Inequality ... of Opportunity and Economic Performance

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1. Race between education and technology (Goldin and Katz, 2010): the raise of inequality is not a concern for growth (Mankiw, 2013).

2. Institutions are taken by top incomes so rent-seeking is pervasive (Stiglitz, 2012): the implied increase in inequality is harmful for growth (Piketty et al., 2011).
Inequality is important not only for equity (social justice) but also for efficiency (growth, employment, allocation) so

Is inequality good or bad for economic performance?

- Until 80-90’s: inequality is good (Kaldor’s savings and Mirrlees’s unobserved effort arguments).
- After, inequality is bad because:
  - Political instability [Gupta, 90; Keefer-Knack, 02]
  - Worse quality of institutions [Acemoglu-Robinson, 09; Stiglitz, 12]
  - Credit market channel: misallocation of human capital and entrepreneurship [Galor-Zeira, 93; Banerjee-Newman, 93]
  - Higher distortionary redistribution [Alesina-Rodrick, 94]
  - Fertility [Kremer-Chen, 02]

What about the empirical literature? Inconclusiveness (Banerjee and Duflo, 2003)

Voitchovsky (05): inequality has offsetting avenues affecting growth in opposite ways
The Inequality of Opportunity literature (Roemer, 93, 98; Fleurbaey, 08): Overall inequality is a composite measure of different types of inequality …

- Inequality of opportunity (IO): due to factors beyond individuals’ control (circumstances)
  - Parental background (intergenerational mobility is a particular case of IO)
  - Gender, race, initial health endowments, etc.
  - Macroeconomic and social conditions of the place of birth

- Inequality of effort (IE): free-will actions under (at least partial) own responsibility.

- Other components: inherent talent or ability and (brute) luck.

Message for fairness: society must avoid IO (‘level the playing field’) and leave “pure” effort untouched.

Hypothesis

The impact of overall inequality on economic performance is ambiguous because the two main components of inequality may have opposite effects on growth: IO negative and IE positive.
Marrero & Rodríguez (“IO and growth”, J.Dev.Ec, 13) [panel of 26 U.S. states from the PSID and 3 decades (70-00)] finds robust evidence of this hypothesis.

For (adjusted) total inequality: positive [but little significance]

Decomposing overall inequality into IO (lower bound) and IE …
**Increasing IE** by 1std raises 10-yrs growth in 2.3-4.1 p.p. (average was 20.2% per decade in 70-00), and 209-834 real US$/person (average was 14,363 US$/person in 70-00).

**Decreasing (lower-bound) IO** by 1std raises 10-yrs growth in 1.1-1.7 p.p. and 124-229 real US$/person.
These results are theoretically grounded in Marrero and Rodríguez (2014): overlapping generation economy with human capital as the engine of growth.

From this model, we obtain the following reduced income growth equation:

\[
GY_{it} = \alpha_i + \phi T_t - \beta \ln y_{it-s} - \varphi_{IO} MLD(a) + \varphi_{IE} MLD(\gamma)
\]

GY: growth of real GDP per capita

T: year

y: real GDP per capita

- IO has a negative effect on growth because marginal returns to human capital are higher for those individuals with less favorable circumstances.

- IE has a positive effect on growth because marginal returns to human capital are larger for those individuals with a lower aversion to effort (higher free-will).
Reinterpretation of results

1. Birsdall et al. (1995): If controls are related with IE, total inequality should reflect IO and vice versa (see below)

2. Barro (2000): the IO ratio is higher for less developed countries

3. Acemoglu et al. (2014) & Acemoglu et al. (2015) ... : “Democracy may be bringing new opportunities and economic change, which may increase inequality [i.e. increase of IE], while simultaneously lowering barriers to entry and investing in public goods [i.e. reduction of IO], which may reduce ineq.”
Any other empirical evidence?

For the U.S.:

- **Hsieh et al.** (2013): reducing occupational barriers in race and gender explains 15-20% of growth in 60-08.
- **Bradbury-Triest** (2014): strong negative effect of absolute immobility on growth
- **Marrero, Rodríguez and van de Weide** (2015): avoiding potential sampling errors in M&R-13, using alternative measures of IO and estimating growth by quantiles find a robust result:

  The negative impact of IO on growth is concentrated at the bottom-mid of the distribution

  (this effect explains the negative impact of total inequality on these quantiles found in van de Weide and Milanovic, 14)

Any cross-country evidence?


2. Ferreira et al. (2014): there is no evidence that IO is responsible for the negative impact of inequality (I&E-sample); the negative impact of IO on growth is not robust (DHS-sample). A possible explanation:

“The impossibility of observing all circumstances could bias the estimates by contaminating the residual component (IE) and diminishing the significance of IO”

To deal with the problem of scarcity and quality of household survey databases we propose an alternative empirical approach:

- **Step 1**: collect Ginis (from UN-WIID2 & Povcal-Net [López-Servén, 2012] [also SWIID (Solt, 2009)]) and macro-factors (fertility rate, corruption, military in power, democracy, ethnic-linguistic tensions and religious tensions) from the Political Risk Module (ICRD, 1984-2010) and WB-database.
Step 2: “isolate” a “lower bound” of the IO component:

\[ Gini_{jt} = \alpha + \gamma X_{jt} + v_{jt} \Rightarrow OLS \Rightarrow \]

Fitted Gini: \( IO_{jt} = \hat{\alpha} + \hat{\gamma} X_{jt} \)

Residual Gini: \( IE_{jt} = \hat{v}_{jt} \)

\[
\hat{Gini} = 0.292^{***} + 0.0248^{***} Fertility + 0.0149^{***} Corruption + 0.0079^{**} Military \\
+ 0.0008 Democracy - 0.0018 Ethnic - 0.0219^{***} Religion
\]

\( N = 474 \) Obs; \( adj. R^2 = 0.30 \)

Step 3: run a sequence of regressions and check tests (focus on IO)

\[ Growth_{it} = \alpha_i + \phi T_i - \beta \ln y_{it-s} - \delta_0 Gini_{it-s} + \epsilon_{it} \quad \delta_0 = 0? \]

\[ Growth_{it} = \alpha_i + \phi T_i - \beta \ln y_{it-s} + \delta_{01} Gini_{it-s} + \delta_{10} IO_{it-s} + \epsilon_{it} \quad \delta_{10} < 0? \]

\[ Growth_{it} = \alpha_i + \phi T_i - \beta \ln y_{it-s} + \delta_{02} Gini_{it-s} + \delta_{20} IE_{it-s} + \epsilon_{it} \quad \delta_{02} < 0? \]

\[ Growth_{it} = \alpha_i + \phi T_i - \beta \ln y_{it-s} + \delta_{11} IO_{it-s} + \delta_{21} IE_{it-s} + \epsilon_{it} \quad \delta_{11} < 0? \]
Taking 20-year intervals to measure long-run growth (1990-2010, 69 countries):

- Slightly >0 for total Ineq
- More >0 for IE (residual Ineq)
- <0 and significant for IO (fitted Gini)
Results are robust to:

- The set of **macro variables included in the Gini decomposition** (Appendix)
- The **set of controls** included in the growth regression (including the lagged of human capital, investment prices, government size and degree of openness).

### The effect of inequality of outcomes and opportunity on growth (20 years: 1990-2010)

(OLS; decomposition (b) of the Gini coefficient)

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<td>L4.Gini</td>
<td>-0.0299</td>
<td>-0.0248</td>
<td>-0.131**</td>
<td>-0.0109</td>
<td>-0.00423</td>
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<td>L4.IO</td>
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<td>-0.107**</td>
<td>-0.131**</td>
<td>-0.118**</td>
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<td>(-2.42)</td>
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<td>Ext. Forbes model (with reg. dummies)</td>
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<td>adj. R-sq</td>
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<td>0.251</td>
<td>0.251</td>
<td>0.314</td>
<td>0.365</td>
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- The **temporal period of growth**: having panel data we use not only Pool-OLS but also FE and IV for 10-year growth and System-GMM for 5-year growth (Appendix).
Concluding remarks: Policy

- Be aware of redistribution: it might affect total inequality without knowing which type of inequality is being affected
  - **Ostry et al. (2014)**: some redistribution can reduce IO (and increase growth), but too much redistribution might also reduce IE (deterring growth)

- Policy should **focus on reducing IO** (promotes equality & growth):
  - Affirmative-action policies applied to people with bad circumstances
  - Lower constraints in credit markets to good students and entrepreneurs with bad circumstances
  - Improve the provision/quality of public health and public education
  - Reduce corruption, unnecessary bureaucracy, guarantee property rights, access to insurance against risk

**Policies should focus on reducing IO (it promotes equity and growth) while improving incentives to effort!**
Concluding Remarks: a warning!

H1. IO is harmful for Growth

H2. Growth seems to be negative for IO (Marrero and Rodríguez, 2012, for US)

How to break this?
THANKS!

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