LECTURE 12
RISING INEQUALITY
March 5, 2019

I. OVERVIEW OF RISING INEQUALITY
   A. Types of income and rising income inequality
   B. Reasons that rising income inequality is important

II. SOME FACTS ABOUT TRENDS IN INCOME INEQUALITY OVER TIME
   A. Piketty and Saez’s question
   B. Data and approach
   C. Findings
   D. Possible concerns

III. EXPLAINING RISING LABOR INCOME INEQUALITY
   A. Framework: The markets for low-skilled and high-skilled workers
   B. Skill-biased technological change
      1. The impact on high-skilled workers
      2. The impact on low-skilled workers
      3. “The race between education and technology”
   C. Increased trade (globalization)
   D. Imperfect labor markets and changes in economic power
      1. Declining union membership
      2. Declining real minimum wage
      3. Changing social norms

IV. POSSIBLE REMEDIES FOR RISING INCOME INEQUALITY
   A. Improved access to high-quality education and job training
   B. Trade adjustment assistance
   C. Place-based policies
   D. Wage-based policies
   E. Income redistribution
LECTURE 12
Rising Inequality

March 5, 2019
Announcements

• We handed out Problem Set 3:
  • It is due next Tuesday (March 12).
  • Problem set work session, Thursday (March 7th), 5–7 p.m. in 648 Evans.
• Professor office hours this week are today (Tuesday, March 5th), 4–6 P.M.
• Thursday’s lecture will be given by Todd Messer.
I. Overview of Rising Inequality
Sources of Income

• Labor Income:
  • Income a person receives from working.
  • Wages or salary.

• Capital Income:
  • Income a person receives from returns on capital.
  • Capital refers to holdings of machines, real estate, stocks, bonds, etc.
Focus of Today’s Lecture

• Rising inequality in labor income.

• Key fact is that income inequality has risen substantially in the past few decades.

• What are the sources of rising labor income inequality and possible remedies?
Why Might We Care about Rising Labor Income Inequality?

• Income inequality and poverty are often correlated.

• Rising income inequality may be bad for social cohesion, democracy, etc.
II. SOME FACTS ABOUT TRENDS IN INCOME INEQUALITY OVER TIME
Piketty and Saez’s Data

- Data are from income tax returns.
- Sample period starts with the beginning of the U.S. income tax (1913).
- Why does their use of income tax data lead them to focus on the top of the income distribution?
Table 3.—Individual returns for 1933 by net income classes, showing simple and cumulative distribution of number of returns, net income and tax, and percentages

[For text defining certain items and describing methods of tabulating and estimating data, see pp. 1-5]

<table>
<thead>
<tr>
<th>Net Income classes (Thousands of dollars)</th>
<th>Simple distribution</th>
<th>Cumulative distribution from highest income class</th>
<th>Cumulative distribution from lowest income class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>--------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>250-300</td>
<td></td>
<td></td>
<td>101</td>
</tr>
<tr>
<td>300-400</td>
<td></td>
<td></td>
<td>86</td>
</tr>
<tr>
<td>400-500</td>
<td></td>
<td></td>
<td>55</td>
</tr>
<tr>
<td>500-750</td>
<td></td>
<td></td>
<td>56</td>
</tr>
<tr>
<td>750-1,000</td>
<td></td>
<td></td>
<td>25</td>
</tr>
</tbody>
</table>

Net income:

<table>
<thead>
<tr>
<th>Amount</th>
<th>Percent</th>
<th>Amount</th>
<th>Percent</th>
<th>Amount</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>250-300</td>
<td></td>
<td>27,374,302</td>
<td>.25</td>
<td>225,502,764</td>
<td>2.05</td>
</tr>
<tr>
<td>300-400</td>
<td></td>
<td>30,099,524</td>
<td>.27</td>
<td>198,128,462</td>
<td>1.80</td>
</tr>
<tr>
<td>400-500</td>
<td></td>
<td>24,471,169</td>
<td>.22</td>
<td>168,028,938</td>
<td>1.53</td>
</tr>
<tr>
<td>500-750</td>
<td></td>
<td>34,919,509</td>
<td>.32</td>
<td>143,557,769</td>
<td>1.31</td>
</tr>
<tr>
<td>750-1,000</td>
<td></td>
<td>21,780,911</td>
<td>.20</td>
<td>108,658,200</td>
<td>.99</td>
</tr>
</tbody>
</table>
Piketty and Saez’s Calculation

- Know total income from other sources.
- Know the total number of households (or tax units) from the census.
- Tax data show number of taxpayers earning different amounts and the income of the different groups.
- Can figure out what fraction of total income is accruing to the top 1% of households, the top 10%, etc.
“Fractile”

• A slice of a distribution defined by percentiles.

• Examples:
  
  • The 99\textsuperscript{th} percentile and above.
  
  • Between the 90\textsuperscript{th} and 95\textsuperscript{th} percentiles.
FIGURE I
The Top Decile Income Share, 1917–1998
Source: Table II, column P90–100.
FIGURE 3
Top 0.1% US Pre-Tax Income Share, 1913-2017

Source: Piketty and Saez, Figure 3 (2019 update).
Source: Piketty and Saez, Figure 5 (2019 update). Series display the share of capital income (excluding capital gains) and dividends in total income (excluding capital gains) for the top 0.5% income quantile.
FIGURE 9

Wage Income Shares for P90-95, P95-99, and P99-100, 1927-2011

Source: Piketty and Saez, Figure 9 (2019 update). Figure shows the share of wage income going to various fractiles.
Key Findings

• Income inequality started rising around the 1970s.

• The share of income going to the very top of the income distribution has risen even more quickly.

• Capital income is a small fraction of total income even for the rich in recent years. This suggests that current trends toward rising inequality are due to rising inequality of labor income.
Possible Concerns about the Evidence

• Reported taxable income versus all income.

• Taxes and transfers (depending on the question one is asking).

• Year-to-year fluctuations in income (depending on the question one is asking).

• Other?
III. EXPLAINING RISING LABOR INCOME INEQUALITY
Overview

• Look at two explanations within the supply and demand model of a well-functioning labor market.
  • Skill-biased technological change
  • Globalization

• Also look at some explanations premised on imperfect labor markets and employer power.
Income Inequality and Skills

• Low-skill jobs are those requiring relatively little education (home healthcare aides, janitors, food-service workers).

• High-skill jobs are those requiring high levels of education (doctors, engineers, accountants, computer programmers).

• Changes in the relative wages of low-skill and high-skill workers parallel the trends in rising income inequality.
Real Wages of Full-Time Male Workers by Educational Level

Source: David Autor, “Skills, Education, and the Rise of Earnings Inequality among the ‘Other 99 Percent’.”
Framework

• Consider the markets for low- and high-skilled labor.

• The labor supply curve comes from utility maximization on the part of households.
  • Its position depends on tastes and on the number of workers with the relevant skills.

• The labor demand curve in each case comes from profit maximization on the part of firms.
  • It is the $\text{MRP}_L$ curve for a given type of labor.
  • $\text{MRP}_L = \text{MP}_L \cdot \text{MR}$ (where MR = $P$ for competitive firms).
Markets for Workers with Different Skill Levels

Low-Skill

High-Skill

\[ W_L \]

\[ W_H \]

\[ W_{L1} \]

\[ W_{H1} \]

\[ L_{L1} \]

\[ L_{H1} \]
Skill-Biased Technological Change

• Technological change in recent decades has tended to favor high-skilled workers.

• Technologies such as computers make high-skilled workers more productive, and so shift out the $\text{MRP}_L$ for high-skilled workers.
Skill-Biased Technological Change

Low-Skill

High-Skill

\[ W_L \]  
\[ S_L \]  
\[ D_{L1} \]  
\[ W_{L1} \]  
\[ L_{L1} \]

\[ W_H \]  
\[ S_H \]  
\[ D_{H1} \]  
\[ D_{H2} \]  
\[ W_{H1} \]  
\[ W_{H2} \]  
\[ L_{H1} \]  
\[ L_{H2} \]
Skill-Biased Technological Change (continued)

• If the technological change is so skill-biased that it actually replaces some low-skilled workers, it could shift back the labor demand curve in the low-skill sector.
Auto Factory

1955

2013
Flippy the Robot
Skill-Biased Technological Change, including Low-Skill-Labor-Saving Technological Change
Skill-Biased Technological Change and the Wages of the Top 1 Percent

• Modern technology may increase the rewards to the very top-skilled people.

• For example computers and easy mass communication make it possible for top entertainers, artists, inventors, and entrepreneurs to reap huge rewards.
The Race between Education and Technology

• Skill-biased technological change tends to increase inequality.

• Increases in education tend to decrease inequality.

• In the 1950s and 1960s, the two forces roughly balanced.

• Starting around 1970, increases in education slowed, so the effects of skill-biased technological change dominated.
Figure 1-7
Mean Years of Schooling by Birth Cohort

Notes: Years of schooling at 30 years of age. Methodology described in Goldin and Katz (2007).

U.S. Exports and Imports (as a share of GDP)

Source: Bureau of Economic Analysis.
Globalization

• The U.S. tends to have a comparative advantage in goods that use high-skilled labor, and a comparative disadvantage in goods that use low-skilled labor.

• That is, the opportunity cost to the U.S. of making goods that use high-skilled labor is lower than that of most of our trading partners; the opportunity cost to the U.S. of making goods that use low-skilled labor is higher than that of most of our trading partners.

• So, reduced trade barriers lower the prices in the U.S. of goods that use low-skilled labor, and raise the prices in the U.S. of goods that use high-skilled labor.
Globalization

Low-Skill

High-Skill

Low-Skill Chart:
- Wage: $W_L$
- Labor Supply: $S_L$
- Labor Demand: $D_L$
- Labor Levels: $L_{L1}$, $L_{L2}$

High-Skill Chart:
- Wage: $W_H$
- Labor Supply: $S_H$
- Labor Demand: $D_H$
- Labor Levels: $L_{H1}$, $L_{H2}$
Imperfect Labor Markets and Changes in Economic Power

• Labor markets may be imperfect.

• For example, employers may not face lots of competition in the labor market, and so are able to get away with paying workers less than their $\text{MRP}_L$.

• In this case, changes in factors mitigating these imperfections can affect income inequality.
A Lower Negotiated Wage Market for Low-Skilled Workers
Union Membership
Percent of All U.S. Workers
1948 to 2010

Source: BLS
mjperry.blogspot.com

11.9%
Federal Minimum Wage

Federal minimum wage, 1938-2016

Shown in nominal (not adjusted for inflation) dollars and 2016 (inflation-adjusted) dollars


PEW RESEARCH CENTER
A Lower Minimum Wage
Market for Low-Skilled Workers
Changing Social Norms?

CEO-to-worker Compensation Ratio

While 2016 CEO pay is projected to fall slightly from 2015, the average CEO of a large U.S. company makes 271 times the wages of the average worker.

This uses the "options realized" compensation series which includes salary, bonus, restricted stock grants, options realized, and long-term incentive payouts for CEOs at the top 350 companies ranked by sales.

SOURCE: Economic Policy Institute
IV. POSSIBLE REMEDIES FOR RISING INCOME INEQUALITY
Rates of Return on Human Capital Investment

Source: James Heckman, “Skill Formation and the Economics of Investing in Disadvantaged Children.”
Increased Education

Low-Skill

High-Skill
Trade Adjustment Assistance

• Program designed to help workers who lose their jobs or face reduced wages because of trade.

• Job training, help with job search, extra unemployment benefits, wage subsidy for a while after reemployment.
Place-Based Policies

• Policies aimed at helping depressed areas.

• Tax benefits, subsidies, and other incentives for employers to come into a troubled locality.

• Funds to develop job training programs appropriate to the available employment.
Wage-Based Policies

• Policies like a higher minimum wage to try to raise wages directly.

• Increases in the Earned Income Tax Credit.
Effect of Raising the Minimum Wage Market for Low-Skill Workers
Effect of an Earned-Income Tax Credit Market for Low-Income Workers

\[ W_2 + \text{EITC} \]

\[ W_1 \]

\[ W_2 \]
Redistribution

• Government can tax high-income households and use the revenue to provide benefits to low-income households.
Some Statistics on the Midterm

• Median: 118

• 75\textsuperscript{th} percentile: 128

• 25\textsuperscript{th} percentile: 102

• Median corresponds \textit{roughly} to a B.
Some Notes on Grading

• We reward improvement.

• Regrade requests must be submitted in writing to your GSI by March 12th.

• We will correct clear-cut errors in grading, but we will not revisit judgment calls.