

Problem Set #7

Econ 8105-8106
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Consider an economy with one representative consumer, one representative firm, and a government that must finance a given stream of expenditures, g_t .

1. Show that the Tax-Distorted Competitive Equilibrium allocation that results when the government taxes the consumer's labor and capital income can also be attained if the government instead taxes the firm's purchases of labor and capital.
2. Suppose the government only taxes the consumer's purchases of consumption goods, and balances its budget in each period. Show that the TDCE allocation solves a social planner's problem (write explicitly this social planner's problem).
3. Consider economy where government can use only taxes on capital income τ_{kt} and labor income τ_{nt} . Consider another economy where government can use only taxes on consumption $\hat{\tau}_{ct}$ and labor income $\hat{\tau}_{nt}$. In both economies the government has to finance the same stream of expenditures g_t . Show that given τ_{kt} and τ_{nt} , there exist $\hat{\tau}_{ct}$ and $\hat{\tau}_{nt}$ so that TDCE is the same in both economies, and vice versa.
4. Suppose the government finances its purchases through a tax on both labor income and capital income at the constant rate τ .
 - (a) Characterize the steady-state of the TDCE, and show how steady state capital stock, consumption, and labor supply depends on the tax rate τ .
 - (b) Is there a way to reach the same steady state allocations using, instead of income taxes, taxes on the purchases of consumption and investment goods?
 - (c) Suppose that instead of purchasing g_t , the government uses the revenue from income taxes to subsidize purchases of consumption and investment goods and balances its budget in every period. Is there a way to do this so that the steady-state TDCE allocation is the same as if there were no government at all?