Global Firm Dynamic, Productivity, (Mis)Allocations

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The Facts of Economic Growth

Friday, August 27, 2021
Outline

• **Part I:** Some facts
  - Economic growth
  - The world income distribution
  - Beyond GDP

• **Part II:** Matlab and the Penn World Tables
  - Reading the data
  - Making graphs
  - Matlab code
Some Facts of Economic Growth

Handbook of Economic Growth, 2016
The Spread of Economic Growth since 1980

GDP PER PERSON (US=100)

YEAR


United States

Japan

Western Europe

Russia

Brazil

China

India

Sub-Saharan Africa
Average Annual Hours Worked

AVERAGE ANNUAL HOURS WORKED

Bick, Lagakos, Fuchs-Schundeln, 2018
Boppart and Krusell, 2020

S. Korea
Japan
U.S.
France
U.K.
In 1960, 2 out of 3 people lived in countries with a per capita GDP < 5% of the 2017 U.S. level. ⇒ about $7 per day

By 2017, the number had fallen to less than 1 out of 12.
Welfare and GDP are highly correlated...

Welfare ← consumption, life expectancy, leisure, and inequality

from “Beyond GDP” (AER 2016) with Pete Klenow
...but this masks significant differences

The ratio of Welfare to Income

GDP per person (US=1)
### Beyond GDP: Welfare in 2007

#### Decomposition

<table>
<thead>
<tr>
<th></th>
<th>( \lambda )</th>
<th>Income</th>
<th>Log Ratio</th>
<th>Life Exp.</th>
<th>( C/Y )</th>
<th>Leis.</th>
<th>Cons. Ineq.</th>
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<td>United States</td>
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<tr>
<td>France</td>
<td>90.7</td>
<td>70.3</td>
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<td>Japan</td>
<td>81.7</td>
<td>71.3</td>
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<td>0.251</td>
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<td>Singapore</td>
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<td>117.1</td>
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<td>0.132</td>
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<td>South Africa</td>
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<td>17.4</td>
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<td>-0.852</td>
<td>-0.053</td>
<td>0.061</td>
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<td>Botswana</td>
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<td>25.1</td>
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<td>-0.776</td>
<td>-0.574</td>
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The Total Fertility Rate (Live Births per Woman)

Historical Growth Accounting in the U.S., 1950s to Today

Components of 2% Growth in GDP per Person

- K/Y: 0pp
- Human capital per person: 0.5pp
- Employment-Pop Ratio: 0.2pp
- TFP: 1.3pp

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Components of 1.3% TFP Growth

- Population growth: 0.3pp
- Research intensity: 0.7pp
- Misallocation: 0.3pp

Matlab and the Penn World Tables

(you will need the files in ChadMatlab.zip)

https://web.stanford.edu/~chadj/ChadMatlab.zip
Key Matlab Programs

- **pwt91read.m**: Reads the data using “readtable” from the .xlsx file
- **pwt91KeyGraphs.m**: Makes some of the key graphs from this presentation
- **Useful functions from ChadMatlab.zip**:
  - **relabelaxis.m**: e.g. for log scale labels or names
  - **figsetup.m, makefigwide.m, chadfig2.m**: for my figure formats
  - **plotnamesym2.m**: for plotting “dots” and “names” on the graph
  - **cshow.m**: for displaying the data, e.g. country names and levels