Exam in SØK2007 Development Economics (Spring 2016)

Make the assumptions you find necessary.

Problem 1 (33\%)

a) Explain what a Lorenz curve is.

b) What does the Gini coefficient measure and why must it have a value between zero and one?

c) Why can GDP per capita be an insufficient measure of poverty?

d) Which factors do empirical analyses find to be important for a positive impact of aid on economic growth?

Problem 2 (33\%)

A developing country consists of three cities, A, B, and C. Workers will not commute from city A to city B or vice-versa. People living in city C can commute to both city A and to city B. City A has low-skilled workers. City B has high-skilled workers, while city C has medium-skilled workers. Let \( q \), \( 0 \leq q \leq 1 \), measure the skill-level. Here \( q_A < q_C < q_B \), where the subscripts refer to the city.

A company plans to build a factory in the country. If the factory is located in city A it will need workers from city A and from city C. If the factory is located in city B it will need workers from city B and from city C. It will build either a factory in city A for making paper clips or a factory in city B for making smartphones.

The net profits from producing paper clips and smartphones are given by

\[
\pi_{pc} = q_A + q_C
\]

and

\[
\pi_{sp} = (1 + q_B)q_C,
\]

respectively.

If the company decides to start production of paper clips, what factors may have led to this decision? What consequences may this decision have for the country’s economy?
Problem 3 (33\(\frac{1}{3}\)%) Assume that productivity growth \(\dot{A}\) is given as:

\[
\dot{A}(t) = g(H) + c(H) \left[ \frac{T(t)}{A(t)} - 1 \right],
\]

where \(A\) and \(T\) are the domestic productivity level and the productivity level at the technological frontier, respectively, \(g\) and \(c\) are positive functions of the human capital level \(H\), and \(t\) is time. The frontier productivity level is assumed to grow at a constant rate.

a) Explain the given productivity growth specification and show the effects on an increase in the human capital level.

b) How can the specification of productivity growth in a) be changed to allow for income divergence? Show the effects of an increase in the human capital level here as well.