Econ 525a
Fall 2014
Yale University
Prof. Tony Smith

COURSE PROJECT

All students must complete this project in order to fulfill the term paper requirement for the course. Students may work in groups of one or two. Each group should submit a write-up of its findings, to include a brief description of the model, a detailed account of the numerical methods used to compute it solution, a full account of the findings (including graphs where appropriate), and a copy of the code.

The goal of this project is to use a canonical equilibrium model of inequality to determine the effect of the sudden imposition of a tax on wealth—as advocated by Thomas Piketty in *Capital in the Twenty-First Century*—on macroeconomic aggregates, inequality, and welfare. To this end, each group should accomplish three tasks.

First, solve for the steady state of the economy described in Aiyagari (1994), without taxes. Use the same calibration as in Aiyagari (1994), but allow for annual steady-state growth of 2% stemming from labor-augmenting technological progress (you will need to transform the economy into a stationary one in order to solve it) and adjust the discount factor accordingly to keep the capital-to-output ratio unchanged from its value in Aiyagari (1994).

Second, impose a 1% tax on holdings of capital, with proceeds from the tax distributed in a lump sum uniformly across the population, and recompute the steady state.

Third, compute the equilibrium transition path between the two steady states, imagining that the tax on capital is imposed suddenly and unexpectedly when the economy is in the steady state with no taxes. Report how aggregate capital and inequality change along the transition path and calculate the effect of the tax on capital on lifetime utility (expressed in units of consumption) by type of consumer in the initial steady state with no taxes.