ECONOMICS TRIPOS Part IIB

Tuesday 25 May 2004	1.30 to 4.30

Paper 2

ECONOMIC PRINCIPLES AND PROBLEMS II

*Attempt **four** questions only.*

*Write your number **not** your name on the cover sheet of **each** Section booklet*

You may not start to read the questions printed on the subsequent pages of this questions paper until instructed that you may do so by the Invigilator

1. "Over the long run the route to macroeconomic stability has been to peg the exchange rate and forgo a monetary policy geared to domestic objectives". Discuss.

2. To what extent are the assumptions of imperfect competition and price rigidities substitutes or complements in generating New Keynesian results?

3. "In effect the Stability and Growth Pact has been suspended through the reluctance of France and Germany to manage their budget deficits to below 3% of GDP. This demonstrates the inadequacy of the way in which fiscal policy is conducted in Europe. We need to centralise fiscal policy in a European Fiscal Authority". Discuss.

4. According to Milton Friedman the optimal inflation rate is negative.

   (a) Explain Friedman's assertion. What does this imply for the setting of interest rates?

   (b) If the optimal inflation rate is negative why are so many policymakers in Europe and North America worried about the prospect of following Japan into deflation?

   (c) If a falling price level is actually undesirable how might Japan lift itself out of deflation?

5. Suppose that output, Y, in an economy is produced by combining physical capital, K,with skilled labour, H, according to a constant returns, Cobb-Douglas production function

$$Y = K^{\alpha}(AH)^{1-\alpha} \qquad 0 < \alpha < 1 \tag{1}$$

where A represents labour-augmenting technology that grows exogenously at rate g.

(a) Let u denote the (exogenously determined) fraction of an individual's time spent learning skills and let L denote the total amount of (raw) labour used in production, so that

$$H = e^{\psi u}L \qquad \psi > 0 \tag{2}$$

The accumulation of physical capital is given by the equation

$$\frac{dK}{dt} = s_k Y - \delta K \qquad \text{where } 0 < s_k < 1 \text{ and } 0 < \delta < 1 \tag{3}$$

The stock of (raw) labour grows at rate n, so $L_t = L_o e^{nt}$

(b) i. Explain the intuitive meaning for the constants ψ, s_k and δ.

ii. Show that the economy converges to 'steady state' levels of $\widetilde{k}$ and $\widetilde{y}$,where $\widetilde{y} = \frac{Y}{AH}$and $\widetilde{k} = \frac{K}{AH}$.

iii. Determine the steady state solutions for $\widetilde{k}$ and $\widetilde{y}$.

(c) A government is considering extending the period of compulsory education for children. Comment on the likely impact of this reform on both the level and the rate of growth of per-capita GDP.

(d) How might this model explain why large capital flows from developed to less developed countries are not observed?

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6. Consider the following basic RBC model with time-separable utility, where the discount factor of the representative household is $\beta \in (0,1)$. The instant utility function of the consumer is increasing in consumption, C_t, and decreasing in labour, L_t:

$$U(C_t, L_t) = \frac{C_t^{1-\sigma}}{1-\sigma} - \frac{L_t^{1+\mu}}{1+\mu} \text{ ,} \sigma, \mu > 0 \text{ and } \sigma \neq 1$$

Individuals maximise the expected discounted sum of utility

$$E_t \left(\sum_{t=0}^{\infty} \beta^t U(C_t, L_t) \right).$$

There is no capital, so that the equilibrium in the market for goods is $C_t = Y_t$, where Y_t denotes aggregate output. The production function is given by:

$$Y_t = A Z_t L_t \quad ,$$

where A and Z_t are strictly positive technological parameters. $\{Z_t\}$ is assumed to obey the following stochastic process:

$$Z_{t+1} = Z_t^{\alpha} e^{\epsilon_t} \quad ,$$

where $\alpha \in (0,1)$ and $\{\epsilon_t\}_{t=0}^{\infty}$ is a white noise process with mean zero. The real wage is denoted by W_t.

(a) Write the programme of the representative firm and that of the representative household, and derive the corresponding first order conditions using the Lagrange method.

(b) Define lower-case variables as follows: $l_t = \ln L_t$, $c_t = \ln C_t$, $w_t = \ln W_t$, $z_t = \ln Z_t$. Express l_t, c_t and w_t

   i. as a function of z_t

   ii. as a function of their own past and the innovation ϵ_t. Explain briefly where the persistence of the variables come from.

(c) Compute l_t as a function of w_t, and explain the role of μ in determining the response of labour to changes in the real wage.

(d) Microeconometric evidence suggests that σ is approximately 1.5 in the UK. Given this value, can the model roughly account for the pattern of business fluctuations that is seen in aggregate data?

7. Data from 1980s and 1990s show that the proportion of national savings retained domestically rather than invested abroad has been persistently lower for developing countries than for OECD member-countries

   (a) How would you account for this pattern of capital export?

   (b) Can such a pattern account for a propensity to external-debt crises?

   (c) Is there a consequent case for capital-account controls?

8. Driven by the United States' widening trade deficit, the U.S. current account deficit is larger than it has ever been, both as a share of the U.S. economy and in dollar terms. Yet we know that the discounted present value of national wealth must be non-negative.

   (a) How much longer can the United States continue to spend more than it earns?

   (b) By what means can the requisite re-balancing be achieved?

   (c) What would the international implications of such re-balancing be?

9. "While economic theory suggests that free capital movements should lead to consumption smoothing and more stable growth rates, evidence from developing countries which have experienced financial liberalization contradicts this". Discuss.

10. Discuss (a) the view that neither globalization nor technology can satisfactorily explain changes in income distributions within advanced countries, and (b) the extent to which the observation that the distribution of income across the world has two (twin) peaks contradicts the substantial empirical evidence from growth regressions that conditional convergence has taken place.

END OF PAPER