We have been studying growth

• Our yardstick is rate of increase of real per capita income
• But that’s measuring changes in a mean
• What about the variance?
• Raises questions of inequality—a big concern today
But not just today: inequality has been with us for long time

- Appears after 2 things happen (archeological evidence)
  - Neolithic revolution $\uparrow$ income
  - States form
- Why? Political elites seize property and rents in return for security
- $< 1900$ only plagues and state collapse reduce
  - Wouldn’t you prefer inequality to remedies?
- Are there other remedies today?
Inequality: What we’ll do

• Reasons it is a concern
  – Ethics, economic and political consequences
  – But perfect equality → bad incentives

• Measuring inequality
  – How do we measure it
  – Trends over time

• Causes behind trends

• Remedies

• Related issue: social mobility
Reasons inequality is a concern

• Contrary view
  – “Of the tendencies that are harmful to sound economics, the most seductive, and in my opinion, the most poisonous, is to focus on questions of distribution...The potential for improving the lives of poor people by finding different ways of distributing current production is nothing compared to the apparently limitless potential of increasing production” Robert Lucas
  – Perfect equality → bad incentives
    • Example: USSR, North Korea
Why inequality does matter

• Ethics
  – What if people make bad choices?
  – But what about their children?
  – Or evidence that poverty itself causes bad choices
    • Hunger and human capital, poverty and behavior, peer group effects

• Political and economic consequences
  – Political and legal instability
  – Economic: inequality may itself slow growth
    • To see how, let’s first discuss how to measure inequality
How do we measure inequality?

- Distinguish wealth and income
  - Related: wealth = accumulated saving
- Common measures (wealth or income)
  - Share of top x% (1%, 0.1%)
  - Kuznets ratios
    - Share of richest x% to poorest x% (10%, 20%)
  - Lorenz curves and Gini ratios
Lorenz curves and Gini ratios

- Brazil curve everywhere to right Hungary curve
  - Brazil more unequal
- Measure generalizes
  - Nice properties
  - Problems if curves cross
- Gini coefficient summarizes Lorenz curve
  - = shaded area/yellow area
  - 0.27 Hungary, 0.63 Brazil
  - Bigger Gini $\rightarrow$ more unequal

Lorenz curve for Hungary (red) 1993; Brazil (green) 1989
## Gini coefficients income 2005-2009

<table>
<thead>
<tr>
<th>Country</th>
<th>Gini coefficient * 100</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>55</td>
<td>2007</td>
</tr>
<tr>
<td>Mexico</td>
<td>48</td>
<td>2008</td>
</tr>
<tr>
<td>USA</td>
<td>42</td>
<td>2007</td>
</tr>
<tr>
<td>UK</td>
<td>38</td>
<td>2007</td>
</tr>
<tr>
<td>France</td>
<td>32</td>
<td>2005</td>
</tr>
<tr>
<td>Germany</td>
<td>32</td>
<td>2007</td>
</tr>
<tr>
<td>Denmark</td>
<td>26</td>
<td>2007</td>
</tr>
</tbody>
</table>

Latin America usually high; US used to be low, now rising. European countries usually low.
Now back to another reason for studying inequality

• Namely, impact it can have on growth itself
• Market failure when poor lack collateral
  – Bars way to potential entrepreneurs
  – Limits human capital
    • Can’t borrow to finance education
• Also creates bad political incentives
What are bad political incentives?

• To avoid redistribution, rich
  – restrict franchise, cut educational funding

• Policies limit
  – human capital accumulation, invention, financial development
  – examples from Latin America

• Institutions never become inclusive
Effect in European colonies

• More rapid growth in US and Canada than rest of Americas
  – not culture, language
  – rather effect of inequality and impact on human capital

• Recall great reversal of European colonization
  – If colonization ↑ inequality, bad institutions result
    • Acemoglu et al.; Engerman and Sokoloff; Dell says no

• Could also be barriers to technology
Great reversal in ex colonies

Claim: great reversal is the result of "extractive" institutions that preserve inequality. Problems: data, instrument
Now to trends in inequality

Income inequality falls in depression WWII: adverse shocks, taxation. It is rising again in UK.
Income inequality is falling in France, Denmark.
Not clear if it is starting to rise again in Germany
Definitely rising in USA
Why clear upturn in US and UK?

• Human capital and changing demand for skills?
  – Decline of factory work
  – But that can’t explain US and UK difference
  – More likely to affect 10/90 division, not 1/99

• Pernicious effects of poverty?
  – Child care, transportation, peer groups, non cognitive skills; again, though, not peculiar to US & UK
Maybe it’s taxes: US and UK cut top marginal tax rates
A. Average CEO compensation

Compare taxes elsewhere

Elasticity = 1.97 (.27)
So are tax rates the explanation?

- Claim: lower taxes increases incentive to extract rent from corporations
  - Piketty, Saez, Stantcheva argument
- Fits their data, but not necessarily other data
  - Frydman Mollow US evidence on individual executive compensation 1946-2005
    - Total compensation, but may miss capital gains
    - They control for firm characteristics (size, etc.)
Other factors at work too

• Unions and norms? In US evidence supports
  – Local union membership 1940s correlated with less inequality 1940-1960
    • Conditional on local observables and trends
    • Not due to sorting by workers or firm movement
  – But doesn’t work in other countries

• ↑ subsidy + protection from competition in domestic services US & UK versus rest world
  – finance, health care, law
  – Top 1% not top 0.1%
Remedies for inequality

• Ancient remedies terrible (disease, state collapse)

• Social spending
  – Quality education
  – Quality child care, transportation (as in Finland)

• Taxes to redistribute?
  – Strong negative correlation between top tax rates and 1% income shares
  – Effect on growth?
    • No effect on growth

• Work to change norms (difficult)
Figure 3: Changes in Top Income Shares and Top Marginal Tax Rates
A. Growth and Change in Top Marginal Tax Rate
B. Growth (adjusted for initial 1960 GDP)

The scatter plot shows the relationship between change in top marginal tax rate and per capita real annual growth for various countries. The x-axis represents the change in top marginal tax rate in points, while the y-axis represents GDP per capita real annual growth in percent.

Countries included in the plot are: US, UK, Norway, Ireland, Japan, France, Netherlands, Australia, Italy, Finland, Germany, Sweden, Spain, Denmark, Portugal, Switzerland, and NZ.
Related issue: social mobility—topic of current interest in Europe and USA

• Example: claims that intergenerational mobility always small, wherever we look (Clark)
  – Europe in past centuries, Asia, US:
    • Descendants of rich in Florence 1427 are rich today
  – Based on regressions of $\ln($son’s wage or status$)$ on $\ln($father’s wage or status$)$

• Claims government programs do not affect
  – Implications: they don’t help

• But that assumes his evidence can be trusted
Clark’s additional claim--controversial

• Results driven by genetic inheritance within families: explains 64% variance
  – Or cultural: how to be thrifty, obey in school

• But Clark’s evidence suffers from fatal econometric problems
  – Relationship highly non linear; regressing rank on rank much better method (Chetty, et al.)
  – Econometric assumptions dubious
  – Clark would get same result in apartheid society and wrongly attribute it to genetics or cultural inheritance.
And other evidence suggests we can promote mobility (US evidence from Chetty et al.)

- Reduce income inequality and residential segregation
- Improve primary schools
- Encourage greater family stability
- In other words, same measures that would reduced inequality.
Inequality and social mobility

• Inequality is a concern
  – Can have bad consequences for growth
  – Politically, ethically too

• Causes for high inequality
  – Wealth inheritance, pernicious effects of poverty
  – Changes in labor/factor markets
  – Bad institutions
  – Taxes, protection, ↓ unions in rich countries

• Remedies: social spending, taxes
  – No need to give up economic growth
  – Boost social mobility too