(1)

2

Good !

Student ID....5604640077.....

EE312 Macroeconomics, 2/2014 (Sec. 046402)
Problem Sets 3

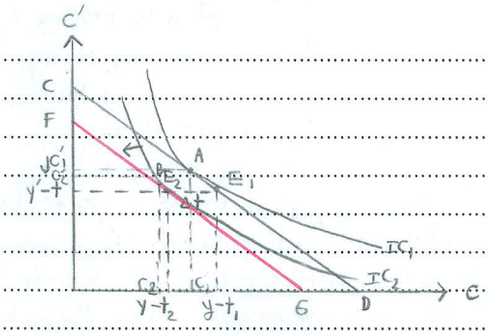
Please submit at the BE office, 5th floor department of Economics building.
Deadline of submission : Friday, 10 April, 2015, before 15.00 hrs.
You may **submit on or before** the deadline.
Late submission will not be accepted.

1. Consider the following effects of an increase in taxes for a consumer.

   (a) The consumer's taxes increase by Δt in the current period. How does this affect current consumption, future consumption, current saving?

   (b) The consumer's taxes increase permanently by Δt in the current period and future period. Using a diagram, determine how this affects current consumption, future consumption, and current saving. Expain the differences between your results here and in part (a).

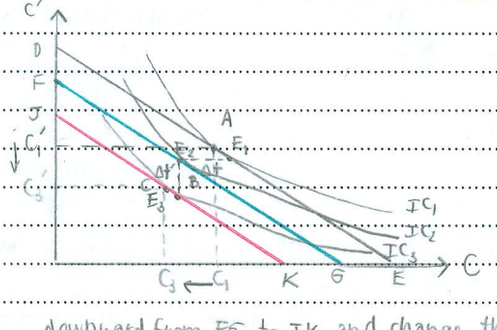
(a)



Initially, current disposable income is $y-t_1$ and future disposable income is $y'-t'$. The endowment point is point E_1 on budget line CD and indiffence curve IC_1. The optimal bundle is at point A. When taxes increase by Δt in the current period from t_1 to t_2. Consumer's disposable income decreases from $y-t_1$ to $y-t_2$ which causes budget line to shift horizontally to the left. The new endowment point is at point E_2 on budget line FG and IC_2. While consumer's new optimal bundle is at point B. So, $|E_1E_2| = \Delta t$ and future disposable income remains the same. When current disposable income decreases, consumer consumes less of both current consumption and future consumption since both current consumption and future consumption are normal good. Current consumption decreases from c_1 to c_2 while future consumption decreases from c_1' to c_2'. However a decrease in current consumption is less than a decrease in current disposable income because consumption is smoothing. From $y-t = c+s$ we get $\Delta y - \Delta t = \Delta c + \Delta s$. So, $\Delta s = (\Delta y - \Delta t) - \Delta c$. Since a decrease in consumption is less than a decrease in income, current saving decreases (Δs is negative)

$\Delta y - \Delta t = \Delta s + \Delta c$
$0 - \Delta t = \Delta s + \Delta c$
$-\Delta t - \Delta c = \Delta s$
$- + = \Delta s$

(b.)



Initially, the optimal bundle is at point A on indifference curve IC_1 and budget line DE. The endowment point is at point E_1. when tax increases in current period by Δt, current disposable income decreases which cause the budget line to shift horizontally to the left from DE to FG and change the endowment point from E_1 to E_2. So, $|E_1E_2| = \Delta t$. When tax increases in the future period, future disposable income decreases which causes the budget line to shift vertically downward from FG to JK and change the endowment point from E_2 to E_3. So, $|E_1E_3| = \Delta t'$. And the new optimal bundle is at point C. The effect of permanent increase in tax is AC. A decrease in both current disposable income and future disposable income cause consumers to consume less of both current consumption and future consumption due to pure income effect since both current consumption and future consumption are normal good we can see from the graph that current consumption decrease from c_1 to c_3 while future consumption decreases from c_1' to c_3'. And since a decrease in current consumption is less than a decrease in current disposable income. Thus, the current saving decreases.

The difference between the result is that a temporary increase in tax has smaller negative effect on life time wealth and current income and current consumption than a permanent increase in tax.

$- \quad + \quad (+)$

ส่วนของภาษี

2. Consider the following statement and do all parts of this question.

"**The man** who tweezes my unruly eyebrows into submission announced proudly that **he just spent his tax rebate on a $100 Hermes Throws**. As he sees it, the governement subsidize the blanket he wanted to by for last six months.

This raises a question on the effectiveness of expansionary fiscal policy. Theoretically, people should not increase consumption in response to a small, temporaty increase in income. Or tax payers might recognize that their future taxes will increases."

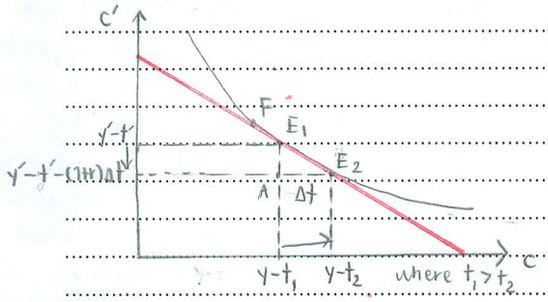
Source: http://www.economist.com/blogs/freeexchange/2008/05/ricardian_equivalence_in_dead

(a) Discuss the theory that explain why people should not increase consumption in response to a temporary decrease in the tax since they recognize that their future taxes will increase.

(b) According to the theory in question 2a, is expansionary fiscal policy always effective?

(c) Is the theory in question 2a consistent with **the man**'s behaviour in the statement above? Give one possible reason why the theory may fail in practice.

(2a) The theory that explain why people should not increase consumption in response to a temporary decrease in tax is "Ricardian Equivalence". Ricardian Equivalence Theory assumes that If there is a decrease in current tax, there will be an increase in the present value of future taxes with the same amount of a decrease in current tax.



Initially, current disposable income is $y-t_1$ and the future disposable income is $y'-t'$. When current tax decreases by Δt from t_1 to t_2, current disposable income increases from $y-t_1$ to $y-t_2$. And when future tax increases by $(1+r)\Delta t$, the future disposable income decreases from $y'-t'$ to $y'-t'-(1+r)\Delta t$. However, these change in current tax and future tax do not change the life time wealth. Thus, the budget line remains the same, Not only the life time wealth remains the same, the consumption bundle also remains the same. The only thing that changes is the endowment point in which it moves from E_1 to E_2 in which AE_2 is Δt, while AE_1 is $(1+r)\Delta t$. The reason that the consumption bundle remains the same is that the representative consumer saves an increase in his/her current disposable income which equals to Δt to pay for a higher future tax. at point F.

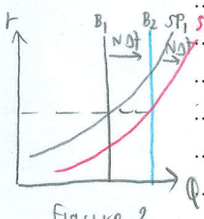


Figure 2.

Thus, the representative consumer does not consume more in the current period, even though his/her disposable income increases. Thus private saving increases by $N\Delta t$. Moreover, for the government, the theory assume that government's spending remains the same for both current period and in the future. Due to a decrease in tax by $N\Delta t$, government has to borrow more by $N\Delta t$. So, the demand for fund in the credit market shift to the right by $N\Delta t$. Since demand and supply for fund increase by the same amount, equilibrium real interest rate remains the same as shown in figure 2. → Thus, supply for fund in the credit market shift to the right by $N\Delta t$.

(2b) According to "Ricardian Equivalence" theory, the expansionary fiscal policy is not always effective. As we can see from 2a that even though, the government want to stimulate the economy by cutting the current tax, the consumer's consumption remains the same rather than increase as government expects. This happens because the consumers regcognize that the government will increase tax in the future. So, they save the amount of an increase in current disposable income to pay for future tax rather than increase their consumption.

(2c) The "Ricardian Equivalence" Theory is not consistent with the man's behavior. Since, the man use an increase in current disposable income due to a reduction in tax on consumption good rather than save it to pay for higher tax in the future as theory said. One possible reason that theory may fail in practice is that many old people who think they will live no longer than this period will enjoy the tax cut and higher disposable income since they don't have to save the amount of an increase in disposable income. Because they think they do not live until the government charge higher tax in the future.