

Economics 614: Macroeconomics II

Spring 2006

Cornell University

Problem Set #7

Due: Monday, March 27, 2006

1 Full-employment Effects of Government Debt

$$Y = K^{1/2}L^{1/2}.$$

Savings out of disposable income, $s = .10$.

Labor force growth, $n = .02$.

Depreciation, $\mu = 0$.

Calculate:

- (1) \tilde{k}^* , the golden-rule capital-labor ratio
- (2) \tilde{k} , the maximum sustainable capital-labor ratio
- (3) k^0 , the steady-state capital labor ratio when $\Delta = 0$
- (4) Δ^{\max} , the maximum sustainable debt per head
- (5) Δ_{\min} , the maximum sustainable surplus per head

Plot:

(1) steady-state k on the vertical axis versus steady-state debt Δ on the horizontal axis

(2) steady-state consumption c on the vertical axis versus steady-state debt Δ on the horizontal axis

[Plotting hint: k is not in general a single-valued function of Δ . c is not in general a single-valued function of Δ .]