

ECO 4933 Topics in Theory

Introduction to Economic Growth

Fall 2015

Economic Growth

Chapter 1

Facts of Economic Growth

Economic Growth

- Why Economic Growth is Important?
- Why some countries are rich and others are poor? (David Landes)
- Age-old question: “*An Inquiry into the Nature and Causes of the Wealth of Nations*”
- Counterpoint: Malthus
- Who called Economics the “dismal science”?

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- In the words of Robert Lucas Jr. “I do not see how one can look at figures like these without seeing them as representing *possibilities*. If there were some government of India that could take actions that would lead the Indian economy to grow like Indonesia’s or Egypt’s? If so, *what* exactly? If not, what is it about the “nature of India” that makes it so? The consequences for human welfare involved in questions like these are simply staggering: Once one starts to think about them, it is hard to think about anything else”

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- Modern Economic Growth analysis started in the 1950s
- Robert Solow: “A Contribution to the Theory of Economic Growth: (1956)
- Trevor Swan: “Economic Growth and Capital Accumulation” (1956)

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- Early 1980s: work by Robert Lucas, Jr. and Paul Romer.
- Emphasis on “ideas” and “human capital”
- Paul Romer → Endogenous Growth Theory
- Robert Barro: empirical analysis

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- The facts of economic growth:
 1. Some countries are very rich, and some are very poor
 2. Some economies grow rapidly and others do not grow at all
 3. Most economies lie in between

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- **Stylized Fact #1:** There is enormous variation in per capita income across economies. The poorest countries have per capita incomes that are less than 5 percent of per capita income in the richest countries.

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TABLE 1.1 STATISTICS ON GROWTH AND DEVELOPMENT

	GDP per capita, 2008	GDP per worker, 2008	Labor force participation rate, 2008	Average annual growth rate, 1960–2008	Years to double
“Rich” countries					
United States	\$43,326	\$84,771	0.51	1.6	43
Japan	33,735	64,778	0.52	3.4	21
France	31,980	69,910	0.46	2.2	30
United Kingdom	35,345	70,008	0.51	1.9	36
Spain	28,958	57,786	0.50	2.7	26
“Poor” countries					
China	6,415	10,938	0.59	5.6	13
India	3,078	7,801	0.39	3.0	24
Nigeria	1,963	6,106	0.32	0.6	114
Uganda	1,122	2,604	0.43	1.3	52
“Growth miracles”					
Hong Kong	37,834	70,940	0.53	4.3	16
Singapore	49,987	92,634	0.54	4.1	17
Taiwan	29,645	62,610	0.47	5.1	14
South Korea	25,539	50,988	0.50	4.5	16
“Growth disasters”					
Venezuela	9,762	21,439	0.46	−0.1	−627
Haiti	1,403	3,164	0.44	−0.4	−168
Madagascar	810	1,656	0.49	−0.1	−488
Zimbabwe	135	343	0.40	−1.5	−47

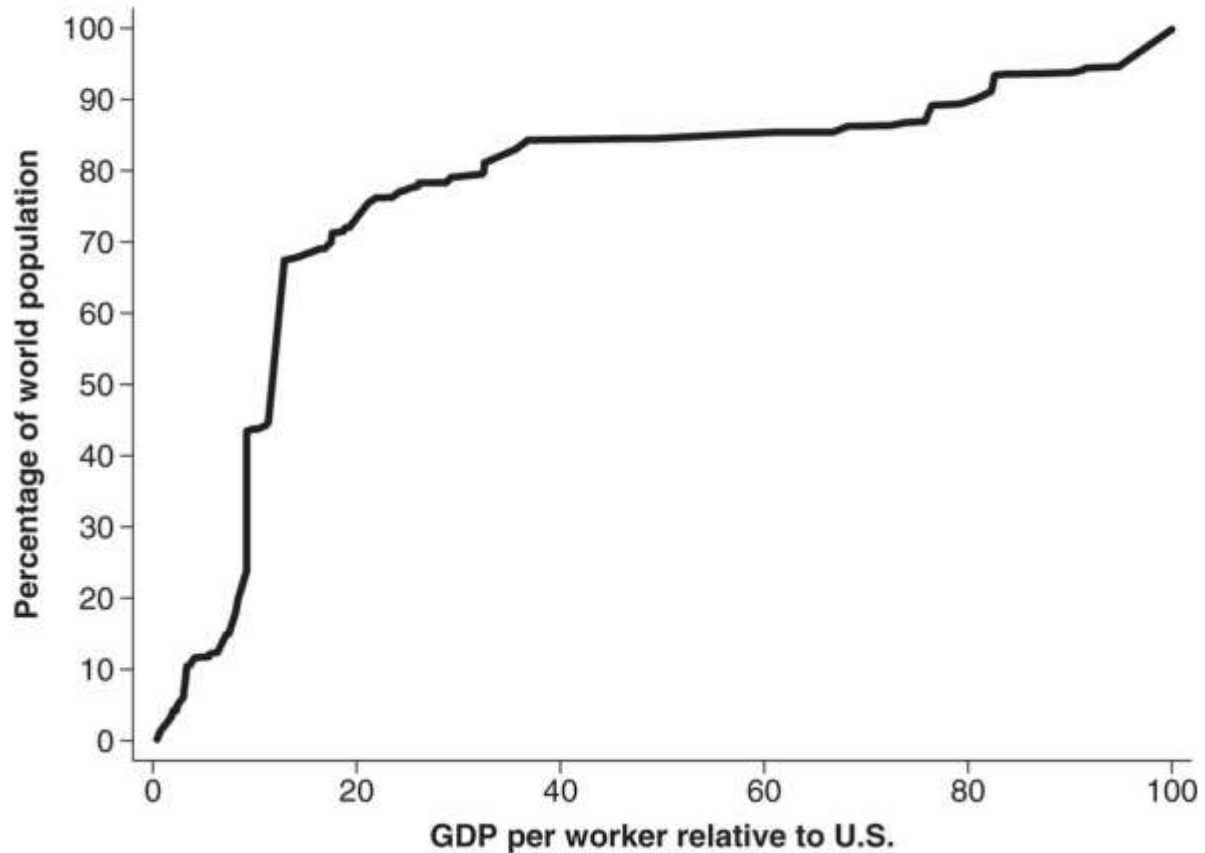
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Thing to remember:

1. PPP Exchange Rates
2. Example: Big Mac Index
3. GDP per capita: more general measure of welfare
4. GDP per worker: is more a measure of labor force productivity
5. More “effort”, more output. Effort = LFPR

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FIGURE 1.1 CUMULATIVE DISTRIBUTION OF WORLD POPULATION BY GDP PER WORKER, 2008



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- Second Section of the Table “poor” countries
- In 2008, two-thirds of the world population lived in countries with less than 20% of U.S. GDP per worker
- China has aprox. 19% of world population (2015)
- India has aprox. 17% of world population (2015)
- Since 1960 both China and India have seen substantial growth in GDP per worker

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- Third Section of Table: NIC (Hong Kong, Singapore, Taiwan, and South Korea)
- GDP per capita of Hong Kong in 2008 was higher than many “rich” countries
- Singapore was among the richest countries in the world in 2008 (rapid growth from 1960)
- This leads to next stylized fact

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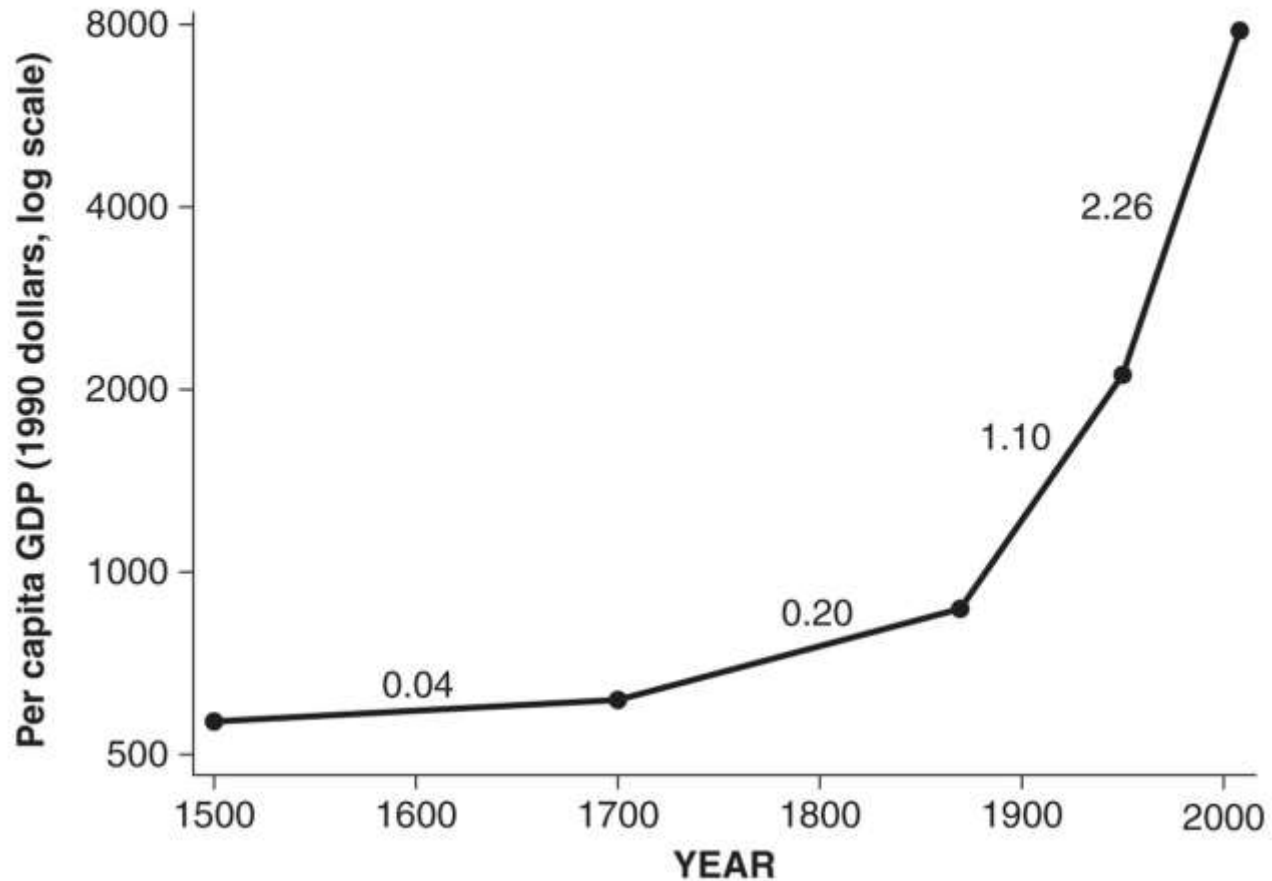
- **Stylized Fact #2:** Rates of economic growth vary substantially across countries.
- Look at 4th column in Table
- Rule of 70 (Lucas, 1988) [column 5]
- Over moderate periods of time, small differences in growth rates can lead to enormous differences in per capita incomes.
- Difference in growth explain why China is #2 economy

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- **Stylized Fact #3:** Growth rates are not generally constant over time. For the world as a whole, growth rates were close to zero over most of history but have increased sharply in the twentieth century. For individual countries, growth rates also change over time.

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FIGURE 1.3 WORLD PER CAPITA GDP AND GROWTH RATES, 1500-2000



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- Between 1950 & 2008 world per capita GDP grew at 2.26% per year
- Between 1870 & 1950 rate was only 1.1%
- Before 1870 rate was only 0.2%
- Between 500 & 1500 growth rate was essentially ZERO (Maddison)
- Sustained growth rates of 2% or more are a modern phenomenon

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- India: 1960-80 = 2%; 1980-2008 = 3.7%
- China: 1960-1978 = 2.1%; since 1979 = 7.7%
- Singapore didn't grow until after the 1950s
- These leads to corollary of Fact #2 and #3

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- **Stylized Fact #4:** A country's relative position in the world distribution of per capita incomes is not immutable. Countries can move from being "poor" to being "rich," and vice versa.
- e.g. Argentina.

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- **Stylized Fact #5:** (U.S. economy)
 1. The real rate of return to capital, r , shows no trend upward or downward;
 2. The shares of income devoted to capital, rK/Y , and labor, wL/Y , show no trend; and
 3. The average growth rate of output per person has been positive a relatively constant over time (Figure 1.4)

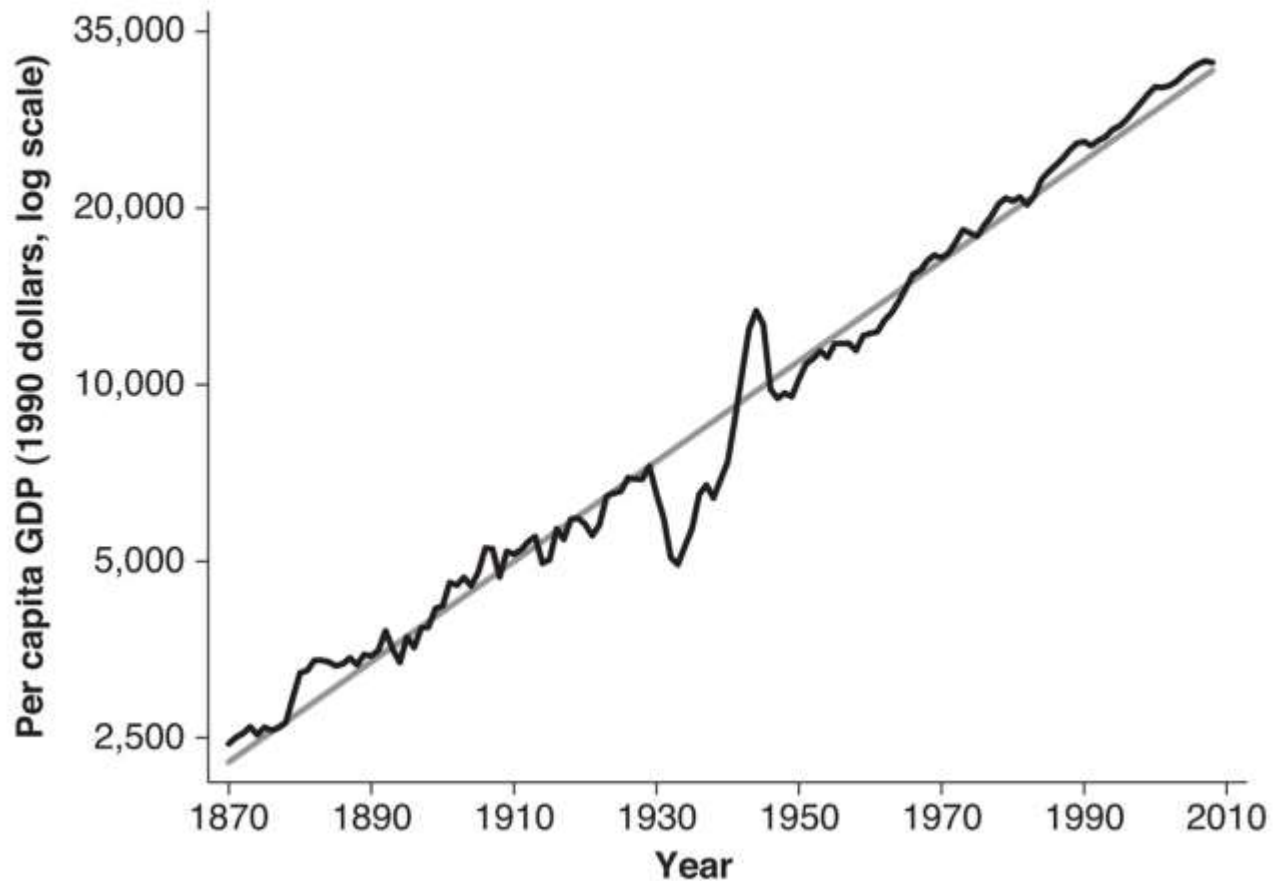
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1. Real interest rate on government debt in the U.S. economy shows no trend (r)
2. $wL/Y = 0.7$
3. $rK/Y = 0.3$

Implication: K/Y is roughly constant in U.S.
(Kaldor, 1961)

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FIGURE 1.4 REAL PER CAPITA GDP IN THE UNITED STATES, 1870-2008



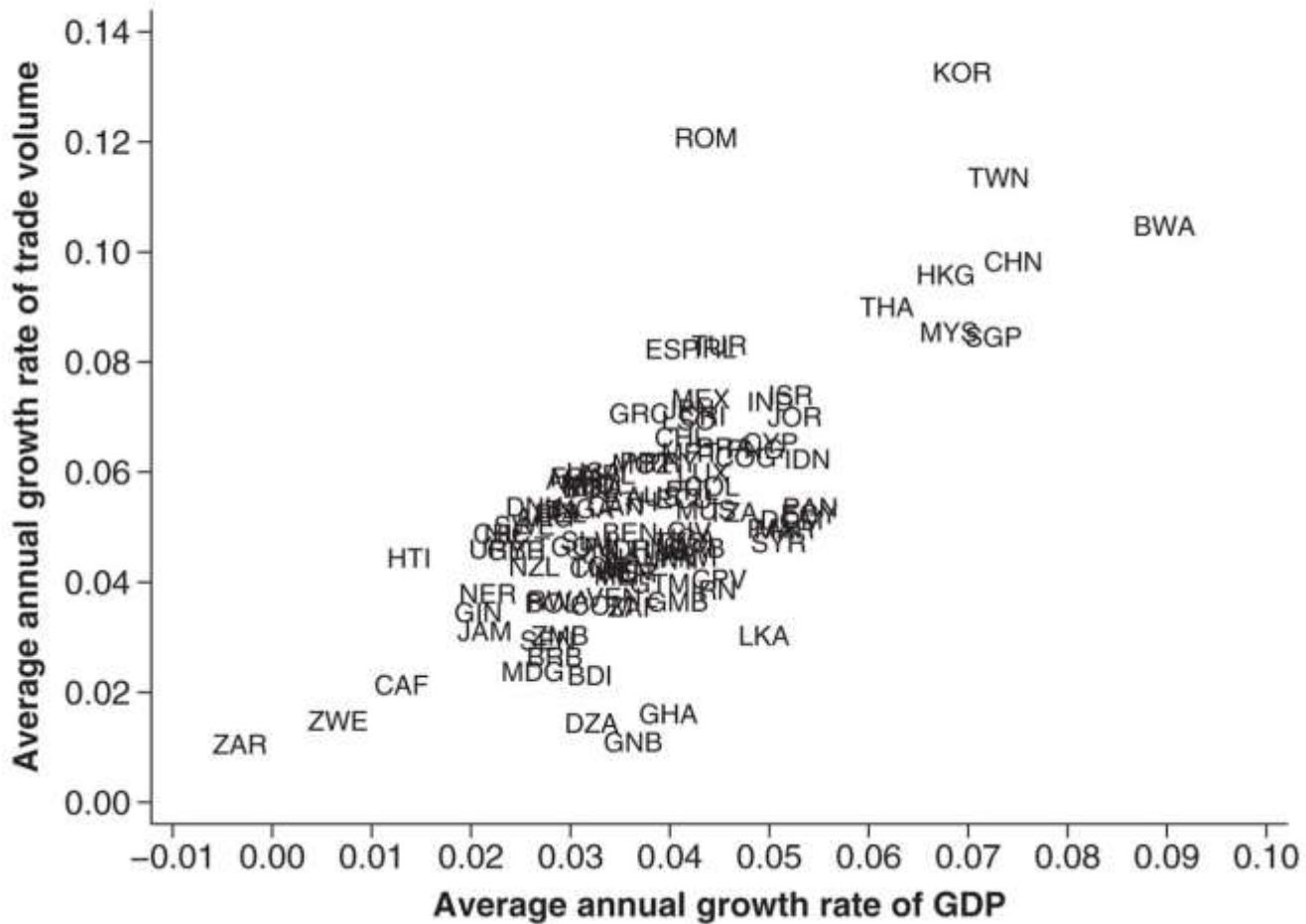
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- **Stylized Fact #6:** Growth in output and growth in the volume of international trade are closely related.

(First and second wave of globalization)

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FIGURE 1.5 GROWTH IN TRADE AND GDP, 1960-2008



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- **Stylized Fact #7:** Both skilled and unskilled workers tend to migrate from poor to rich countries or regions.
 1. Immigration restrictions
 2. High cost of migrating