

Australian National University

Second semester examination – November 1998

ECONOMIC GROWTH (ECON8050)

Study Period: 30 minutes

Time Allowed: Three Hours

Permitted Materials: Calculator, Dictionary, One A4 page with notes on both sides

Instructions to candidates: there are six questions; students should complete Q1 and three additional questions. Answer all parts of the questions. Each question is worth 25 percent of the exam mark.

QUESTION 1 (compulsory)

Consider the Swan-Solow-Ramsey model of economic growth where y , output per effective unit of labour, is a strictly concave function $f(k)$ satisfying the Inada conditions, where k represents capital per effective labour unit. The population and labour force are growing at a constant rate, n , and labour augmenting technology, A_t , is growing at a constant rate, x . Consumption per effective labour unit is c ; the rate of capital depreciation is δ ; the rate of growth of population is n .

The representative consumer is maximising overall utility: $U = \int_0^{\infty} u(C_t) e^{-\rho t} dt$

where instantaneous utility is given by $u(C) = C^{1-\vartheta} / (1-\vartheta)$ which exhibits a constant elasticity of marginal utility, $-\theta$, with respect to per capita consumption, C .

- a) Derive and explain the steady state equilibrium conditions (where k and c are constant).
- b) Explain how and why an increase in the parameter θ affects the steady state level and rate of growth of consumption per capita.
- c) Draw the phase diagram in (c, k) space showing the steady state growth conditions for each variable. Show that starting from a relatively low value of k the economy will converge to the steady state along a stable saddle path.
- d) Explain how and why an increase in the parameter θ will alter the rate of saving and the rate of convergence to the steady state.

QUESTION 2

Discuss recent empirical evidence concerning the convergence (or otherwise) over time of per capita incomes across countries. Compare and contrast the Swan-Solow model and the technology transfer model in terms of their predictions and explanations for this evidence.

QUESTION 3

“The accumulation of skills and knowledge are both important in the process of economic growth, but skills die off with their possessors and it is only the accumulation of disembodied knowledge and ideas which can provide a satisfactory explanation of long-run endogenous growth.” Discuss.

QUESTION 4

- a) Why might coordinated industrialisation, or ‘Big Push’ policies be justified for developing economies? Explain the nature of the coordination problem.
- b) Murphy, Shleifer and Vishny (*Journal of Political Economy*, 1989) argue that the presence of demand externalities through the increased profits of industrialisation are not sufficient justification for big push interventions? Explain why not. What conditions do they identify as sufficient?

QUESTION 5

“The removal of barriers to trade may be expected to raise the level of per capita output of a country by some relatively small percentage, but there are no good reasons to expect the long-run growth rate to increase.” Discuss.

QUESTION 6

Socio-political factors such as civil liberties, income inequality and property rights are typically argued to be influential in determining growth rates to the extent that they influence investment. But empirical studies such as Barro’s (‘Economic growth in a cross-section of countries’, 1991) find that variations in rates of investment have relatively minor explanatory power over variations in rates of growth. Discuss both theoretical and empirical issues.