

Some organizational details

- Lecture: weekly
- Exercise: fortnightly, starting October 28, 2010
- studienbegleitende Leistungen
- sit-in exam: March 23-25, 2011
- slides: wipo.iww.kit.edu → Lehre
- Semesterapparat

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- Sydsæter, K., Hammond, P., Seierstad, A. and Strom, A. (2008). Further Mathematics for Economic Analysis, Second Edition, Pearson Education Limited, Essex.

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Cross-Country Income Differences

- There are very large differences in income per capita and output per worker across countries today.

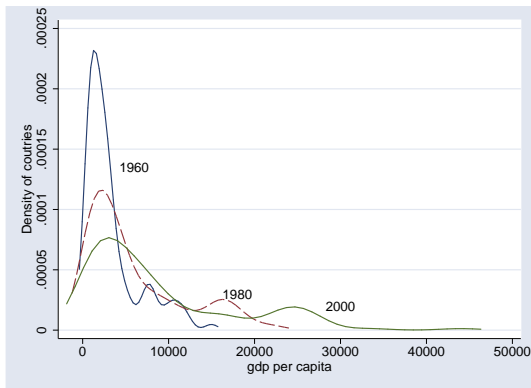


Figure 1.1: Distribution of PPP-adjusted GDP per capita.

- Part of the spreading out of the distribution in the Figure is because of the increase in average incomes.
- More natural to look at the log of income per capita when growth is approximately proportional:
 - when $x(t)$ grows at a proportional rate, $\log x(t)$ grows linearly,
 - if $x_1(t)$ and $x_2(t)$ both grow by 10, $x_1(t) - x_2(t)$ will also grow, while $\log x_1(t) - \log x_2(t)$ will remain constant.
- The next Figure shows a similar pattern, but now the spreading-out is more limited.

Cross-Country Income Differences

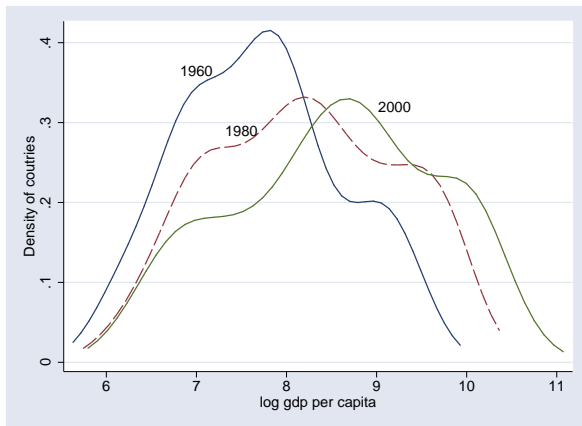


Figure 1.2: Estimates of the distribution of countries according to log GDP per capita (PPP-adjusted) in 1960, 1980 and 2000.

- Theory is easier to map to data when we look at output (GDP) per worker.
- Moreover, key sources of difference in economic performance across countries are national policies and institutions.
- The next Figure looks at the unweighted distribution of countries according to (PPP-adjusted) GDP per worker
 - “workers”: total economically active population according to the definition of the International Labour Organization.
- Overall, two important facts:
 - ① Large amount of inequality in income per capita and income per worker across countries.
 - ② Slight but noticeable increase in inequality across nations (though not necessarily across individuals in the entire world).

Cross-Country Income Differences



Figure 1.3: Distribution of log GDP per worker (PPP-adjusted).

Origins of Income Differences and World Growth

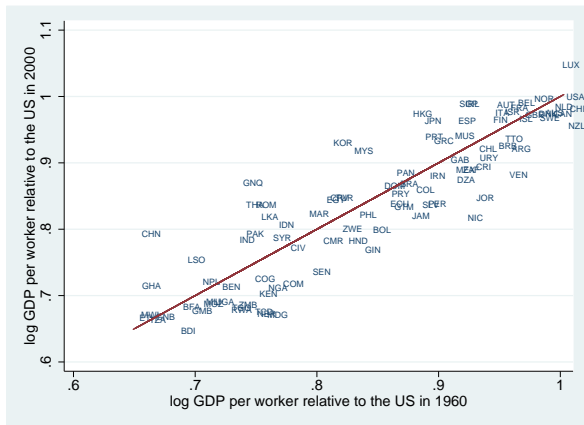


Figure 1.5: Log GDP per worker in 2000 and 1960.

Origins of Income Differences and World Growth

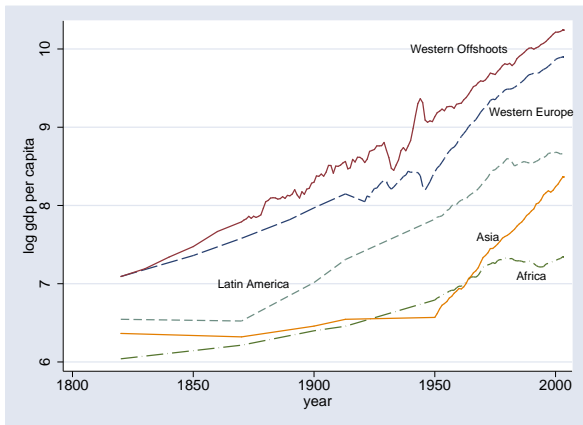


Figure 1.6: Evolution of GDP per capita 1820-2000.

Origins of Income Differences and World Growth

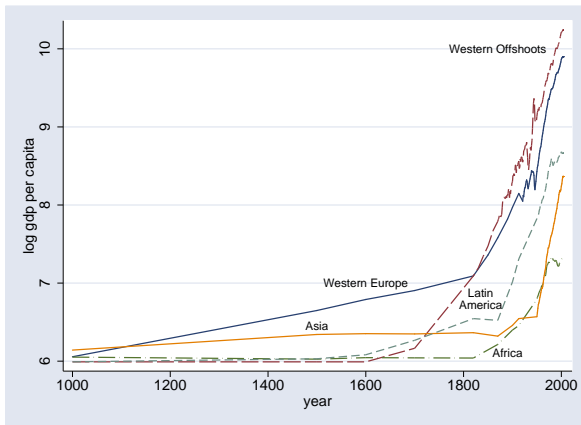


Figure 1.7: Evolution of GDP 1000-2000.

Why occurred the take-off occur about 200 years ago? Why took it place

Origins of Income Differences and World Growth

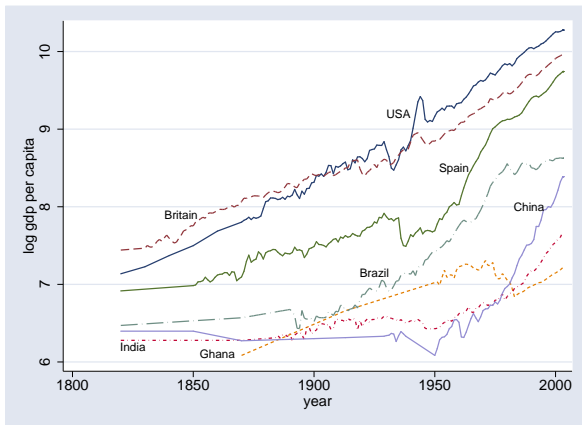


Figure 1.8: Evolution of income per capita in various countries.

From Correlates to Fundamental Causes

- Correlates of economic growth, such as physical capital, human capital and technology, will be our first topic of study.
- But these are only *proximate causes* of economic growth and economic success:
 - why do certain societies fail to improve their technologies, invest more in physical capital, and accumulate more human capital?
- Return to Figure 1.4 above to illustrate this point further:
 - How did South Korea and Singapore manage to grow, while Nigeria failed to take advantage of the growth opportunities?
 - If physical capital accumulation is so important, why did Nigeria not invest more in physical capital?
 - If education is so important, why are education levels in Nigeria still so low and why is existing human capital not being used more effectively?
- The answer to these questions is related to the *fundamental causes* of economic growth.

- We can think of the following list of potential fundamental causes:
 - 1 luck (or multiple equilibria)
 - 2 geographic differences
 - 3 institutional differences
 - 4 cultural differences
- An important caveat should be noted: discussions of geography, institutions and culture can sometimes be carried out without explicit reference to growth models or even to growth empirics.
- But it is only by formulating parsimonious models of economic growth and confronting them with data that we can gain a better understanding of both the proximate and the fundamental causes of economic growth.

- Why are there such large differences in income per capita and worker productivity across countries?
- Why do some countries grow rapidly while other countries stagnate?
- What sustains economic growth over long periods of time, and why did sustained growth start 200 years ago or so?