

Fall 2014

ECONOMIC DEVELOPMENT

EC207

Writing period: 80 Minutes

Permitted materials: Non-programmable Calculators

You must attempt to answer all questions.

Short-answer questions to be completed in the script book provided.

Multiple choice and true/false questions to be completed in the scantron forms.

You are to answer all questions. [50 marks]

Section A: True or false (Each question is worth 1 mark for a total of 10 marks)

1. Countries that are the world's most prosperous countries today were always the world's most prosperous countries and countries that are the world's poorest countries today were always the world's poorest countries (in terms of GDP per capita).

- a) True
- b) False**

2. The world's poorest countries (in terms of GDP per capita) tend to be located in the tropics.

- a) True**
- b) False

3. Based on the evidence presented by Banerjee and Duflo about the living conditions of the world's poor, the poor consistently spend more than 90% of their income on food.

- a) True
- b) False**

4. Life expectancy and GDP per capita are positively correlated across countries.

- a) True**
- b) False

5. Interest rates on loans for the extremely poor tend to be the same as for the poor.

- a) True
- b) False**

6. Consider a regression model of the form $y_i = \alpha + \beta x_i + \varepsilon_i$ where y_i is the outcome variable, x_i is the explanatory variable, and ε_i is the unobserved error term. Reverse causality is when ε_i also affects y_i .

- a) True
- b) False**

7. In a randomized control trial participants are allowed to decide whether they want to be in the treatment or control group.

- a) True
- b) False**

8. The empirical evidence shows that investment is not necessary for growth.

- a) True
- b) False

9. The “Reversal of Fortunes” occurred in areas colonized by European powers and in Europe.

- a) True
- b) False

10. Poorer countries tend to have higher disease burdens.

- a) True
- b) False

Section B: Multiple choice (each question is worth 1 mark for a total of 5 marks)

11. Consider a regression model of the form $y_i = \alpha + \beta x_i + \varepsilon_i$ where y_i is the outcome variable, x_i is the explanatory variable, and ε_i is the unobserved error term. Suppose we are concerned about either omitted variable bias or reverse causality and thus would like to use an instrumental variable. The two necessary conditions for the instrumental variable to be valid are:

- a) It must be correlated with x_i and correlated with ε_i
- b) It must be uncorrelated with x_i and correlated with ε_i
- c) **It must be correlated with x_i and uncorrelated with ε_i**
- d) It must be uncorrelated with x_i and uncorrelated with ε_i

12. According to the Harrod-Domar model, as the capital-output ratio increases, all else equal, the growth rate will:

- a) Not change
- b) Increase
- c) **Decrease**
- d) It is impossible to tell

13. The marginal returns to capital are:

- a) Increasing in the Harrod-Domar model and constant in the Solow model without technological change
- b) Decreasing in the Harrod-Domar model and constant in the Solow model without technological change
- c) Constant in the Harrod-Domar model and increasing in the Solow model without technological change
- d) Constant in the Harrod-Domar model and decreasing in the Solow model without technological change**

14. Consider the Solow model without technological change. Suppose an economy is at its steady state and there is a sudden and permanent increase in the savings rate. Growth in output per worker will be:

- a) Positive in the long-run
- b) 0 in the long-run**
- c) Negative in the long-run
- d) Unknown in the long-run

15. The “Reversal of Fortunes” started:

- a) Immediately after colonialism started in the late 1400s
- b) In the 1500s and 1600s
- c) In the 1800s**
- d) In the 1900s

Section C: Short-answer (total of 35 marks)

16. Discuss whether the empirical evidence presented by Easterly (2001) is consistent with the predictions of the Harrod-Domar model and the “financing gap” approach to growth through foreign aid. Recall that there were two main pieces of evidence. [6 marks]

- To answer this question really well, you first need to understand what are the predictions of the Harrod-Domar model and the associated “financing gap” approach:
 - The Harrod-Domar model predicts that growth will increase when the savings rate increases (see the specific formula in the answer to question 1)
 - The financing gap approach is based on the premise that low-income countries are too poor to generate a large enough savings rate to achieve high growth and thus foreign aid would be used to supplement domestic savings in these countries such that total savings available to these countries is the sum of domestic savings and foreign aid. It was assumed that foreign aid would primarily be used for investment purposes
- Thus, we have two associated predictions:

- From the financing gap approach: foreign aid should lead to higher investment [1.5 marks]
- From the Harrod-Domar model: higher investment should lead to higher growth [1.5 marks]
- Easterly presents evidence that contradicts both of these predictions:
 - Aid did not, on average, translate into greater investment [1.5 marks]
 - Greater investment did not, on average, translate into faster growth [1.5 marks]
 - Additionally, many countries, such as Singapore and Hong Kong, that achieved high growth did not have the savings/investment rates “necessary” for such rapid growth (in other words, they achieved high growth despite relatively low investment)
 - Finally, Easterly shows that some countries, such as Jamaica and Mozambique, with high levels of investment achieved little growth over the long run [the first two pieces of evidence were based on cross-country analysis, whereas the last two pieces of evidence are more anecdotal. If student provide these latter pieces of evidence, do not give full marks, but do give more than half]

17. a) What are the historical facts that Acemoglu, Johnson, and Robinson (2002) describe as “The Reversal of Fortunes”? [3 marks]

- Colonial areas that were among the richest following the onset of European colonization are among the poorest presently and vice versa

[To get full marks the student must clearly indicate areas that were colonized. If they simply say countries, without indicating that this only applies to countries that were colonized, given 2/3]

b) Are these facts consistent with geography being a fundamental determinant of variation in income per capita across countries? Why or why not? You need to provide the prediction of the geography hypothesis and describe whether this evidence is consistent with that prediction. [3 marks]

- No, these facts are not consistent with the geography hypothesis. [1 mark]
- If geography were a fundamental determinant of long-run growth than we’d expect the same countries to be rich both before and after European colonization as European colonization did not influence geography. [2 marks] However, this is not what the data reveals. Hence, the data is inconsistent with the hypothesis that geography is a fundamental determinant of long-run income.

18. The Solow model predicts that the differences in output per worker across countries are too large to be explained solely by differences in capital per worker across countries. Explain why. [6 marks]

- I can imagine students taking one of the following two approaches:
 - A numerical example:
 - Output per worker in the US is around 10 times output per worker in India

- The Solow model predicts that output per worker, y , is a function of capital per worker, k , according to: $y=k^\alpha$, where $0<\alpha<1$
 - A typical value for α is $1/3$, which would imply that the ratio of capital per worker necessary to explain the ratio in output per worker is $10^3=1000$ and we simply do not see differences this large across countries
- Discussing the size of the exponent on capital per worker in the production function:
 - Since capital per worker enters the production function with the exponent α and α is typically estimated to be in the range of 0.3 to 0.4, this means that capital per worker is a relatively small component of output per worker and thus differences in capital per worker across countries are unlikely to explain the large differences in output per worker

19. One argument from proponents of the financing gap approach to promoting faster growth in low-income countries through the provision of foreign aid is that these countries are too poor to save a large fraction of their income and thus their savings rate will be low. In the light of the institutions hypothesis and the three characteristics of good institutions, provide an alternative explanation as to why savings rates might be low in these countries. [6 marks]

- Savings rates might be low in these countries because the majority of individuals do not have strong incentives to invest in human capital or physical capital
- Good institutions protect private property, constrain the elites, and provide opportunity for broad segments of society
- If these conditions are not met, individuals might worry that the proceeds from their investment may be taken, expropriated, etc. by the government or other powerful elites
- This will weaken their incentives to invest and consequently to save

20. Acemoglu, Johnson, and Robinson argue that European colonizers used different colonization strategies in different colonies and that these initial differences led to long-run differences in GDP per capita across countries. Why? [6 marks]

- An important element of how colonization strategies differed was whether Europeans settled in large numbers and became the dominant population in the society or whether they were just a very small minority
- In places where they settled en masse, good institutions developed, whereas in places where they did not settle, bad or extractive institutions developed
- These initial differences in institutions, to a large extent, persisted over time as powerful elites would attempt to block attempts at institutional reform
- Consequently, in the long-run, citizens in countries with good institutions faced significantly better incentives to invest in human capital and physical capital than citizens in countries with bad institutions, leading to a long-run divergence in prosperity as countries with good institutions became rich and countries with bad institutions were left behind

21. a) Provide one example of a “good” institution. How does it satisfy the three characteristics of good institutions? [3 marks]

- Protection of private property rights
- Democracy
- Free labour market
- Rule of law
- Free and impartial judiciary

- The three characteristics to be met are:
 - Protection of private property rights
 - Constraints on elites
 - Opportunity for broad segments of society

b) Provide one example of a “bad” institution. How does it not satisfy the three characteristics of good institutions? [2 marks]

- Slavery
- Feudalism and serfdom
- Communism and autocracy more generally