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March 14, 2005

Economics 614: Macroeconomics II
Spring 2005
Cornell University
Problem Set #8
Due: Monday, March 28, 2005

1 Full-employment Effects of Government Debt

$Y = 2K^{.75}L^{.25}$.
Savings out of disposable income, $s = .05$.
Labor force growth, $n = .01$.
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) $\Delta^{\max}$, the maximum sustainable debt per head
(5) $\Delta_{\min}$, 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.]