Trends in global income inequality and their political implications

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LIS Center; Graduate School City University of New York
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A. National inequalities mostly increased
### Ginis in the late 1980s and around now

<table>
<thead>
<tr>
<th></th>
<th>1985-90</th>
<th>After 2008</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Gini</strong></td>
<td>36.3</td>
<td>38.8</td>
<td>+2.5</td>
</tr>
<tr>
<td><strong>Pop-weighted Gini</strong></td>
<td>33.9</td>
<td>37.3</td>
<td>+3.4</td>
</tr>
<tr>
<td><strong>GDP-weighted Gini</strong></td>
<td>32.2</td>
<td>36.4</td>
<td>+4.2</td>
</tr>
<tr>
<td><strong>Countries with higher Ginis</strong></td>
<td>32.0</td>
<td>36.2</td>
<td>+4.5</td>
</tr>
<tr>
<td><strong>Countries with lower Ginis</strong></td>
<td>42.8</td>
<td>39.5</td>
<td>-3.3</td>
</tr>
</tbody>
</table>

From `final-complete3.dta` and `key_variables_calcul2.do` (lines 2 and 3; rest from AlltheGinis)
Ginis in the late 1980s and around now

twoway (scatter bbb aaa if year==2000, mlabel(contcod) msize(vlarge)) (function y=x, range(20 60) legend(off) xtitle(Gini between 1985 and 1990) ytitle(Gini after 2008)) using allginis.dta
Ginis in 1988 and 2008 (population-weighted countries)
Convergence of countries’ Gini coefficients: an empirical observation without theoretical explanation

```
twoway (scatter change_gini gini_pre1980 if nvals==1, mlabel(contcod)) (lfit change_gini gini_pre1980, yline(0, lpattern(dash)) ytitle(change in Gini after 1980) legend(off))
Using Allthe Ginis.dta
```

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Market, gross and disposable income
Ginis in the US and Germany

Define_variables.do using data_voter_checked.dta

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Issues raised by growing national inequalities

• Social separatism of the rich
• Hollowing out of the middle classes
• Inequality as one of the causes of the global financial crisis
• **Perception** of inequality outstrips real increase because of globalization, role of social media and political (crony) capitalism (example of Egypt)
• Hidden assets of the rich

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Some long-term examples set in the Kuznets framework
Inequality (Gini) in the USA 1929-2009  
(gross income across households)

From ydisrt/us_and_uk.xls
Kuznets and Piketty “frames”

Ginis for England/UK and the United States in a very long run

From uk_and_usa.xls
Contemporary examples of Brazil and China: moving on the descending portion of the Kuznets curve

Brazil 1960-2010

China, 1967-2007

twoway (scatter Ginialli lngdpppp if contcod=="BRA", connect(l) ylabel(40(10)60) xtitle(2000 6000 12000) ytitle(Gini) xtitle(ln GDP per capita)) (qfit Ginialli lngdpppp if contcod=="BRA", lwidth(thick))
From gdppppreg4.dta

twoway (scatter Ginialli lngdpppp if contcod=="CHN" & year>1960, connect(l) ylabel(40(10)60) xtitle(2000 6000 12000) ytitle(Gini) xtitle(ln GDP per capita)) (qfit Ginialli lngdpppp if contcod=="CHN" & year>1960, lwidth(thick))
From gdppppreg4.dta
B. Between national inequalities remained very high even if decreasing
Distribution of people by income of the country where they live: emptiness in the middle (year 2013; 2011 PPPs)
Different countries and income classes in global income distribution in 2008

From calcu08.dta

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Countries with more than 1% of their population in top global percentile (above $PPP 72,000 per capita in 2008 prices)

From summary_data.xls
C. Global inequality is the product of within- and between-county inequalities. How did it change in the last 60 years?
Essentially, global inequality is determined by three forces

- What happens to within-country income distributions?
- Is there a catching up of poor countries?
- Are mean incomes of populous & large countries (China, India) growing faster or slower than the rich world?
Global and international inequality after World War II

Concept 2: 1960-1980 from Bourguignon & Morrisson

Defines do using gdpmpreg5.dta

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Concept 2 inequality with 2011 PPPs and without China and India

![Graph showing inequality trends with and without China and India](image_url)

- **All countries**
- **Without China**
- **Without India and China**

<table>
<thead>
<tr>
<th>Year</th>
<th>Without India and China</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>.45</td>
</tr>
<tr>
<td>1960</td>
<td>.5</td>
</tr>
<tr>
<td>1980</td>
<td>.55</td>
</tr>
<tr>
<td>2000</td>
<td>.6</td>
</tr>
<tr>
<td>2020</td>
<td>.65</td>
</tr>
</tbody>
</table>

Definitions:
- `gdppppreg5.dta`: A dataset used in the analysis.
- **Branko Milanovic**: The author of the analysis.
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>48</td>
<td>76</td>
<td>67</td>
<td>77</td>
<td>78</td>
<td>78</td>
<td>71</td>
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<tr>
<td>Asia</td>
<td>93</td>
<td>95</td>
<td>94</td>
<td>96</td>
<td>94</td>
<td>98</td>
<td>96</td>
</tr>
<tr>
<td>E.Europe</td>
<td>99</td>
<td>95</td>
<td>100</td>
<td>97</td>
<td>93</td>
<td>92</td>
<td>87</td>
</tr>
<tr>
<td>LAC</td>
<td>87</td>
<td>92</td>
<td>93</td>
<td>96</td>
<td>96</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>WENAO</td>
<td>92</td>
<td>95</td>
<td>97</td>
<td>99</td>
<td>99</td>
<td>97</td>
<td>95</td>
</tr>
<tr>
<td>World</td>
<td>87</td>
<td>92</td>
<td>92</td>
<td>94</td>
<td>93</td>
<td>94</td>
<td>92</td>
</tr>
</tbody>
</table>
Three important technical issues in the measurement of global inequality

• The ever-changing PPPs in particular for populous countries like China and India

• The increasing discrepancy between GDP per capita and HS means, or more importantly consumption per capita and HS means

• Inadequate coverage of top 1% (related also to the previous point)
The issue of PPPs
The effect of the new PPPs on countries’ GDP per capita (compared to the US level)
## The effect of new PPPs

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP per capita increase (in %)</th>
<th>GDP per capita increase population-weighted (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>90</td>
<td>---</td>
</tr>
<tr>
<td>Pakistan</td>
<td>66</td>
<td>---</td>
</tr>
<tr>
<td>Russia</td>
<td>35</td>
<td>---</td>
</tr>
<tr>
<td>India</td>
<td>26</td>
<td>---</td>
</tr>
<tr>
<td>China</td>
<td>17</td>
<td>---</td>
</tr>
<tr>
<td>Africa</td>
<td>23</td>
<td>32</td>
</tr>
<tr>
<td>Asia</td>
<td>48</td>
<td>33</td>
</tr>
<tr>
<td>Latin America</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td>WENAO</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>
Global income inequality using nominal dollars

From two_concepts_exrate.do using Global_new5.dta
The gap between national accounts and household surveys
Both the level and change: Use of GDP per capita gives a lower lever and a faster decrease of global inequality.

<table>
<thead>
<tr>
<th>Year</th>
<th>Gini</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>0.45</td>
</tr>
<tr>
<td>1995</td>
<td>0.5</td>
</tr>
<tr>
<td>2000</td>
<td>0.55</td>
</tr>
<tr>
<td>2005</td>
<td>0.6</td>
</tr>
<tr>
<td>2010</td>
<td>0.65</td>
</tr>
</tbody>
</table>

HS means--countries in HS sample
GDPs pc countries in HS sample
usual Concept 2

Defines.do based on gdpppreg5.dta
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How global inequality changes with different definitions of income

Global inequality

Step 1

GDP ppp

Consumption

Survey mean

Step 2

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Step 1 driven by low consumption shares in China and India

(although on an unweighted base C/GDP decreases with GDP)

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twoway scatter cons_gdp gdpppp if group==1 & cons_gdp<1.4 [w=totpop], xscale(log) xtitle(GDP per capita in ppp) xlabel(1000 10000 50000)
ytitle(share of consumption in GDP) title(C/GDP from national accounts in year 2008)
using final08.dta
Step 2. No clear (weighted) relationship between survey capture and NA consumption

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The issue of top underestimation
Rising HS/NA gap and top underestimation

• If these two problems are really just one & the same problem.
• Assign the entire positive (NA consumption – HS mean) gap to national top deciles
• Use Pareto interpolation to “elongate” the distribution
• No a priori guarantee that global Gini will increase
## Gini: accounting for missing top incomes

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys only</td>
<td>72.5</td>
<td>71.8</td>
<td>71.9</td>
<td>71.9</td>
<td>69.6</td>
</tr>
<tr>
<td>NAC instead of survey mean</td>
<td>71.5</td>
<td>70.5</td>
<td>70.6</td>
<td>70.7</td>
<td>67.6</td>
</tr>
<tr>
<td>NAC with Pareto</td>
<td>71.8</td>
<td>70.8</td>
<td>71.0</td>
<td>71.1</td>
<td>68.0</td>
</tr>
<tr>
<td>NAC with top-heavy Pareto</td>
<td>76.3</td>
<td>76.1</td>
<td>77.2</td>
<td>78.1</td>
<td>75.9</td>
</tr>
</tbody>
</table>
The results of various adjustments

- Replacing HS survey mean with private consumption from NA reduces Gini by 1 to 2 points.
- Elongating such a distribution (that is, without changing the consumption mean) adds less than ½ Gini point.
- But doing the top-heavy adjustment (NA-HS gap ascribed to top 10% only) adds between 5 and 7 Gini points.
- It also almost eliminates the decrease in global Gini between 1988 and 2008.
How Global Gini in 2008 changes with different adjustments

Increase in global Gini with each “marginal” adjustment

- Allocate the gap proportionally along each national income distributions
- Allocate the gap proportionately and add a Pareto “elongation”
- Allocate the gap to top 10% and add Pareto “elongation”
With full adjustment (allocation to the top 10% + Pareto) Gini decline almost fully disappears.
D. How has the world changed between the fall of the Berlin Wall and the Great Recession
[based on joint work with Christoph Lakner]
Real income growth at various percentiles of global income distribution, 1988-2008 (in 2005 PPPs)

From twenty_years\final\summary_data

Estimated at mean-over-mean

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X “China’s middle class”

X “US lower middle class”

Real PPP income change (in percent)

Percentile of global income distribution

PPP2

PPP4.5

PPP12

PPP 110
Real income gains (in $PPP) at different percentile of global income distribution 1988-2008

- World
- Without China
Quasi non-anonymous GIC: Average growth rate 1988-2008 for different percentiles of the 1988 global income distribution

Quasi-non-anonymous growth incidence curve, 1988-2008

Solid line shows predicted value from kernel-weighted local polynomial regression (bw=0.05, epanechnikov, cube polynomial). The horizontal line shows growth rate in mean of 1.72%. Only countries observed in 1988 & 2008 (N=63) included.
Growth incidence curve (1988-2008) estimated at percentiles of the income distribution

Using my_graphs.do

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Mean-on-mean
Distribution of the global absolute gains in income, 1988-2008: more than ½ of the gains went to the top 5%

From summary_data.xls
Annual per capita after-tax income in international dollars

US 2nd decile

Chinese 8th urban decile

From summary_data.xls
Global income distributions in 1988 and 2008

Emerging global “middle class” between $3 and $16

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Increasing gains for the rich with a widening urban-rural gap

Urban and rural China

Urban and rural Indonesia

From key_variables_calcul2.do
E. Issues of justice and politics

1. Citizenship rent
2. Migration
3. Hollowing out of the middle classes
Global inequality of opportunity

- Regressing (log) average incomes of 118 countries’ percentiles (11,800 data points) against country dummies “explains” 77% of variability of income percentiles
- Where you live is the most important determinant of your income; for 97% of people in the world: birth=citizenship.
- Citizenship rent.
Is citizenship a rent?

• If most of our income is determined by citizenship, then there is little equality of opportunity *globally* and citizenship is a rent (unrelated to individual desert, effort)

• **Key issue:** Is global equality of opportunity something that we ought to be concerned or not?

• Does national self-determination dispenses with the need to worry about GEO?
The logic of the argument

• Citizenship is a morally-arbitrary circumstance, independent of individual effort
• It can be regarded as a rent (shared by all members of a community)
• Are citizenship rents globally acceptable or not?
• Political philosophy arguments pro (social contract; statist theory; self-determination) and contra (cosmopolitan approach)
The Rawlsian world

• For Rawls, global optimum distribution of income is simply a sum of national optimal income distributions

• Why Rawlsian world will remain unequal?
Global Ginis in Real World, Rawlsian World, Convergence World...and Shangri-La World (Theil 0; year 2008)

<table>
<thead>
<tr>
<th>Mean country incomes</th>
<th>All equal</th>
<th>Different (as now)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual incomes within country</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All equal</td>
<td>0</td>
<td>68 (all country Ginis=0)</td>
</tr>
<tr>
<td>Different (as now)</td>
<td>30 (all mean incomes same; all country Ginis as now)</td>
<td>98</td>
</tr>
</tbody>
</table>
Conclusion

• Working on equalization of within-national inequalities will not be sufficient to significantly reduce global inequality

• Faster growth of poorer countries is key and also…
Migration: a different way to reduce global inequality and citizenship rent

• A new view of development: Development is increased income for poor people regardless of where they are, in their countries of birth or elsewhere

• Migration and LDC growth thus become the two equivalent instruments for development
A migrant point of view: trade-off between country’s mean income and its inequality

How much is one Gini point change worth in terms of mean country income?

From interyd..\ventil_vs_country.xls

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Political issue: Global vs. national level

• Our income and employment is increasingly determined by global forces
• But political decision-making still takes place at the level of the nation-state
• If stagnation of income of rich countries’ middle classes continues, will they continue to support globalization?
• Two dangers: populism and plutocracy
• To avert both, need for within-national redistributions: those who lose have to be helped

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Final conclusion

• To reduce global inequality: fast growth of poor countries + migration

• To preserve good aspects of globalization: redistribution within rich countries

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Additional slides
H. Global inequality over the long-run of history
Global income inequality, 1820-2008
(Source: Bourguignon-Morrisson and Milanovic; 1990 PPPs)
Shares of global income received by top 10% and bottom 60% of world population

Year | Top 10% (B-M data) | Top 10% (L-M data) | Bottom 60% (B-M data) | Bottom 60% (L-M data)
--- | --- | --- | --- | ---
1800 | 42% | 40% | 58% | 60%
1850 | 45% | 43% | 55% | 58%
1900 | 48% | 46% | 52% | 55%
1950 | 51% | 48% | 49% | 52%
2000 | 54% | 50% | 46% | 49%
2050 | 57% | 51% | 44% | 47%

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A non-Marxist world

• Over the long run, decreasing importance of within-country inequalities despite some reversal in the last quarter century
• Increasing importance of between-country inequalities (but with some hopeful signs in the last five years, before the current crisis),
• Global division between countries more than between classes
Composition of global inequality changed: from being mostly due to “class” (within-national), today it is mostly due to “location” (where people live).

Very high but decreasing importance of location in global inequality

From thepast.xls under c:\history