

## Assessment guidelines SØK2007 spring 2018

The compulsory readings are chosen chapters from the textbook “Economic Development” by Todaro and Smith, as well as four articles and lecture notes.

### Question 1 (40%)

a) The Human Development index ranks countries on a scale from 0 to 1 based on three components: health, education, and income. Each component should be explained (see chapter 2 in the textbook).

b) The Lorenz curve gives a graphical illustration of the income distribution of a country, and is explained and illustrated in chapter 5.1 of the textbook.

c) Private return to education: Higher future income. Private costs of education: Direct costs (tuition fees, books, uniforms etc.) and indirect costs (alternative cost, loss of labor income). Social return to education: Spillovers, growth effects, externalities etc. Social costs of education: School buildings, equipment, teacher salaries etc.

d) The difference between absolute and relative poverty measures should be explained. Main measures of poverty include the head count index and the total poverty gap. Good answers also mention the Multidimensional Poverty Index (MPI) as an example of a non-monetary measure of poverty.

e) The main argument is related to risk aversion and should be illustrated graphically. Arguments like organization of the agricultural sector (sharecropping), lack of credit, and lack of information/knowledge are also relevant.

f) First, it takes time to reduce the birth rate of a country. Social, economic, and institutional forces influence the birth rate, and this cannot be altered overnight. Second, even if the birth rate is reduced, population growth remains high for a long time due to the age structure of the population (high share of young people forming a large base of potential parents). This is referred to as the hidden momentum of population growth, and the typical age structures of developed and developing countries should be illustrated (see figure 6.4 in the textbook).

## Question 2 (30%)

a) The Harrod-Domar model is given in chapter 3 of the textbook. The model must be explained and presented analytically. Constant returns to capital is an important assumption of the model. The equation for growth in GDP can be derived as:  $g = \frac{s}{c} - \delta$ , where  $s$  is the savings rate,  $c$  is the constant capital-output ratio, and  $\delta$  is the capital depreciation rate. According to this model, foreign aid can generate growth through an increase in the savings rate. Based on the growth equation, it is possible to calculate investment requirements for a target growth rate (for given values of  $c$  and  $\delta$ ). If domestic savings are lower than the necessary investment rate, foreign aid can in theory fill the savings gap and contribute to economic growth.

b) The discussion should be based on the empirical analyses of Easterly (1999) and Burnside and Dollar (2000). Easterly (1999) performs an empirical test of two predictions of the Harrod-Domar model: i) Aid goes into investment; ii) Investment generates growth. The empirical analysis gives limited support to the savings gap theory. The main finding of Burnside and Dollar (2000) is that the growth effect of foreign aid is conditional on the country's quality of economic policies. The policy index is based on the quality of fiscal policies (the budget surplus), monetary policies (the inflation rate), and trade policies (trade openness). On average, there is no significant growth effect of foreign aid, but aid has a positive growth effect in countries with "good policies".

c) Main arguments for why foreign aid might not generate growth:

- Donor countries' allocation of aid is not optimal. Follows from wrong motivation behind the allocation of aid (political, military, historical, economic). This can be related to the results of the Burnside–Dollar article, where aid has positive growth effects when targeted to low-income countries with sound economic management.
- Emergency aid is not intended to generate growth.
- If foreign aid goes into education or health care, it is not expected to generate growth effects immediately, but rather over time. An empirical analysis of short-run effects of aid does not take potential long-run effects into account.
- The micro-macro paradox: It is difficult to earmark aid funds. If the project the donor wants to finance was already planned by the receiving country, the aid funds will probably be spent on something else, typically a prestige project with low returns. Could be illustrated by an example.
- The Samaritan's dilemma: Donor countries often set some performance conditions that must be met by the poor country in order to be eligible for future aid. However, the receiving country knows that if the aid is invested with good results, it will not qualify for aid in the future. It also knows that if the aid doesn't give results and the

country remains poor, the transfers will continue. The threat of the donor country to stop transfers is not credible, and the poor country chooses to waste the aid funds.

Question 3 (30%)

The given productivity growth specification is explained in the article by Benhabib and Spiegel (1994) and in the corresponding lecture notes. It is important to explain the economic intuition behind the productivity specification. To illustrate productivity growth graphically, the first and second derivative of productivity growth with respect to relative productivity must be calculated. The equilibrium level of relative productivity should be calculated. The effect of increased human capital level can be shown both graphically and analytically, and the dynamics must be explained. Higher level of human capital has a temporary positive effect on the productivity growth rate. In the long-run, productivity growth equals the growth rate at the technological frontier, but the relative productivity level has increased.