Problem Set 6

UCLA - Econ 102 - Fall 2018

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Another Numerical Example

During lecture 9, we studied the aggregate demand effects of tax cuts on the bottom 90% financed by tax increases on the top 10%. In this problem, we study another example of these aggregate demand effects, looking at redistribution from the top 1% income share to the bottom 99%. *An important warning*: Again, note that this model only has Keynesian, aggregate demand effects. However, raising taxes on high income earners certainly has effects on the supply side as well. Raising taxes on the top 1% probably also has effects on entrepreneurship, incentives to take risk and create jobs, which are not taken into account here. (Symmetrically, changing taxes on the bottom 99% also may have effects on their incentives to work.) Whether these supply effects are sufficiently large to offset and perhaps even overturn the aggregate demand effects we focus on here is controversial, subject to heated debates and outside of the scope of the class.

To illustrate the effects on aggregate demand of redistributive policies between the top 1% and the bottom 99%, we now use the same notations as in lecture 9. There is a share $\lambda = 99\%$ of population N who are in the bottom 99%, who earn individual income $\underline{y}$, pay net taxes $\underline{t} = \underline{t}_0 + t_1\underline{y}$, have an MPC $\underline{c}_1$, baseline consumption $\underline{c}_0$. Notations for high income are similar, but with bars: $\bar{y}$, $\bar{t} = \bar{t}_0 + t_1\bar{y}$, $\bar{c}_1$, $\bar{c}_0$. Total GDP is Y, investment is $I = b_0 + b_1 Y$, government spending is exogenous and equal to G.

1. Use Google to find out how much income would put you in the top 1%.
2. The World Income Database suggests that the top 1% captures approximately 20% of total U.S. income in 2017, while it was approximately 10% in 1980. Using the notations of the class, what is $\gamma = \bar{y}/\underline{y}$?
3. Compute aggregate consumption $C = \underline{C} + \bar{C}$, as in lecture 9, using the following notations:

$$
\begin{aligned}
c_1 &\equiv \frac{\lambda\underline{c}_1 + (1-\lambda)\,\gamma\bar{c}_1}{\lambda + (1-\lambda)\gamma} \\
C_0 &\equiv \lambda N\underline{c}_0 + (1-\lambda)N\bar{c}_0 \\
\underline{T}_0 &\equiv \lambda N\underline{t}_0 \\
\bar{T}_0 &\equiv (1-\lambda)N\bar{t}_0.
\end{aligned}
$$

4. What is an economic interpretation for c_1 ? Calculate c_1 if $\underline{c}_1 = 1$ and $\bar{c}_1 = 1/4$.
5. Using the expression for I, and for aggregate consumption C, compute Y.
6. Assume that $t_1 = 1/4$ and $b_1 = 1/6$. Compute the impact on GDP of a 100 billion dollars tax cut on the top 1%. What is the impact on the government deficit of such a cut?
7. Assume that $t_1 = 1/4$ and $b_1 = 1/6$. Compute the impact on GDP of a 100 billion dollars tax cut on the bottom 99%. What is the impact on the government deficit of such a cut?
8. Assume that $t_1 = 1/4$ and $b_1 = 1/6$. Compute the impact on GDP of a transfer of 100 billion dollars from the top 1% to the bottom 99%. What is the impact on the government deficit of such a transfer?
9. What happens if there are no automatic stabilizers in this economy ($t_1 = 0$)? Explain.