The Long-Run Determinants of Inequality: What Can We Learn From Top Income Data?

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(paper at: www.anst.uu.se/danwa175)

XXIV International Conference of the “Giordano Dell’Amore” Observatory
on the relationship between law and economics,

October 27, 2011
The issues

- Does economic growth benefit everyone?
- How does trade openness influence inequality?
- Is it really the poor that mainly gain from financial development – or is it the rich?
- What is the role of the state in all this?
This presentation

1. A long-run perspective
   - New inequality dataset covering most of 20th C.

2. What accounts for changes in inequality?
   - Trade, Finance, Growth, Redistribution?

3. Are patterns same for all?
   - High-income vs Low-income countries

4. Specific issues
   - Role of financial crises
Theories explaining top income shares

- **Economic growth**
  - Top incomes closely attached to economy (bonuses)

- **Trade openness**
  - Standard story: Capitalists in rich countries gain
  - ”Superstars” gain from globalized labor markets

- **Financial development**
  - Typically regarded as *pro-poor* (reduced barriers)
  - But it can be *pro-rich* (power, early stages)

- **Redistribution**
  - May or may not reduce top income shares
Top income shares – a new source

- Traditional lack of long-run inequality evidence
- A solution: *historical tax data*
  - Available since early 20th C.  Long-run series
  - Available in most countries  cross-country comp.
  - Primarily observations of the highest incomes
- We focus on three groups in the distribution:
  - "The Rich" (Top 1 percentile)
  - "The Upper Middle Class" (Top10–1 percentiles)
  - "The Rest" (Bottom 90 percentiles)
Differences across groups (Sweden 2008)
Top decile share over time: Sweden
"Upper Middle Class" (Top 10-1%) and "Rich" (Top 1%) in Sweden

Source: Roine and Waldenström (2008, updates)
Top 10-1% and Top 1% in the U.S.

Source: Piketty and Saez (2003, updates)
Data on income inequality

- **Income data**
  - *Gross market income* bef. most taxes and transfers
    - Includes labor, capital, business income
    - Source: Past studies (cf Atkinson/Piketty 2007, 2010)

- **Computation of top income shares**
  - The share of total income that goes to the top 10, 5, 1, 0.1, etc % of all *potential* income earners.
  - **Three variables:** *Top 1%, Top 10-1%, Bottom 90%*
Top 1%: "The rich"

Waldenström: Long-run determinants of inequality
Top 10-1%: "Upper middle class"

Waldenström: Long-run determinants of inequality
Potential determinants

- **GDP/capita** and **Population**
  - Source: Maddison

- **Financial development**: Bank deposits + Stock market
  - Sources: Mitchell, IFS, FSD, Bordo, Rajan & Zingales

- **Trade openness**: \((\text{Exports} + \text{Imports})/\text{GDP}\)
  - Sources: Mitchell, López-Córdoba & Meissner, Bordo
  - Robustness: *De jure* openness (Clemens/Williamson; IMF)

- **Central government spending**
Potential inequality determinants

Waldenström: Long-run determinants of inequality
Income tax rates (top rates)

Waldenström: Long-run determinants of inequality
Empirical methodology

• Log-linear regression model:
  - Income shares (Top1, Top10-1, Bot90) are regressed on the potential determinants + controls

• No firm claims on causal relationships

• Technicalities:
  - Two estimators:
    • Dynamic first-difference (DFD)
    • First-difference GLS (FDGLS)
  - Control for unobserved time-invariant effects and country-specific trends
## Baseline results

<table>
<thead>
<tr>
<th></th>
<th>Top 1%</th>
<th>Top 10-1%</th>
<th>Bottom 90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>0.98***</td>
<td>1.27***</td>
<td>0.17</td>
</tr>
<tr>
<td>Trade</td>
<td>-8.80***</td>
<td>-2.31</td>
<td>-0.20</td>
</tr>
<tr>
<td>Growth</td>
<td>5.81***</td>
<td>6.56***</td>
<td>-8.82***</td>
</tr>
<tr>
<td>Gov.Spend</td>
<td>5.98</td>
<td>3.62</td>
<td>-16.51***</td>
</tr>
<tr>
<td>Taxation</td>
<td>-4.39***</td>
<td>-3.18**</td>
<td></td>
</tr>
<tr>
<td>Obs</td>
<td>126</td>
<td>92</td>
<td>99</td>
</tr>
<tr>
<td>Controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>N countries</td>
<td>14</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

Waldenström: Long-run determinants of inequality
## Level of development

<table>
<thead>
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<th>Top 1%</th>
<th>Top 10-1%</th>
<th>Bottom 90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth×Low</td>
<td>5.07***</td>
<td></td>
<td>4.53</td>
</tr>
<tr>
<td>Growth×Med</td>
<td>6.41***</td>
<td></td>
<td>5.98</td>
</tr>
<tr>
<td>Growth×High</td>
<td>2.62</td>
<td></td>
<td>8.26*</td>
</tr>
<tr>
<td>Finance×Low</td>
<td>1.65*</td>
<td></td>
<td>2.08</td>
</tr>
<tr>
<td>Finance×Med</td>
<td>0.88*</td>
<td></td>
<td>–1.02</td>
</tr>
<tr>
<td>Finance×High</td>
<td>0.86*</td>
<td></td>
<td>–0.88</td>
</tr>
<tr>
<td>F: Low=Med</td>
<td>0.31</td>
<td>0.45</td>
<td>0.74</td>
</tr>
<tr>
<td>F: Low=High</td>
<td>0.25</td>
<td>0.42</td>
<td>0.45</td>
</tr>
<tr>
<td>F: Med=High</td>
<td>0.07</td>
<td>0.98</td>
<td>0.59</td>
</tr>
<tr>
<td>Obs</td>
<td>126</td>
<td>126</td>
<td>99</td>
</tr>
<tr>
<td>N countries</td>
<td>14</td>
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## Do financial crises matter?

<table>
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<tr>
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<th>Top 1%</th>
<th>Top 10-1%</th>
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<tbody>
<tr>
<td><strong>Bank crisis</strong></td>
<td>-1.07***</td>
<td>-1.08***</td>
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<td></td>
<td>0.33</td>
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<td><strong>Currency crisis</strong></td>
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<td><strong>Obs</strong></td>
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<td>171</td>
</tr>
<tr>
<td></td>
<td>132</td>
<td>132</td>
</tr>
<tr>
<td><strong>Controls</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
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<td>Yes</td>
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Crisis data from Bordo et al. (2001) and Laeven and Valencia (2008)

*Waldenström: Long-run determinants of inequality*
Extensions and robustness

• **Extensions**
  - Role of democracy (Polity IV - *No role*)
  - Role of technology (Patents - *No role*; Share of GDP in agriculture - *No role*)

• **Robustness**
  - We use top shares *within* the top
    • Ex: Top1/Top10 and Top0.1/Top1
  - Restrict analysis to postwar period
    • Rules out influence from Great Depression
  - *Results in line with main analysis*
Conclusions

1. **Finance is strongly pro-rich**
   - Financial crises associated with reduced top shares

2. **Trade openness has no clear impact on inequality**

3. **Economic growth pos. correlated with top shares; neg. correlated with upper middle class share**
   - Extends Dew-Becker & Gordon (2005, 2007)
   - No sign of "global labor market" for elites

\textit{Waldenström: Long-run determinants of inequality}
Main findings in top income literature

- Similarities across countries (mostly)
  - 1900-1980: Substantially reduced inequality

- Potential determinants:
  - Shocks to capital income/wealth (pre-WWII)
  - Progressive taxation (postwar period)
  - Globalized labor markets (1980- , esp. Anglo-Saxon)