

UNIVERSITY OF OSLO
DEPARTMENT OF ECONOMICS

Term paper in: ECON1910

Handed out: 29.02.2012

To be delivered by: 21.03.2012

Place of delivery: Fronter

Further instructions:

- This term paper is **compulsory**. Candidates who have passed the compulsory term paper in a previous semester, does not have the right to hand in the term paper again. This is so, even if the candidate did not pass the exam.
- You must use a printed front page, which will be found at the course semester page.
- **Note:** The students can feel free to discuss with each other how to solve the problems, but each student is supposed to formulate her/his own answers. Only single-authored papers are accepted, and papers that for all practical purposes are identical will not be approved.
- It is of importance that the term paper is delivered by the deadline (see above). Term papers delivered after the deadline, **will not be corrected.***)
- You must hand in a declaration form with your term paper. You will find this on the course semester page. **Term papers without declaration forms will not be corrected.**
- Information about citing and referring to sources:
<http://www.uio.no/english/studies/about/regulations/sources/>
- **Information about consequences of cheating:**
<http://www.uio.no/english/studies/admin/examinations/cheating/index.html>
- All term papers must be delivered to the place given above. You must not deliver your term paper to the course teacher or send it by e-mail. If you want to hand in your term paper **before** the deadline, please contact the department office on 12th floor.
- If the term paper is not accepted, you will be given a new attempt. If you still not succeed, you will not be permitted to take the exam in this course. You will then be withdrawn from the exam, so that this will not be an attempt.

*) If a student believes that she or he has a good cause not to meet the deadline (e.g. illness) she or he should discuss the matter with the course teacher and seek a formal extension. Normally extension will only be granted when there is a good reason backed by supporting evidence (e.g. medical certificate).

Compulsory assignment in ECON1910

You can answer in Norwegian or English. There are no official page limits, but a decent answer will probably require you to write somewhere between 5 and 15 pages (machine written). Figures can be drawn by hand and scanned.

Problem 1: Harrod-Domar vs. Solow. In the Harrod-Domar model a change in the savings rate (s) has a permanent effect on the growth rate of GDP per capita, while in the Solow model a change in the savings rate has only a temporary effect on the growth rate of GDP per capita. Why is this the case?

Problem 2: Population growth rates in the Solow model. Define and explain “steady state” in the Solow model. Assume that the economy initially is in the steady state. Analyze the short-run and long-run effects of a change in the population growth rate (n) on *per capita* GDP growth rates and levels in the Solow model, everything else equal.

Problem 3: Data and PPP. To answer this question, you will need to download data from the World Bank’s DataBank.¹

- (a) Download the data series GDP per capita (constant 2000 US\$) and GDP per capita, PPP (constant 2005 international \$) for China and Norway for the years 1980–2010.² Plot PPP GDP per capita against time for China and Norway in one graph and GDP per capita in constant 2000 US\$ for China and Norway in another graph.³ Discuss.
- (b) Define purchasing power parity (PPP). If we want to compare the standards of living in China and Norway, should we compare GDP in PPP terms or in US\$ terms?
- (c) In 2010, GDP per capita in current US\$ was 4,428 in China and 84,538 in Norway. The same figures using current PPP\$ were 7,598 and 56,691.⁴ Why is Norway’s GDP per capita higher in current US\$ than in PPP\$, while the opposite is true for China?

Problem 4: Migration. Discuss the suitability of the models analyzed in Problem 1 to explain economic growth in cities versus in agricultural development in rural areas.

¹<http://databank.worldbank.org/data/home.aspx>.

²Note that constant 2000 US\$ means that the World Bank has converted the GDP figure for each year at that year’s market exchange rate, and thereafter normalized these GDP figures such that US inflation has been removed. The same thing holds for PPP (constant 2005 international \$), but here the World Bank have used the PPP exchange rate, not the market exchange rate.

³It is probably easiest to do this in Microsoft Excel, but you can use any program you want.

⁴Note that these figures are *not* the same as the ones you downloaded from the World Bank’s DataBank. The reason is that these are denoted in 2010 US\$, while in (a) and (b) we used constant 2000 and 2005 prices for PPP\$ and US\$.

Explain the consequences if economic growth is strong in urban areas but weak in rural areas.

Problem 5: Inequality and growth. Explain how the distribution of assets (capital) affect the growth process in the models analyzed in Problem 1. Discuss how realistic you think this is, and present some potential modifications of the models that may alter the conclusion. Finally, discuss critically how inequality affect growth empirically.