Techit Thongprasertkul NO. 5802641570

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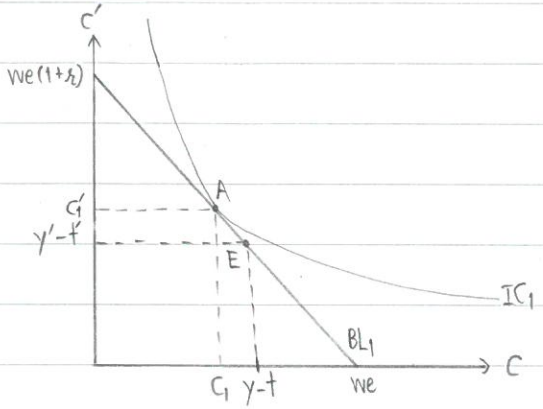
Assignment 5

1.1)



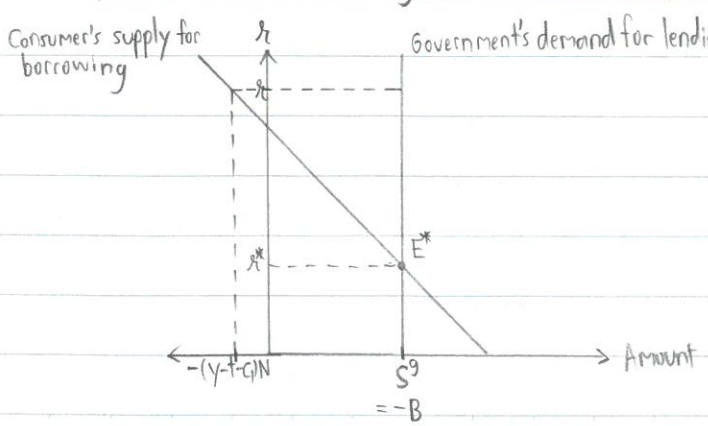
V. good

② flow of the writing is good clear and logically coherent.

In the initial situation, representative consumer has current disposable income y-t and future disposable income y'-t'. At the endowment point E, it represents Autarky consumption where the consumer doesn't save or borrow, and he consumes the same amount as disposable income in that period. Given real interest rate r, the consume will face budget constraint at BL_1. ~~better we to to refle to an initial test of r under consideration~~ This lifetime weath we represents the present value of lifetime disposable income which is equal to the present value of consumption. If he uses all incomes to spend on future consumption, he can consume we(1+r). With additional current consumption, he will have to sacrifice future consumption by the relative price of current consumption in terms of future consumption. good Given BL_1, the consumer will maximize his utility at A where $MRS_{c,c'}$ is equal to relative price of c in terms of c'. He consumes at (c_1, c'_1) and save $y-t-c_1$. The reason that he is saving may be having relatively high y-t or high r. ✓

good

1.2) If the government adopts the budget surplus policy which means spendings are less than collecting taxes, it has to lend this excess revenues to private sector to meet budget constraint. Moreover, there will be opportunity cost of holding this revenues. The competitive equilibrium will occur when the following conditions are satisfied. The consumer optimizes current and future consumption. Government budget constraints hold. The credit market clears. The first two conditions have already been met from above, but the credit market doesn't clear. At this real interest rate r, both the consumer and the government become lenders. There will be excess saving; therefore, competitive equilibrium will not happen at r. ✓



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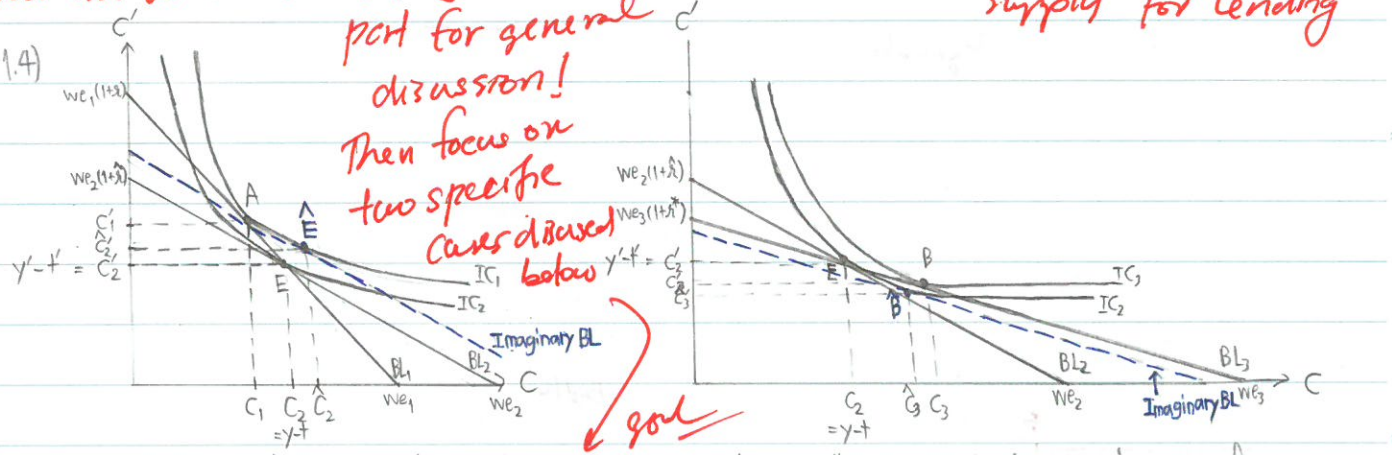
1.3) Since the government want to adopt budget surplus policy, its demand for lending will not be affected by change in interest rate. To achieve competitive equilibrium, the consumer must become borrower. Real interest rate must fall to induce him to be borrower. If interest rate rise, revealed preference suggests that the consumer will remain as a lender whichever effect is dominant.

To see the mechanism of how the consumer becomes borrower, we need to see the effect of falling interest rate first. As a lender, substitution effect makes relative price of future consumption in terms of current consumption more expensive, then he will choose C more and C′ less. Income effect make his saving yielding less future income, then he choose both C and C′ less. The consumer will be borrower only when S.E. dominates I.E since net effect is higher C, lower C′, and less saving given y-t. As interest rate drops, his saving will decrease until saving is zero. As a borrower, S.E. make C relatively cheaper, then he chooses C more and C′ less. While I.E. make loans for C less expensive, so he increases both C and C′. Since we assume that S.E. is dominant, net effect will be higher C, lower C′, and more borrowing given y-t. The interest rate will decrease to the point where supply for borrowing is equal to government's demand for lending; therefore, the credit market clears. The graph in the previous page is valid only when S.E. is dominant as well. It shows that the competitive equilibrium will happen at point E^* in the credit market. The equilibrium real interest rate is r^* and equilibrium consumer's borrowing is S^g.

good that you set out this part for general discussion! Then focus on two specific cases discussed below

"supply for lending"

1.4)



good

We divide the analysis of competitive equilibrium allocation into two parts. The first part is when the consumer refuses lending. The second part is when he wants to borrow. For the first part, interest rate is expected to fall from r to $\hat{r}$. Budget line will be flatter due to lower relative price of C and it will rotate around endowment point E from BL_1 to BL_2. Lifetime wealth will increase to we_2. Now the consumer face the new budget constriant at BL_2, so he will maximize utility at E given $\hat{r}$. Indifference curve will shift down from IC_1 to IC_2 because point E has appeared on the BL_1 but he consumes at A meaning that utility at A is higher than that at E. S.E. cause the consumer to change decision from (C_1, C_1') to $(\hat{C}_2, \hat{C}_2')$. I.E. cause him to move from $(\hat{C}_2, \hat{C}_2')$ to (C_2, C_2'). With dominant S.E, C will be higher and C′ will be lower. There is no saving.

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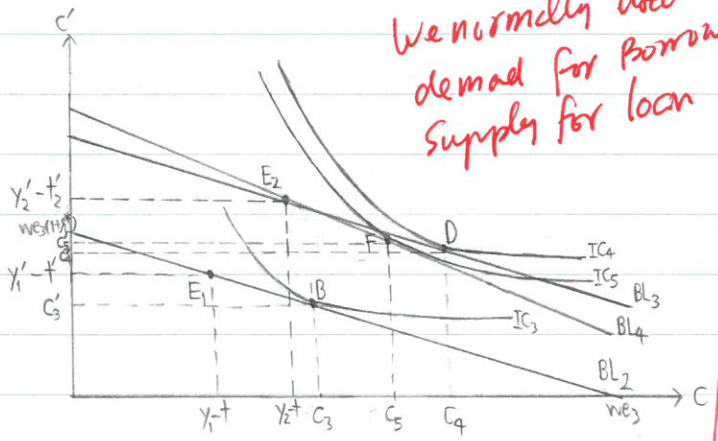
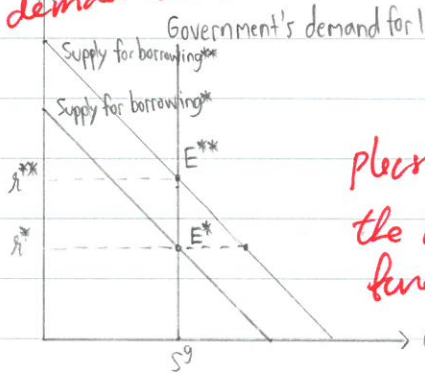
1.4) continue For the second part, interest rate must be lower to induce the consumer to borrow. Interest rate will drop from $\hat{r}$ to r^*. Budget line will be even flatter and rotate around endowment point E from BL_2 to BL_3. Lifetime wealth will increase to we_3 while future value of lifetime wealth will decrease to $we_3(1+r^*)$. The consumer faces new budget constraint at BL_3, so he optimizes consumption at point B given r^*. In order to make sure that he will borrow, it require additional assumption that there is positive income effect, otherwise IC will not shift up and the consumer will be indifferent between borrowing and not borrowing. With this assumption, IC shift up from IC_2 to IC_3. S.E. cause him to move from (C_2, C_2') to $(\hat{C}_3, \hat{C}_3')$. I.E. cause him to move from $(\hat{C}_3, \hat{C}_3')$ to (C_3, C_3'). With dominant S.E., C will be higher and C' will be lower. He will borrow $C_3-(y-t)$ units. When we combine two parts, net effect is higher C, lower C', more borrowing, but his utility depends on size of change in interest rate and magnitute of net income effect.

goal The consumer has already optimized consumption given r^*. From the question 1.2), government's budget constraint holds. At this r^*, consumers' borrowing $(C_3-(y-t))\times N$ will equate to government's savings S^g; therefore, national savings is zero and thus the credit market clears. The competitive equilibrium happens at point B in consumption-savings framework and at E^* in credit market

We normally used demand for borrowing = supply for bond
Supply for loan = demand for Bond.

1.5)





please refer to the loanable fund framework!

Before permanent income increases, initial competitive equilibrium occurs at B where consumer choose (C_3, C_3') and at E^* where consumer borrow at S^g given r^*. From Friedman's permanent income hypothesis, it suggests that level of current consumption depends on level of permanent income. If income increase temporarily, savings will increase due to consumption-smoothing behavior. However, increase in permanent income doesn't need for savings and he can consume as much as or more than new income. When permanent income increases, the endowment point will move from E_1 to E_2. His income will rise by Y_2-Y_1 or $Y_2'-Y_1'$. BL shifts up to BL_3. Since he can consume more than the new income, he can borrow more to maximize utility at point D. He will choose (C_4, C_4'). With more borrowing, it cause supply for borrowing shift to right. At r^*, there will be excess supply for borrowing and thus credit market doesn't clear. Interest rate has to rise to r^{**} to eliminate this excess supply. BL will be steeper and rotate around endowment point E_2 due to more expensive relative price of C. S.E make C relatively expensive, so

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1.5) continue he choose C less and C' more. While I.E. make loans more expensive, then he reduce C and C'. With assumption that S.E. dominates I.E., he will decrease C from C_4 to C_5 and increase C' from C_4' to C_5'. His new borrowing $C_5-(Y_2-t)$ will be equal to initial borrowing $C_3-(Y_1-t)$. The competitive equilibrium will happen at F in this framework and at E^{**} in credit market. The consumer consumes at (C_5, C_5') and his utility depends on size of increase in permanent income and size of increase in real interest rate. Equilibrium real interest rate is r^{**} which is higher than before.

The analysis so far has been assumed that the consumer wants to increase in C more than increase in permanent income. There are the other two cases. When increase in C is less than increase in permanent income, he will save the leftover income and borrow less. Supply for borrowing will shift to the left ; therefore, real interest rate will drop. The process will be reversed to the first case.

The last case is when he use all increase in permanent income to consume today. He will borrow the same amount and thus real interest rate remain unchanged.

V. good