Development Economics. Examples of exam questions

Attached to each question is a reference to where in the handouts you will find the relevant answer, e.g. [5.10].

Lecture 2
1. a) Describe the main features of the Harrod-Domar growth model [2.7-2.9];
   b) and show why growth may not take place in the poorest countries (the vicious circle);
   c) In the model, three different opportunities for boosting growth can be accommodated. What are they and how is growth enhanced?

2. In the Lewis two-sector model, a crucial assumption is that there is a "distortion" in the labour market. [2.10-2.19]
   a) What kind of distortion is that?
   b) In this model, the market cannot bring about a socially optimal static allocation of labour between the traditional agricultural sector and the "emerging industry sector". Show the difference between the market equilibrium and the socially optimal allocation of labour in a simple diagram; also show the static welfare gain accruing from moving (costless) from the market equilibrium to the social optimum.
   c) What other allocation can be optimal if we introduce domestic savings, investment and growth into the model?
   d) How can the Lewis type of model be modified so as to explain voluntary unemployment?
Lecture 3
1. Different growth models give different predictions on whether growth rates across countries tend to **diverge** or **converge** over time - or be **neutral**. Give (1) examples of three growth models that give the three different predictions and (2) explain the main mechanisms that generate the result concerning divergence/convergence/neutrality. [3.9-3.11]

Lecture 4
1. It has been widely held that the **Solow** Growth model can predict quite well differences in growth rates across countries in **qualitative** terms, but not **quantitative** differences. In his Brookings paper, **Mankiw** makes an attempt to reformulate the Solow model in a way that also it's quantitative predictions become more in line with observations from reality. [4.2-4.4]
   a) Explain in what way he "**reinterprets"** the model.
   b) Give a **numerical example** of how his reinterpretations affect the quantitative relationship between savings ratios and (steady state) per capita income.

2. **Cross-country regressions** have become a standard tool for empirical estimations of determinants of variations in growth rates across countries. Give examples of three **methodological problems** facing research in this field, and how econometricians have tried to resolve these problems. [4.12-4.24]

3. Sala-i-Martin (AER 1997) uses a test to check the “**robustness**” of the various parameters that have been found to be significantly correlated to growth in cross-country regressions. [4.13-4.14].
   a) Describe the **test** he undertakes.
   b) What are the two main **differences** between his test and the one conducted earlier by Levine and Renelt?
   c) What are Sala-i-Martin’s main results?
   a) Describe the basic features of the standard Growth Accounting model.
   b) What are the refinements in Young’s model?
   c) What are his main conclusions regarding the determinants of growth in the “miracle economies”?

5. Time-series regressions can be helpful for shedding light on some growth-related questions, but less so for others. Discuss two questions for which time-series data are suitable. [4.7-4.8]

Lecture 5
1. One of the more frequently advanced hypotheses why poor people in developing countries have very high fertility is that a large number of children is needed in order to ensure support of the parents in their old age. [5.13-5.14]
   a) How does higher parental income affect their “demand” for children in such a model of “children as pension providers”?
   b) Give a few examples of factors other than income that may affect parents’ demand for children in such a model.
   c) Assuming that the probability that each born child actually will provide for his or her parents at their old age is 0.25, how many children must they opt for in order to stand a 0.90 chance to be supported by at least one child?

2. In some models of the relationship between economic growth and population growth, one of these two variables is assumed to be exogenous and the other endogenous. In still other models, both are either assumed to be endogenous or exogenous. Give one example of a theory based on each of these four possible “combinations” of assumptions under four different headings (a-d). [5.7-5.12].
3. The so-called transition theory predicts an inverted U-shape relationship between the rate of growth of the population and the level of per-capita income. Explain the main features of this theory and why the relationship takes this form. [5.11-5.12].

Lecture 6
1. Grossman and Krueger provide estimates of the correlation between economic growth (or rather per capita income levels) and environmental pollution in various dimensions. [6.13-6.17].
   a) What is their hypothesis and what econometric model do they test?
   b) What are their main findings?

2. The International Panel for Climate Change (IPCC) builds their scenarios for global warming during the present century on economic data for GDP/C in the low- and middle income countries and projected growth rates for the next hundred years. Some economists (e.g. Castles and Hendersen) have criticised these data and growth projections. What is the essence of their critique? [6.28-6.33]

Lecture 7
1. There are a few different mechanisms through which income distribution is hypothesised to affect the rate of growth in subsequent periods. [7.16-7.18].
   a) Describe three such mechanisms.
   b) What seems to be the rather conform empirical evidence?

2. a) Describe the relationship that the so-called Lorenz curve traces out.
   b) Many of the most commonly used measurements of the size income distribution are related to the Lorenz curve. Give two examples. [7.3-7.4].

3. Different empirical studies of income distribution across countries reach very different conclusions; some find inter-country income distribution to have worsened drastically; other that it has become more even. Discuss three reasons why this is the case [7.20-7.24].
Lecture 8

1. Estimated so-called Poverty Gaps are increasingly used as indicators of the development status of countries. [8.6-8.9].
   a) Describe three commonly used such “gap-indicators”, either with the help of simple graphs or formulas (or both).
   b) In principle, the size of a given gap can decline (or increase) in response to changes in three parameters. Which are these three parameters?

2. The rate of total (income) growth required to reduce the absolute number of people below the poverty line in a country depends on the distribution of incomes and the population growth rate. [8.10-8.12].
   a) Show in a simple graph, or in some other way, why this is the case.
   b) Provide numerical examples of what income growth rates that are required to reduce absolute poverty at the margin for given income distribution and population growth rate.

3. The World Bank (Chen and Ravallion, 2004) and Sala-i-Martin (2002) have estimated the level of poverty in the world and its change over time. They reach different conclusions both with respect to levels and changes over time. What are the main reasons for the diverging results? [8.17-8.21]

Lecture 9

1. Sebastian Edwards’ claims in his EJ article (1998) that he has found robust evidence showing openness in trade to be beneficial for economic growth. [9.11-9.14]
   a) What are the basic features of the theoretical model from which he derives the econometric model he uses for the tests.
   b) Provide examples of a few indicators of openness used in the tests.
   c) Give an example of a point of criticism that one may make against his econometric method.
2. Show in simple diagrams what are the static gains from trade for a small country in 2x2x2 models (two countries, two goods and two factors of production) when there are:

[9.2 and 9.6]

a) **Constant** returns to scale in both sectors;

b) **Increasing** returns to scale in both sectors.

**Lecture 10**

1) Acemoglu et al. (American Economic Review article) argue that, basically, **climate and health hazards** are to blame for the lack of “good” **institutions**, which is a hinder for growth in many developing countries. They present a five-stage theory linking climate to institutional hurdles for economic growth. [10.15-10.23].

a) What are those five links?

b) Glaeser et al question the Acemoglu results. What is the alternative link of causation that they test?
1) In the **Lewis two-sector model**, a crucial assumption is that there is a "distortion" in the labour market.

a) In this model, the market cannot bring about a socially optimal static allocation of labour between the traditional agricultural sector and the "emerging industry sector". Show the difference between the market equilibrium and the socially optimal allocation of labour in a simple diagram; also show the static welfare gain accruing from moving (costless) from the market equilibrium to the social optimum.

b) What other allocation can be **optimal** if we introduce domestic savings, investment and growth into the model?

c) How can the Lewis type of model be modified so as to explain **voluntary unemployment**?

2) Estimated so-called **Poverty Gaps** are increasingly used as indicators of the development status of countries.

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1) One of the more frequently advanced hypotheses why poor people in developing countries have very high **fertility** is that a large number of children is needed in order to ensure support of the parents in their **old age**.

a) How does higher parental income affect their “**demand**” for children in such a model of “children as pension providers”?

b) Give a few examples of **factors other than income** that may affect parents’ demand for children in such a model.

c) Assuming that the **probability** that each born child actually will provide for his or her parents at their old age is 0.25, how many children must they opt for in order to stand a 0.90 chance to be supported by at least one child?

4. Acemoglu *et al.* (American Economic Review article) argue that, basically, **climate and health hazards** are to blame for the lack of “good” **institutions**, which is a hinder for growth in many developing countries. They present a five-stage theory linking climate to institutional hurdles for economic growth.

a) What are those five links?

b) Glaeser et al question the Acemoglu results. What is the alternative link of causation that they test?
In Lewis two-sector model, the market cannot bring about a socially optimal static allocation of labour between the traditional agricultural sector and the "emerging industry sector" because of a "distortion" in the labour market in the first sector.

a) What distortion in the agricultural sector prevents the socially optimal allocation of labour between the two sectors?

b) Show the static welfare gain accruing from moving (when assumed to be costless) from the market equilibrium to the social optimum and how such a move affects the distribution of income between labour and capital.

c) How can the Lewis type of model be modified so as to explain voluntary unemployment?

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a) Describe three commonly used such “gap-indicators”, either with the help of simple graphs or formulas (or both).

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