LECTURE 14
RISING INEQUALITY
March 7, 2017

I. OVERVIEW OF RISING INEQUALITY
   A. Types of income and rising income inequality
   B. Reasons 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
   B. Increased trade (globalization)
   C. Skill-biased technological change
   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
Announcements

• Hand in Problem Set 3.
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?
Sample Entries from the *Statistics of Income, 1933*

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<th>Returns</th>
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<td>Simple distribution</td>
<td>Cumulative distribution from highest income class</td>
<td>Cumulative distribution from lowest income class</td>
<td></td>
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<tr>
<td></td>
<td>Number</td>
<td>Percent of total</td>
<td>Number</td>
<td>Percent of total</td>
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<td>250-300</td>
<td>101</td>
<td>.0027</td>
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<td>75</td>
<td>.0023</td>
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<table>
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<th>Net income</th>
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</thead>
<tbody>
<tr>
<td>Amount</td>
<td>Percent of total</td>
<td>Amount</td>
<td>Percent of total</td>
<td>Amount</td>
<td>Percent of total</td>
</tr>
<tr>
<td>250-300</td>
<td>27,374,302</td>
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<td>225,502,764</td>
<td>2.05</td>
<td>10,810,509,292</td>
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<td>300-400</td>
<td>30,099,524</td>
<td>.27</td>
<td>198,128,462</td>
<td>1.80</td>
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<td>400-500</td>
<td>24,471,169</td>
<td>.22</td>
<td>168,028,938</td>
<td>1.53</td>
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<tr>
<td>500-750</td>
<td>34,919,509</td>
<td>.32</td>
<td>143,557,769</td>
<td>1.31</td>
<td>10,899,999,554</td>
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<tr>
<td>750-1,000</td>
<td>21,780,911</td>
<td>.20</td>
<td>108,658,200</td>
<td>.99</td>
<td>10,921,780,465</td>
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</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.

*Source:* Piketty and Saez.
FIGURE 3
Top 0.1% US Pre-Tax Income Share, 1913-2015

Source: Piketty and Saez, Figure 3 (2016 update).
FIGURE 5
The Capital Income Share in the Top 0.5%, 1916-2015

Source: Piketty and Saez, Figure 5 (2016 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 (2016 update). Figure shows the share of wage income going to various fractiles.
Key Findings

• Income inequality started rising in the mid-1980s.

• 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.
  • Globalization
  • Skill-biased technological change

• 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

Framework

- Consider the markets for low-skilled 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 $\text{MR} = \text{P}$ for competitive firms).
Markets for Workers with Different Skill Levels

Low-Skill

High-Skill

\(W_L\) \(S_L\) \(D_{L1}\) \(W_{L1}\) \(L_{L1}\)

\(W_H\) \(S_H\) \(D_{H1}\) \(W_{H1}\) \(L_{H1}\)
U.S. Exports and Imports (as a share of GDP)

Source: Bureau of Economic Analysis.
Globalization

• What U.S. industries likely expand or contract when trade increases?

• The U.S. tends to have a comparative advantage in goods that use high-skilled labor (and so exports those).

• The U.S. tends to have a comparative disadvantage in goods that use low-skilled labor (and so imports those).
Globalization

**Low-Skill**

- **$W_L$**
- **$S_L$**
- **$D_L$**
- **$L_{L1}$**
- **$L_{L2}$**
- **$W_{L1}$**
- **$W_{L2}$**

**High-Skill**

- **$W_H$**
- **$S_H$**
- **$D_H$**
- **$L_{H1}$**
- **$L_{H2}$**
- **$W_{H1}$**
- **$W_{H2}$**
Supply and Demand Diagram for an Export Good

- $P^{\text{World}}$: World Price with Trade
- $P_1^{\text{US}}$: U.S. Price without Trade
- $D^{\text{US}}$: Demand in the U.S.
- $S^{\text{US}}$: Supply in the U.S.
- $Q^{\text{US}}_{D}$: U.S. Domestic Demand
- $Q^{\text{US}}_{1}$: U.S. Domestic Supply
- $Q^{\text{US}}_{S}$: Exports

The diagram illustrates how trade affects the price and quantity of an export good in the U.S.
Supply and Demand Diagram for an Import Good

- $P^1_{US}$: U.S. Price without Trade
- $p_{World}$: World Price with Trade
- $Q^US_S$: U.S. Supply
- $Q^US_D$: U.S. Demand
- $Q^US_{Imports}$: Imports
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

LH1LH2

SH

DH2

DH1

WL

W_L1

WL1

SL

DL1

WH

WH1

WH2

D_H2

D_H1
Skill-Biased Technological Change (continued)

- 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 $MRP_L$ for high-skilled workers.

- 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
Skill-Biased Technological Change

**Low-Skill**

- $W_L$
- $S_L$
- $D_{L1}$
- $D_{L2}$
- $W_{L1}$
- $W_{L2}$
- $L_{L2}$
- $L_{L1}$

**High-Skill**

- $W_H$
- $S_H$
- $D_{H1}$
- $D_{H2}$
- $W_{H1}$
- $W_{H2}$
- $L_{H1}$
- $L_{H2}$

Note: This diagram shows the case where the skill-biased technological change includes labor-saving technology that actually reduces the demand for low-skilled workers.
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

Year of 21st birthday

Years of schooling

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

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
A Lower Minimum Wage
Market for Low-Skilled Workers
Federal Minimum Wage

[Graph showing the federal minimum wage over time, with inflation-adjusted wages represented by a green line and non-inflation-adjusted wages by a red line.]

Financial Ramblings
I've got money on my mind...
Changing Social Norms?

CEO-to-worker compensation ratio

In the 350 publicly owned US firms with the largest revenue each year.

20 times larger annual compensation

CEO $819,000
WORKER $39,500

CEO $15,175,000
WORKER $52,100

CEO $20,172,000
WORKER $47,900

SOURCE: Economic Policy Institute

OLIVIA HALL FOR THE BOSTON GLOBE
IV. Possible Remedies for Rising Income Inequality
Increased Education

Low-Skill

High-Skill
Rates of Return on Human Capital Investment

Source: James Heckman, “Skill Formation and the Economics of Investing in Disadvantaged Children.”
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-Skilled Workers
Effect of an Earned-Income Tax Credit
Market for Low-Income Workers

(W_2 + EITC)

EITC
Redistribution

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