LECTURE 16
RISING INEQUALITY
March 15, 2016

I. INCOME DISTRIBUTION IN A MARKET ECONOMY
A. Overview
B. Determinants of income in a market economy
C. There is nothing that guarantees that a market economy will yield a relatively equal income distribution
   1. Differences in wealth (capital)
   2. Differences in skills (labor)

II. SOME FACTS ABOUT INEQUALITY
A. Piketty and Saez’s questions and data
B. Results
C. Possible concerns

III. CHANGES IN LABOR INCOME INEQUALITY
A. Framework
B. Skill-biased technological change
C. Education
D. “The race between education and technology”
E. Globalization
F. Other candidate factors

IV. BRINGING IN CAPITAL INCOME
LECTURE 16
Rising Inequality

March 15, 2016
Announcements

- Our office hours this week will be Wednesday, 12:00–2:00 (instead of 1:00–3:00), in 683 Evans.
I. INCOME DISTRIBUTION IN A MARKET ECONOMY
Determinants of Income in a Market Economy

• Individuals get income from:
  • The quantity and characteristics of the labor they supply.
  • The capital they own (broadly defined – machines, buildings, land, patents, ...).

• Thus, their incomes are determined by:
  • Their labor and capital.
  • The marginal revenue products of that labor and capital.
There Is Nothing That Guarantees That a Market Economy Will Yield a Relatively Equal Income Distribution

- Differences in wealth.
- Differences in skills.
II. SOME FACTS ABOUT INEQUALITY
Piketty and Saez’s Questions and Data

• Concerned with income inequality in the United States, especially at the top of the income distribution.

• Data are from income tax returns.

• Sample period starts with the beginning of the U.S. income tax (1913).
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

<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 of total</td>
<td>Number</td>
</tr>
<tr>
<td>250-300</td>
<td>101</td>
<td>.0027</td>
<td>373</td>
</tr>
<tr>
<td>300-400</td>
<td>86</td>
<td>.0023</td>
<td>272</td>
</tr>
<tr>
<td>400-500</td>
<td>55</td>
<td>.0015</td>
<td>186</td>
</tr>
<tr>
<td>500-750</td>
<td>56</td>
<td>.0015</td>
<td>131</td>
</tr>
<tr>
<td>750-1,000</td>
<td>25</td>
<td>.0007</td>
<td>75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Net income</th>
<th>Amount</th>
<th>Percent of total</th>
<th>Amount</th>
<th>Percent of total</th>
<th>Amount</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>250-300</td>
<td>27,374,302</td>
<td>.25</td>
<td>225,502,764</td>
<td>2.05</td>
<td>10,810,509,292</td>
<td>98.20</td>
</tr>
<tr>
<td>300-400</td>
<td>30,099,524</td>
<td>.27</td>
<td>198,128,462</td>
<td>1.80</td>
<td>10,840,608,816</td>
<td>98.47</td>
</tr>
<tr>
<td>400-500</td>
<td>24,471,169</td>
<td>.22</td>
<td>168,028,938</td>
<td>1.53</td>
<td>10,865,079,985</td>
<td>98.69</td>
</tr>
<tr>
<td>500-750</td>
<td>34,919,569</td>
<td>.32</td>
<td>143,557,769</td>
<td>1.31</td>
<td>10,899,999,554</td>
<td>99.01</td>
</tr>
<tr>
<td>750-1,000</td>
<td>21,780,911</td>
<td>.20</td>
<td>108,638,200</td>
<td>.99</td>
<td>10,921,780,465</td>
<td>99.21</td>
</tr>
</tbody>
</table>
“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.
Source: Piketty and Saez, 2003 updated to 2014. Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.

Source: Piketty and Saez, Figure III (2015 update).
The Capital Income Share in the Top 0.5%, 1916-2013

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.
Source: Table A7, column P99.5-100

Source: Piketty and Saez, Figure V (2015 update).
Wage Income Shares for P90-95, P95-99, and P99-100, 1927-2011

Wage income includes bonuses, and profits from exercised stockoptions.

Source: Piketty and Saez, Figure IX (2015 update).
Possible Concerns

- 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. UNDERSTANDING CHANGES IN LABOR INCOME INEQUALITY
The Markets for Low-Skill and High-Skill Labor

Low-Skill

High-Skill

$W_L$ $W_H$

$L_L$ $L_H$

$S_L$ $S_H$

$D_L$ $D_H$

$W_{L1}$ $W_{H1}$
“Skill-Biased Technological Change”

Note: This considers a case where the technological progress provides a substitute for low-skill workers. Notice that if the change only affected the productivity of high-skill workers, it would still raise inequality.
Greater Education

**Low-Skill**

- **W_L**: Wage for Low-Skill劳动力
- **S_L1, S_L2**: Supply of Low-Skill劳动力
- **D_L**: Demand for Low-Skill劳动力
- **W_L1, W_L2**: Wage rates
- **L_L1, L_L2**: Labour supply

**High-Skill**

- **W_H**: Wage for High-Skill 劳动力
- **S_H1, S_H2**: Supply of High-Skill 劳动力
- **D_H**: Demand for High-Skill 劳动力
- **W_H1, W_H2**: Wage rates
- **L_H1, L_H2**: Labour supply
The Race between Education and Technology

• 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 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).

Globalization

Low-Skill (in the U.S.)

High-Skill (in the U.S.)
Source: www.resilience.org; data from the Bureau of Economic Analysis.
Manufacturing Employment Growth and Exposure to Competition from China

Other Factors that May Have Contributed Somewhat to the Rise in Labor Income Inequality

• “Winner-take-all” markets.

• Changes in social norms.

• Weakening unions and a falling real minimum wage.

• Changes in tax policy.
A Lower Minimum Wage or Lower Negotiated Wage

![Diagram showing the relationship between wage and labor supply and demand. The diagram includes curves for supply (S_L) and demand (D_L) and points for two minimum wages (W_{MIN1} and W_{MIN2}) with corresponding labor quantities (L_{L1} and L_{L2}).]
IV. BRINGING IN CAPITAL INCOME
Wealth (and Hence Capital Income) Is Distributed Much More Unequally than Labor Income

Figure 3. The Labor Share

Note. Nonfinancial Corporate Sector. Calculated as compensation divided by gross value added less taxes on production and imports.
Source. Bureau of Economic Analysis.

“Capital-Biased Technological Change”  
(which increases the marginal product of capital)