

Stanford Big-Data Initiative in International Macro-Finance

Global Firm Dynamics, Productivity, (Mis)Allocations

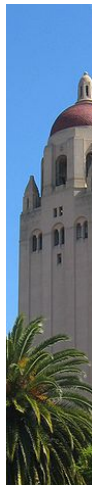
Charles (Chad) I. Jones, Professor, Stanford GSB

The Facts of Economic Growth

Monday, August 31, 2020

Outline

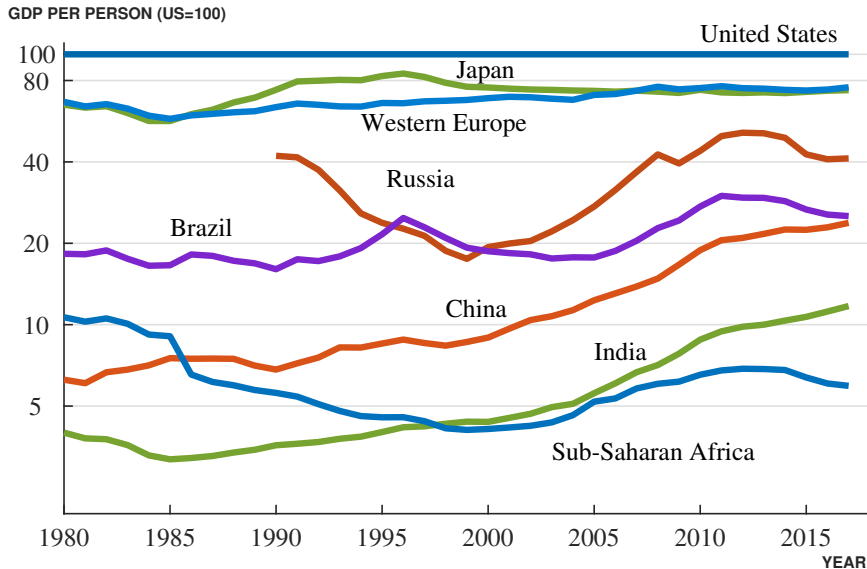
- **Part I:** Some facts
 - Economic growth
 - The world income distribution
 - Beyond GDP
- **Part II:** Matlab and the Penn World Tables
 - Reading the data
 - Making graphs
 - Matlab code



Some Facts of Economic Growth

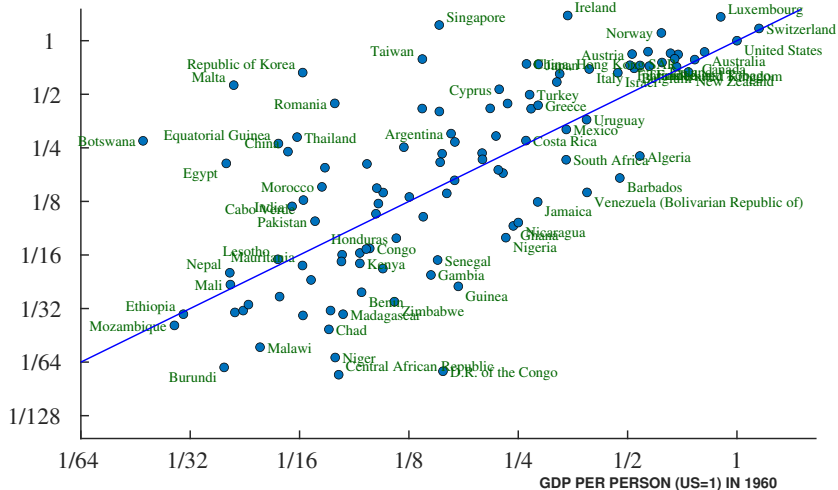
Handbook of Economic Growth, 2016

The Spread of Economic Growth since 1980



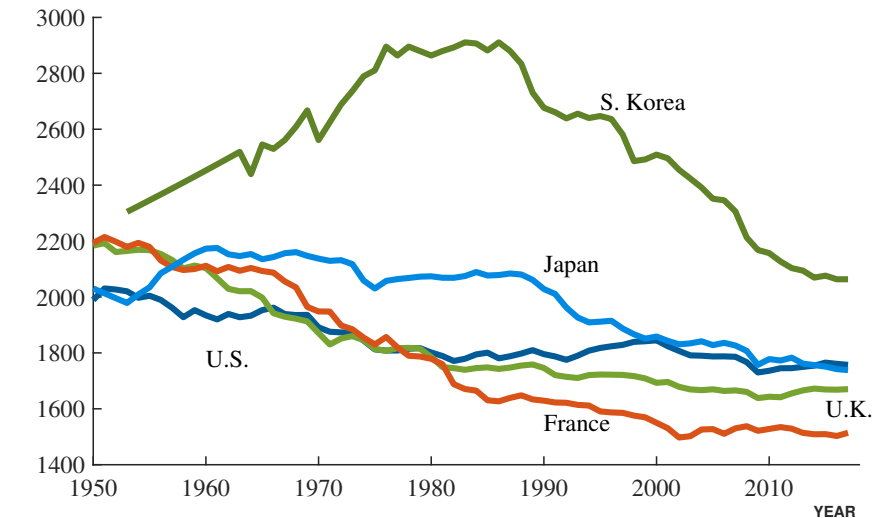
Income Per Person Around the World, 1960 and 2017

GDP PER PERSON (US=1) IN 2017

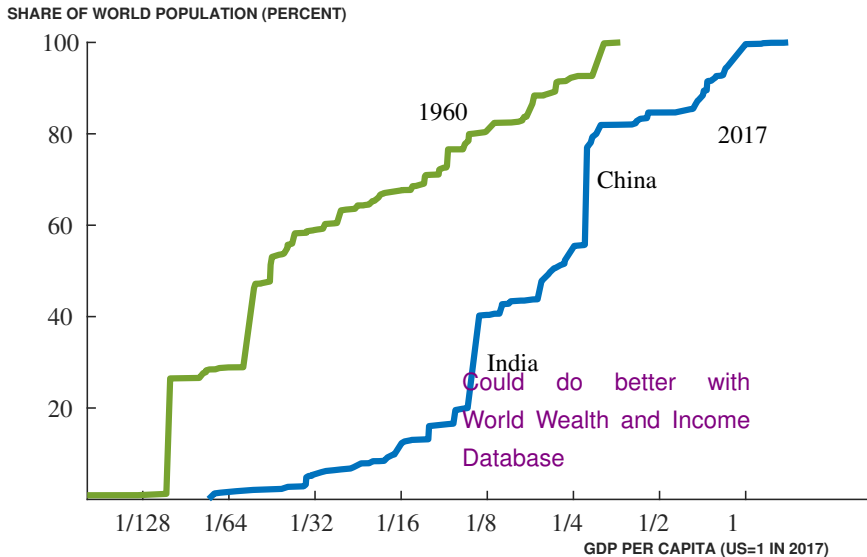


Average Annual Hours Worked

AVERAGE ANNUAL HOURS WORKED

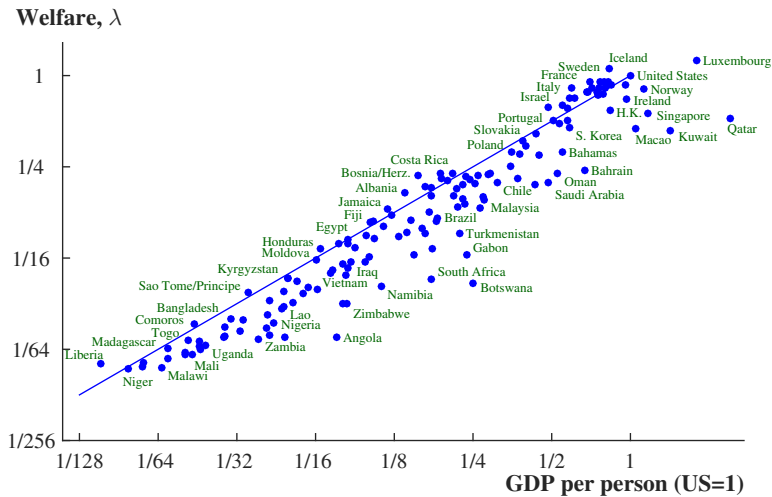


The Distribution of World Income by Population



Welfare and GDP are highly correlated...

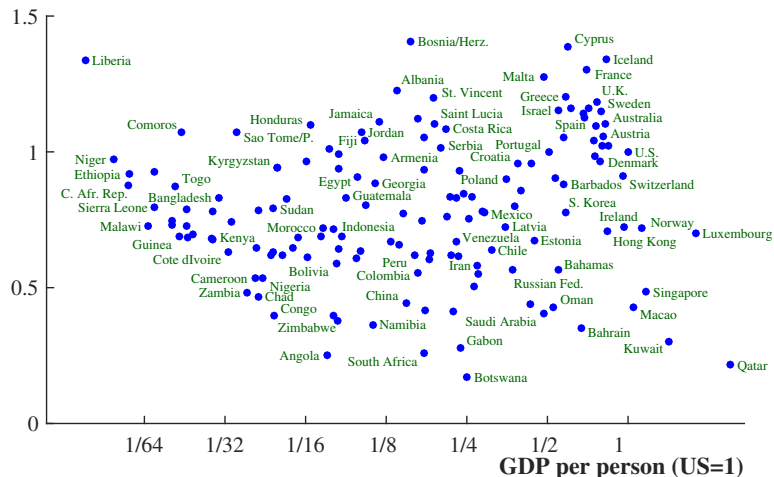
Welfare \leftarrow consumption, life expectancy, leisure, and inequality



from "Beyond GDP" (AER 2016) with Pete Klenow

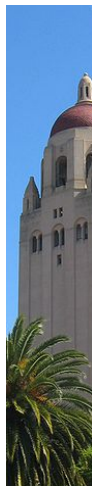
...but this masks significant differences

The ratio of Welfare to Income



Beyond GDP: Welfare in 2007

	λ	Income	Log Ratio	Life Exp.	<i>Decomposition</i>		Cons. Ineq.
					C/Y	Leis.	
United States	100.0	100.0	0.000	0.000	0.000	0.000	-0.000
				77.8	0.845	836	0.658
France	90.7	70.3	0.255	0.167	-0.085	0.067	0.106
				80.8	0.776	613	0.471
Japan	81.7	71.3	0.135	0.251	-0.154	-0.026	0.063
				82.5	0.724	907	0.554
Singapore	56.2	117.1	-0.734	0.132	-0.685	-0.180	0.000
				80.4	0.426	1251	0.658
South Africa	4.9	17.4	-1.271	-0.852	-0.053	0.061	-0.427
				51.0	0.801	636	1.135
Botswana	4.6	25.1	-1.691	-0.776	-0.574	-0.008	-0.333
				52.1	0.476	859	1.048



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