



UNIVERSITY
OF
JOHANNESBURG

DEPARTMENT OF ECONOMICS AND ECONOMETRICS

TOPICS IN MACROECONOMIC ISSUES (MND9XO2)

FINAL ASSESSMENT: NOVEMBER 2016

APK CAMPUS

DATE: 25/11/2016

MARKS: 100

TIME: 3h00 HOURS

ASSESSOR: Prof. Kevin Nell

EXTERNAL MODERATOR: Prof. Manoel Bittencourt

INTERNAL MODERATOR: Dr. Sean Muller

Instructions:

- 1) The exam consists of 5 questions
- 2) Answer all the questions

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| SURNAME | |
| INITIALS | |
| STUDENT NUMBER | |
| CELL NUMBER | |

Mark schedule

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|----|------|---------|------|---------|------|---------|------|----|------|
| Q1 | | Q2 | | Q3 | | Q4 | | Q5 | |
| 10 | | (a)(10) | | (a)(10) | | (a)(15) | | 15 | |
| | | (b)(15) | | (b)(10) | | (b)(15) | | | |
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Total mark :

QUESTION 1

Suppose a developing economy experiences a permanent increase in its population growth rate at time $t = 0$. Assuming that the economy is in an initial steady-state position, use the Solow (1956) diagram to model the effect of an increase in the population growth rate. In addition, sketch a graph of how the natural logarithm (\ln) of output per worker evolves over time with and without the increase in the population growth rate. Does the increase in the population growth rate permanently affect the growth rate or level of output per worker? (**Hint:** The Solow diagram has the output-technology ratio (y) on the vertical axis and the capital-technology ratio (k) on the horizontal axis). **(10 points)**

QUESTION 2

Consider a typical cross-country growth rate regression model:

$$gpc_i = \alpha_0 + \alpha_1 PCY_i, \quad (1)$$

where gpc_i is the growth rate of per capita income in country i , and PCY_i is the initial level of per capita income.

- (a) Do empirical studies, in general, find evidence of unconditional convergence? Are these results incompatible with the long-run growth prediction of the Solow model? With specific reference to equation (1), provide a detailed explanation. **(10 points)**
- (b) Consider Rodrik's (2013) paper entitled: "Unconditional Convergence in Manufacturing". Compare and contrast Rodrik's findings with your answer in (a). What are the main policy implications for developing countries? Provide a detailed discussion. **(15 points)**

QUESTION 3

- (a) Distinguish between Kaldor's three growth laws and discuss their empirical relevance in the context African economies. **(10 points)**
- (b) What are the main determinants of structural change out of low-productivity sectors into high-productivity sectors in developing countries? You may draw on the empirical evidence in McMillan et al. (2014): "Globalization, Structural Change, and Productivity Growth, with an update on Africa." **(10 points)**

QUESTION 4

- (a) With an appropriate diagram, provide a detailed explanation of Sachs et al.'s (2004) poverty trap theory of sub-Saharan Africa (SSA), and how foreign aid can lift SSA out of its poverty trap. Assume the productivity trap version of the model. **(15 points)**
- (b) Provide a detailed overview of Rodrik's (2006) approach ("Growth Diagnostics") on how to initiate and sustain a growth transition in a typical developing country. How compatible is this approach with Sachs et al.'s poverty trap theory in (a) above? **(15 points)**

QUESTION 5

Rodrik (2008) advances the hypothesis that an undervalued real exchange rate can boost per capita income growth in developing countries. Discuss Rodrik's hypothesis with specific reference to the following: i) the theory that supports a link between undervaluation and growth in developing countries, ii) the empirical evidence in Rodrik (2008), and iii) specific policy measures to keep the exchange rate undervalued in developing countries. **(15 points)**