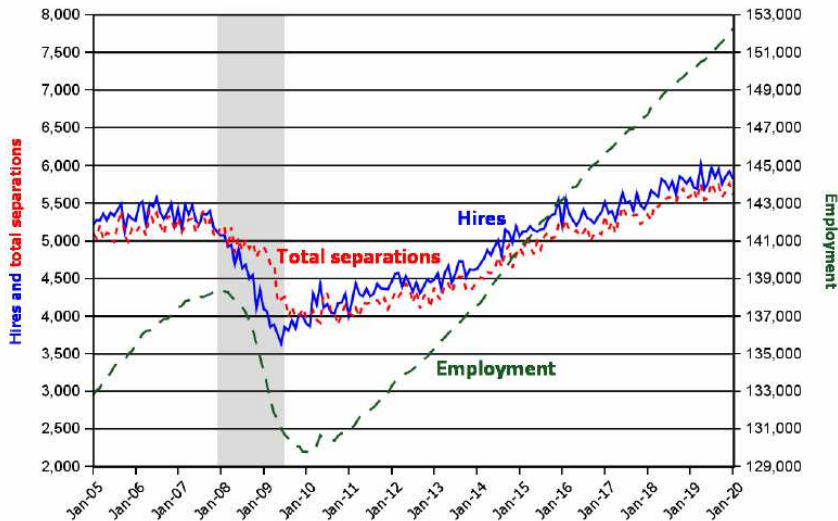
## The U.S. Ratio of Employment to Population



## Male and Female Employment-Population Ratios

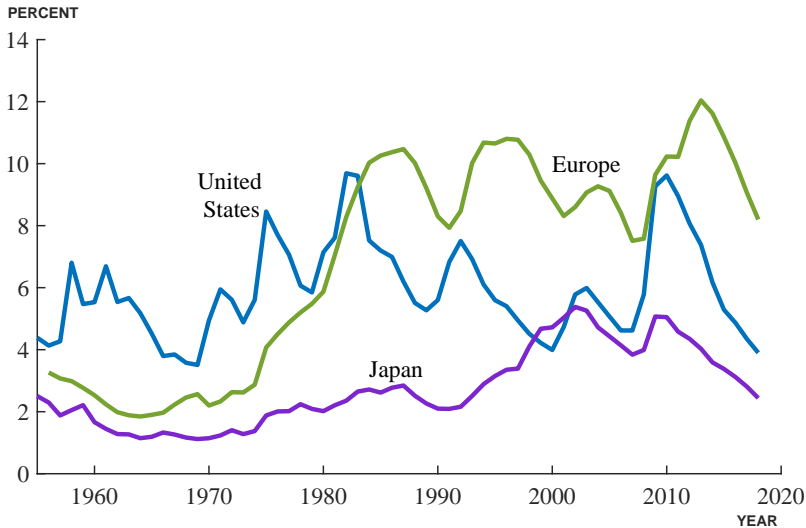


## Monthly Job Creation and Job Destruction (thousands)



Source: JOLTS from Bureau of Labor Statistics

## Unemployment in the U.S., Europe, and Japan



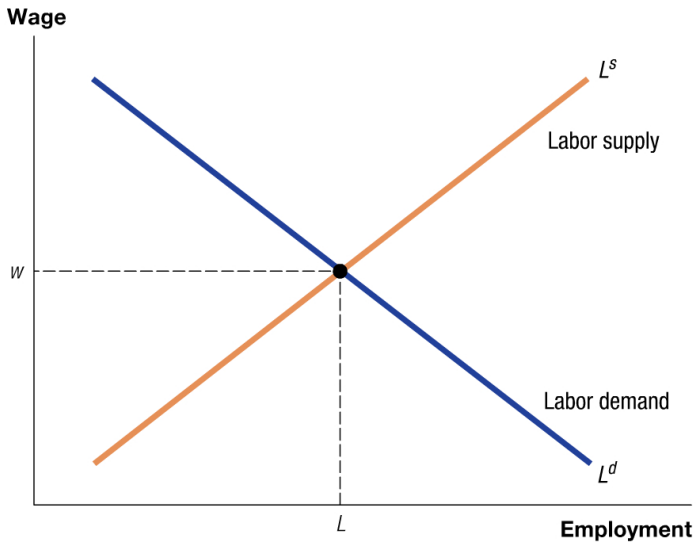
Feb 2021 numbers: US=6.2, Euro=8.3, Japan=2.9

## Understanding Unemployment or Low Employment

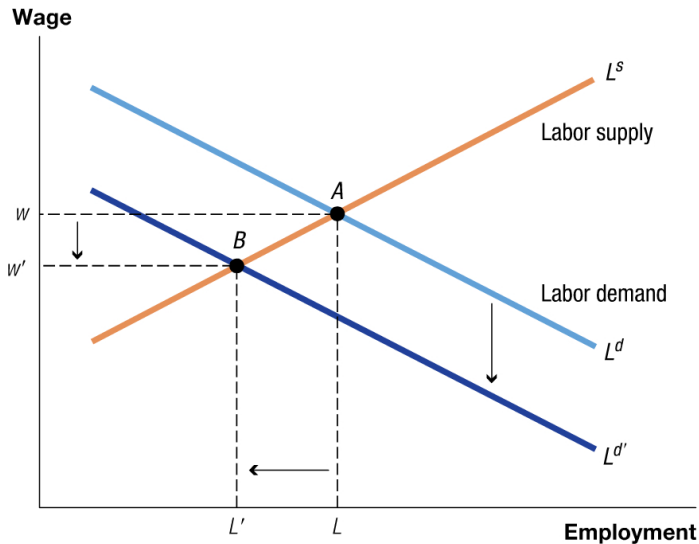
- How can a supply and demand model of the labor market help us to understand the following?
  - During a recession, the employment-population ratio declines and the unemployment rate rises
  - The large increase in unemployment in Europe over the last 40 years



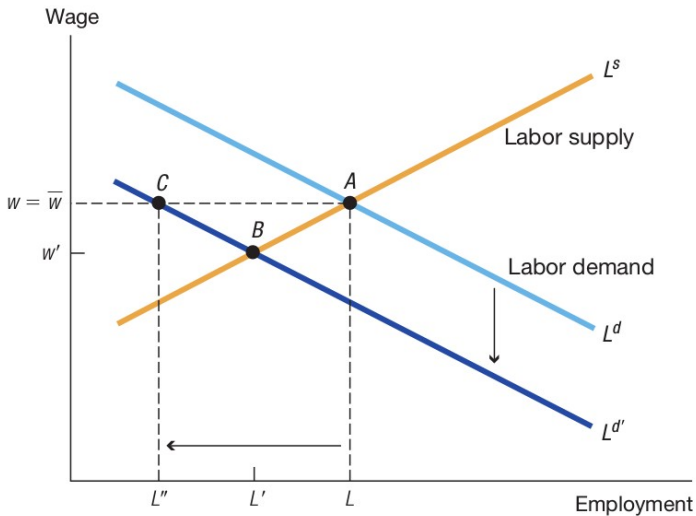
## Supply and Demand in the Labor Market



## A Decline in Labor Demand



## A Decline in Labor Demand with Wage Rigidity



## What explains rising European unemployment?

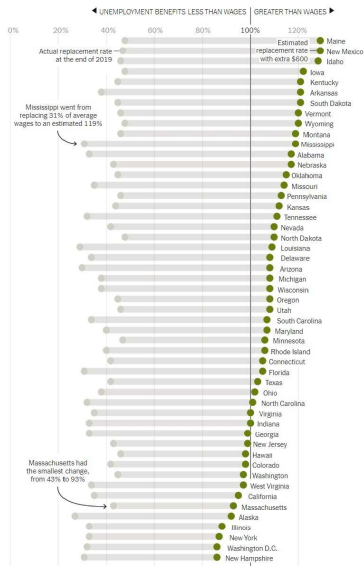
## What explains rising European unemployment?

- Adverse shocks
  - Worldwide productivity slowdown and high oil prices in 1970s
  - But many other countries (e.g. the U.S.) suffered the same fate
- Inefficient labor market institutions
  - Hiring and firing costs
  - Very generous social safety net and unemployment insurance
    - US = 20 to 30% of wages for six months or so (extended during recessions)
    - Europe = 60% of wages for up to 5 years or more!
  - But these have been in place since the 1950s and 60s
- Both? (Recent reforms in several European countries)

## Unemployment Benefits around the World



# COVID-19: U.S. Unemployment Insurance Replacement Rates



## Annual Hours Worked per Adult (US=100 in 2017)

	1960	1990	2017
United States	89	105	100
France	109	79	75
Germany	133	94	85
U.K.	116	98	96
Japan	132	127	111
South Korea	81	135	127

Source: Penn World Tables 9.1

- Important to account for when comparing GDP numbers
- TFP calculations already take this into account
- GDP does not equal welfare ( $\lambda$ ). Jones-Klenow (2016):

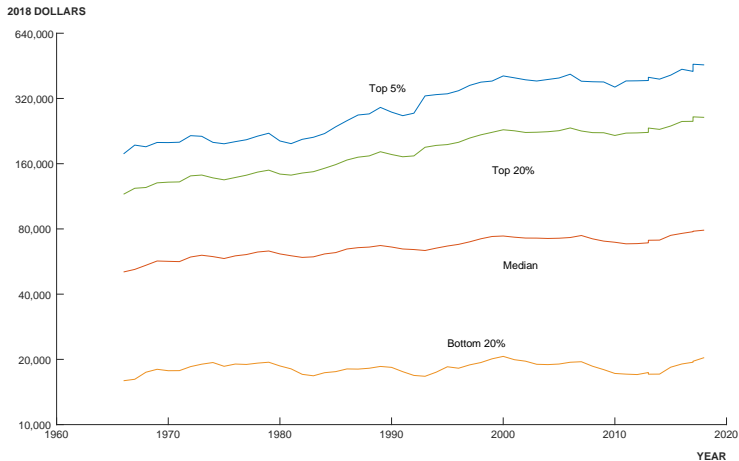
$$\frac{y_{France}}{y_{US}} = 0.7, \text{ but } \frac{\lambda_{France}}{\lambda_{US}} = 0.91. \text{ Leisure!}$$





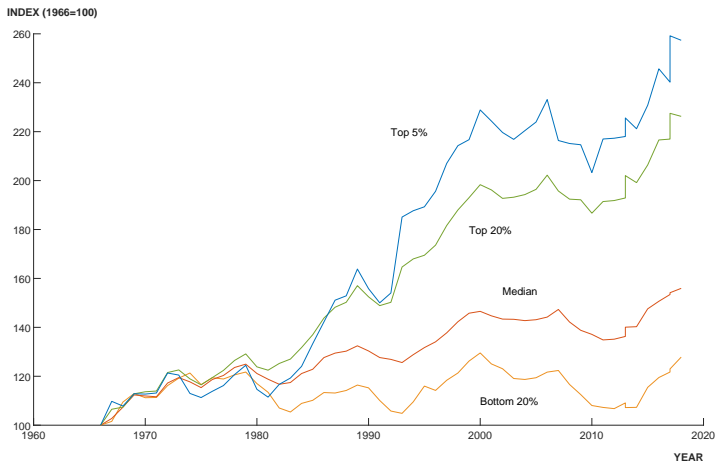
# Inequality

## Mean Family Income for Select Quintiles



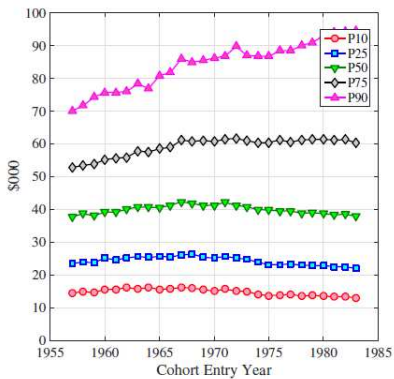
Source: U.S. Census Bureau (CPS)

## Growth of Family Income for Select Quintiles

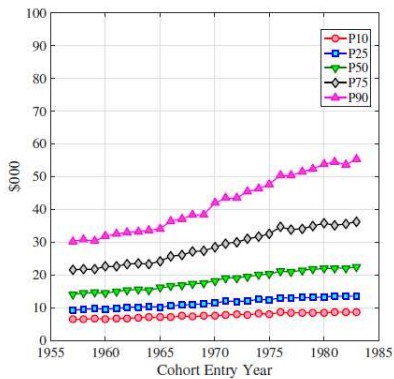


Source: U.S. Census Bureau (CPS)

## Lifetime Earnings by Cohort and Gender



(a) Males

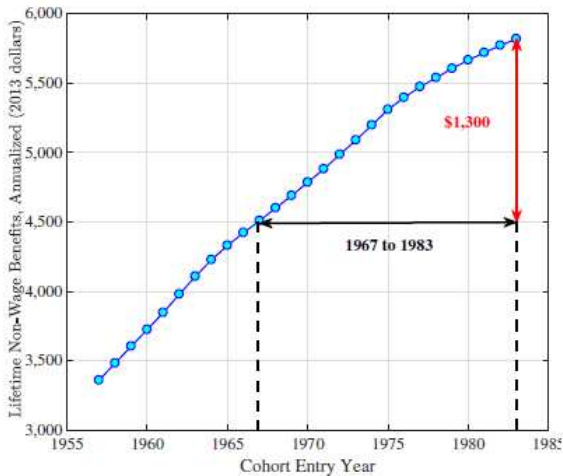


(b) Females

Source: Guvenen-Kaplan-Song-Weidner (2019)

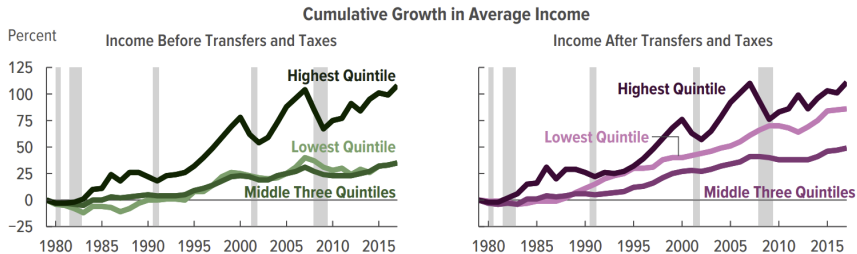
## Lifetime Nonwage Benefits

(b) Real lifetime value non-wage benefits, annualized, by cohort



Source: Guvenen-Kaplan-Song-Weidner (2019)

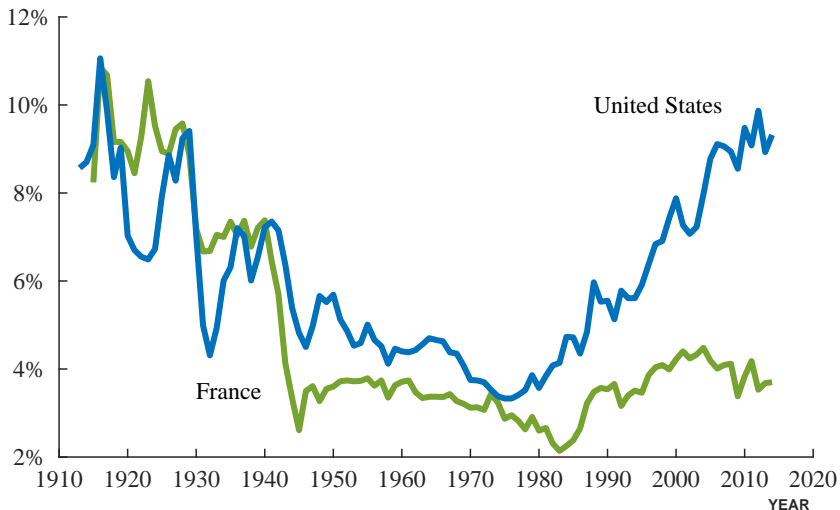
## Taking into account taxes and transfers...



Congressional Budget Office (2020)

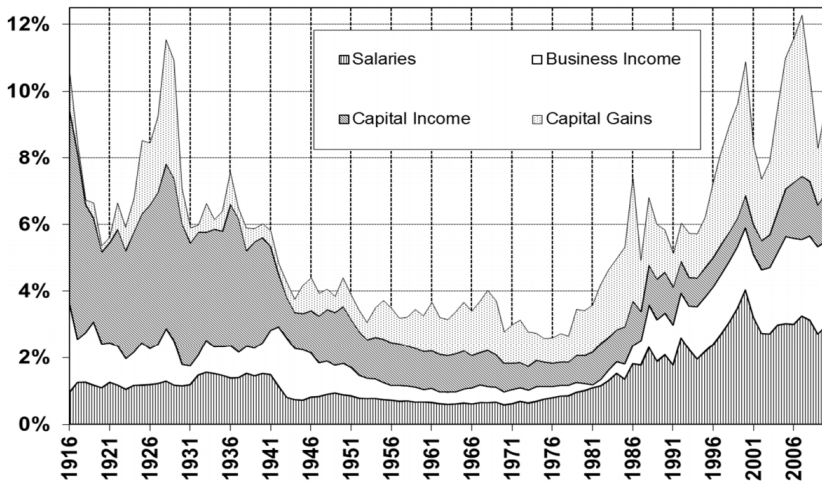
## Income Share of the Top 0.1 Percent of the Population

INCOME SHARE OF TOP 0.1 PERCENT



Source: Piketty and Saez, "Income Inequality in the United States, 1913-1998" (updated 2019)

## The Composition of the Top Income Share



See also Paul Graham "How People Get Rich Now" 2021

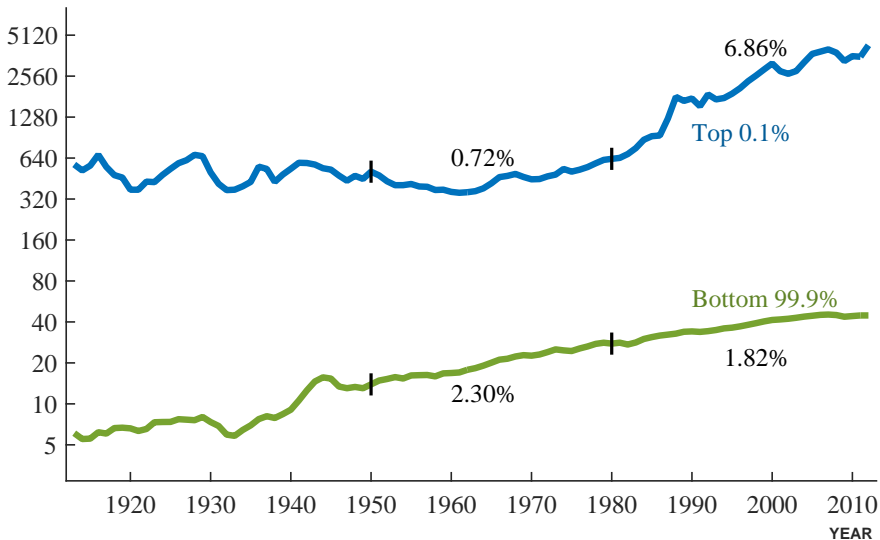


## Piketty / Saez (2006): “The Evolution of Top Incomes”

- Large decline in inequality across a range of countries between 1914 and 1945
  - Loss in capital through wars and the Great Depression
  - Did not recover after because of progressive income taxation
- US/UK see a big rise in inequality at the top after 1980
  - Not in Japan or France
  - Associated with wages and business income, not capital income → executive compensation and entrepreneurs

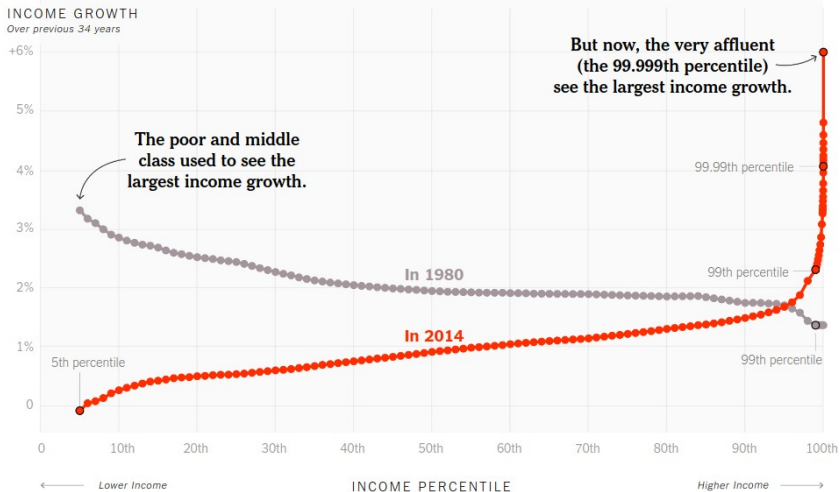
## Economic growth by inequality

THOUSANDS OF 2009 CHAINED DOLLARS



Source: Maddison + BEA + Piketty/Saez

## Reading: Our Broken Economy in One Simple Chart



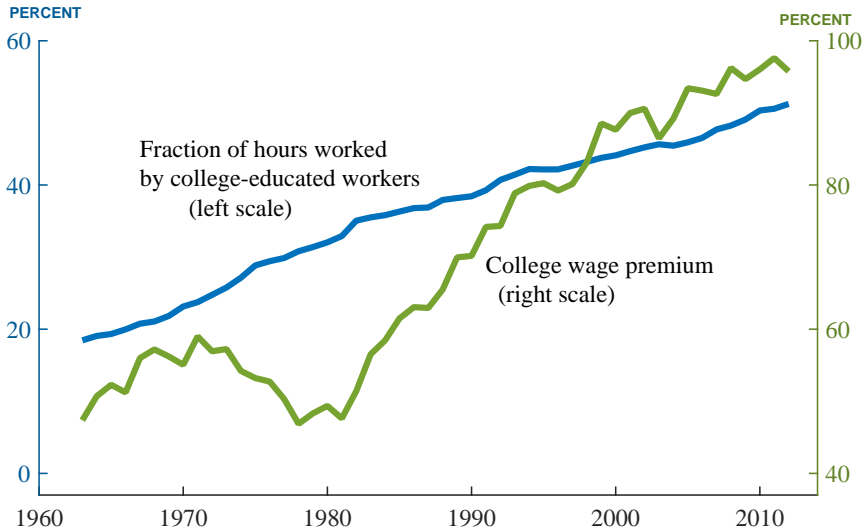
Note: Inflation-adjusted annual average growth using income after taxes, transfers and non-cash benefits.

Source: Piketty, Saez, Zucman via David Leonhardt, NYT

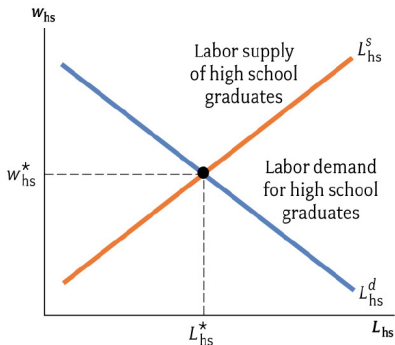


# The Rising Return to Education

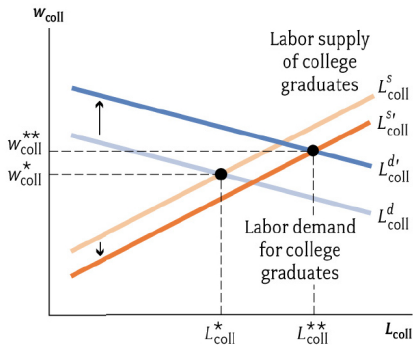
## College vs. High School Wages and Employment



## Understanding the Rising Return to Education



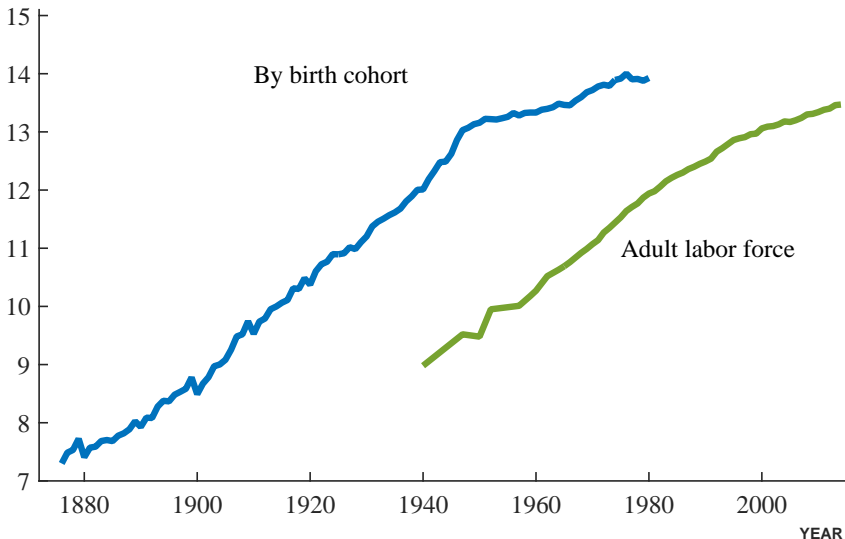
(a) High school



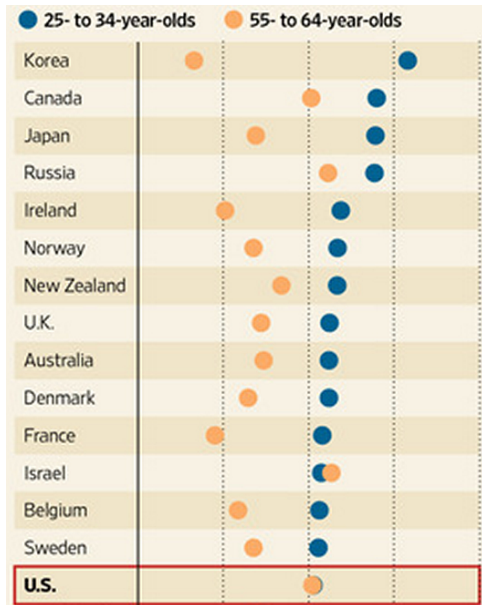
(b) College

## Supply: Educational Attainment in US

YEARS OF SCHOOLING



## Supply: College Completion, 2009





## The Supply of Educated Workers

- A slowdown in the supply of educated workers?
  - High school graduate rates peaked at 80% in the late 1960s and have since declined (Heckman)
  - The growth in educated workers has been an important driving force in U.S. economic growth
- Two far-reaching consequences:
  - ① Slowing engine of U.S. economic growth?
  - ② Inequality — The Race Between Education and Technology, Goldin and Katz (2008)

## The Demand for Educated Workers

- Skill-biased technical change
  - New technologies (such as IT) may favor highly educated workers
- Globalization
  - Lower trade barriers make skilled workers scarce, raising their wage
  - Recall trade effects of China on low-skilled U.S. workers
- How important is each?
  - SBTC would raise the wages of educated workers everywhere
  - Globalization could hurt the wages of educated workers in poor countries

## Reading: Yglesias: “The Automation Myth”

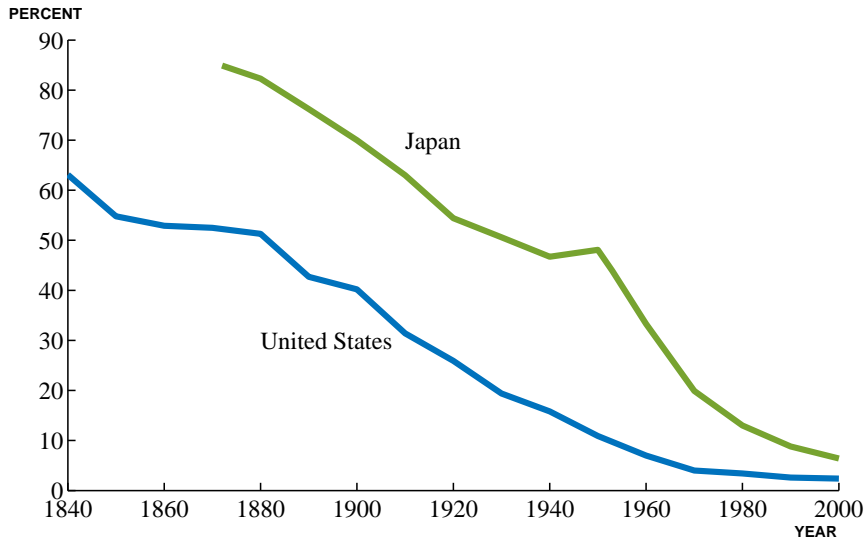
- Should we fear the “Rise of the Machine”?
- Is it happening? Data vs intuition
- What will work look like in 25 years?
- Growth and inequality
  - Had rapid growth of 1948-73 continued:  
Median incomes would be 30k higher
  - Had inequality remained at 1973 level:  
Median incomes would be 9k higher

## On technological change and unemployment...

*“When Milton Friedman was asked about this kind of thing, he said: Human wants and needs are infinite, and so there will always be new industries, there will always be new professions. This is the great sweep of economic history. When the vast majority of the workforce was in agriculture, it was impossible to imagine what all those people would do if they didn’t have agricultural jobs. Then a hundred years later the vast majority of the workforce was in industrial jobs, and we were similarly blind: It was impossible to imagine what workers would do without those jobs. Now the majority are in information jobs. If the computers get smart enough, then what? I’ll tell you: The then what is whatever we invent next.”*

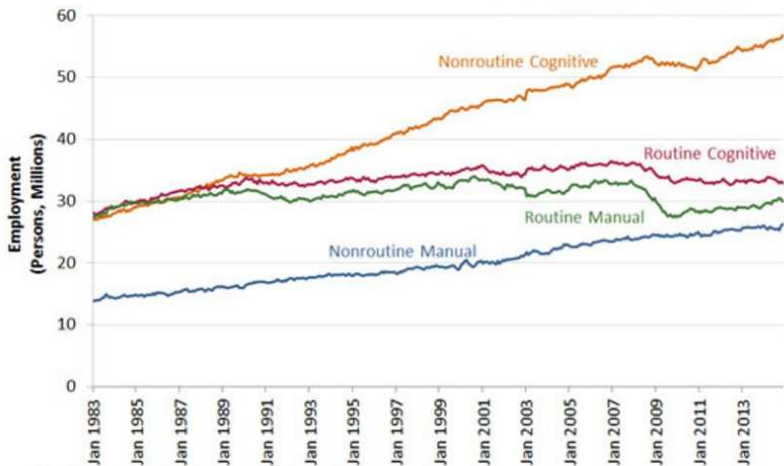
— Marc Andreessen

## Employment in Agriculture — Share of Total



Source: "The Facts of Economic Growth"

## Jobs: Routine vs Nonroutine and Cognitive vs Manual



St. Louis Fed

## Questions for Review

- What are the stylized facts in the U.S. and in other countries for the following:
  - Unemployment and employment
  - Hours worked
  - Inequality
- How can these patterns be understood using supply and demand?
- What is the race between technology and education and why is it important?