

Economics 613: Macroeconomics I

Fall 2006

Cornell University

Problem Set #7

Due: Friday, October 13, 2006

Full-employment Effects of Government Debt

Assume:

$$Y = K^{1/3}L^{2/3}.$$

Savings out of disposable income, $s = 0.08$.

Labor force growth, $n = 0.03$.

Depreciation, $\mu = 0$.

Calculate:

- (1) 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, and
- (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, and
- (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 .]