

ECON501 2017

lab05

2.17. Social security in the Diamond model. Consider a Diamond economy where g is zero, production is Cobb–Douglas, and utility is logarithmic.

(a) **Pay-as-you-go social security.** Suppose the government taxes each young individual an amount T and uses the proceeds to pay benefits to old individuals; thus each old person receives $(1 + n)T$.

(i) How, if at all, does this change affect equation (2.60) giving k_{t+1} as a function of k_t ?

(ii) How, if at all, does this change affect the balanced-growth-path value of k ?

(iii) If the economy is initially on a balanced growth path that is dynamically efficient, how does a marginal increase in T affect the welfare of current and future generations? What happens if the initial balanced growth path is dynamically inefficient?

(b) **Fully funded social security.** Suppose the government taxes each young person an amount T and uses the proceeds to purchase capital. Individuals born at t therefore receive $(1 + r_{t+1})T$ when they are old.

(i) How, if at all, does this change affect equation (2.60) giving k_{t+1} as a function of k_t ?

(ii) How, if at all, does this change affect the balanced-growth-path value of k ?

<http://listinet.com/bibliografia-comuna/Cdu339-52C2.pdf>