

$$9 + 10 + 7 = 26$$

Member →

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Group of 5 - 7 students.

EE312 Macroeconomics, 1/2020 (Sec. 046401)

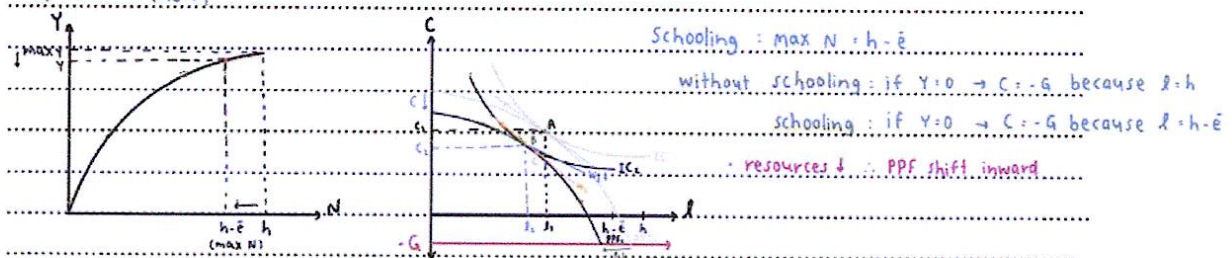
Homework: Ch.7 A Closed Economy One-Period Macroeconomic Model

Deadline of submission 28 October in the class.

1. In one-period model, education can be represented as time spent by the representative consumer that is neither leisure nor time applied to producing output. What the economy gains in the future is that the representative consumer then has more time available, as measured in terms of effective units of labour time (adjusted for skill level, or what economists call human capital).

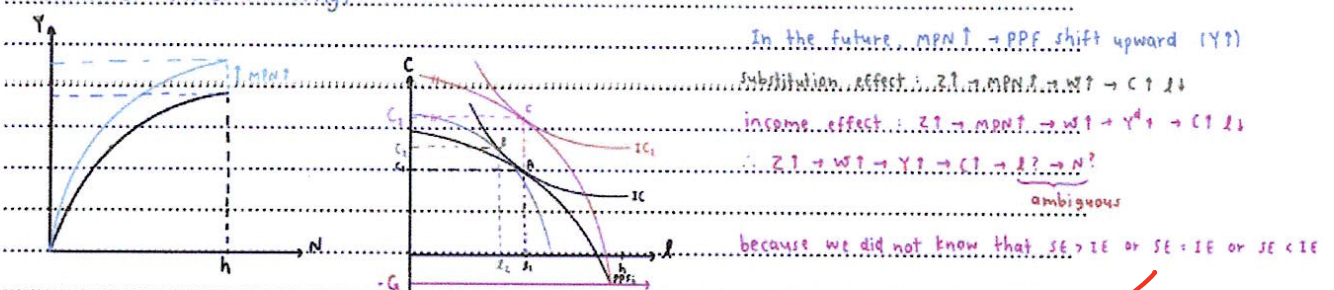
- Using the one-period model, show what effects additional education has in the present on consumption, leisure, employment, aggregate output, and the real wage.
- Similarly, show the effects of the additional education that people acquire today will have in the future consumption, leisure, employment, aggregate output, and the real wage.
- What does your analysis in parts (a) and (b) have to say about trade offs society makes between the present and the future in investing in education.

a) $\bar{e} \uparrow$ (now)



- Resource ↓ → PPF shift inward
- Resource ↓ → max $N \downarrow \rightarrow Y \downarrow$ (Aggregate output ↓)
- Consumer max u at point B (C_2, l_2)
- $w \downarrow$ (from C to B)

b) future (after schooling)



c) Increasing in $\bar{e}$ leads a loss of social welfare in current period since the consumption decrease and leisure decrease but it can compensate by increase the level of consumption and possibility of increasing in leisure and also get a higher utility.

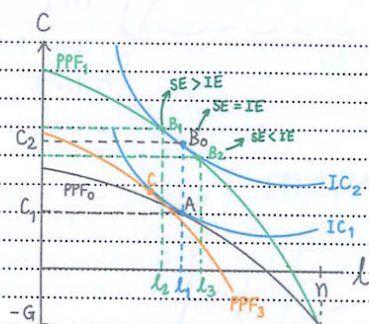
trade-off ? is it worth to have education ?

benefit vs. cost
explain all possible cases

2. Suppose that government spending makes private firms more productive; for example, government spending on roads and bridges lowers the cost of transportation. This means that there are now two effects of government spending, the first being the effects discussed in this chapter of an increase in G and the second being similar to the effect of an increase in the nation's capital stock K .

- (a) Show that an increase in government spending that is productive in this fashion could increase welfare for the representative consumer.
- (b) Show that the equilibrium effects on consumption and hours worked for an increase in government spending of this type are ambiguous but that output increases. You must consider income and substitution effects to show this.

10

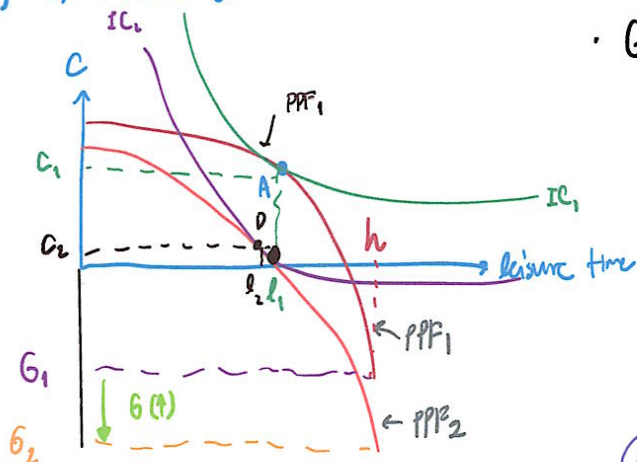


(b) According to the graph, we will see that output will be increase, but the equilibrium effect on consumption and hours worked for an increase in government spending of this type are ambiguous. Because we will have three causes of new equilibrium which are B_0 , B_1 and B_2 depend on which effect is stronger, substitution or income, or both effects are equally affect the equilibrium.

10

a.

2A) I) increase $G \uparrow$



$G \uparrow \rightarrow$ PPF shifts downward

• pure income effect

- $C \downarrow$ from C_1 to C_2
- $l \downarrow$ from l_1 to l_2
- $N \uparrow$ from $(h - l_1)$ to $(h - l_2)$

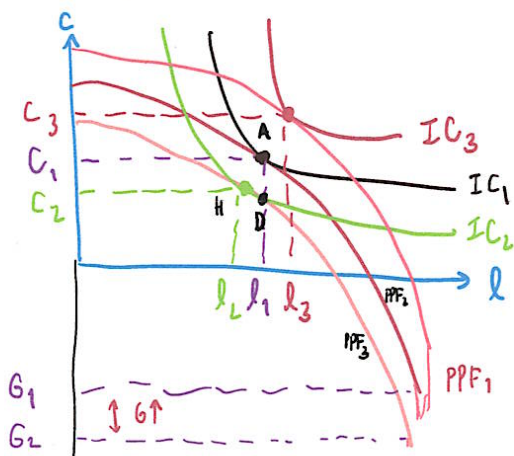
• $MPN \downarrow$

• $w \downarrow$

• $Y \uparrow$

G from $Y = C + G$; $\Delta G > \Delta C$

II) $G(\uparrow), K(\uparrow)$



$Z(\uparrow) \rightarrow$ PPF shifts upward

• $MPN(\uparrow)$

• $w(\uparrow)$

SE $\rightarrow l(\downarrow), C(\uparrow)$

IE $\rightarrow l(\uparrow), C(\uparrow), Y(\uparrow)$

TE $\rightarrow C(\uparrow)$ for sure but

l depends on

SE = IE ; $\bar{l}, \bar{N}$

SE > IE ; $l(\downarrow), N(\uparrow)$

SE < IE ; $l(\uparrow), N(\downarrow)$

$\therefore$ To sum up we have 3 different results from $G \uparrow, Z \uparrow$ which are

1) SE > IE : $Y \uparrow, C$ (depend on which effect is greater), $N \uparrow$

2) SE = IE : $Y \uparrow, C$ _____, $N \uparrow$

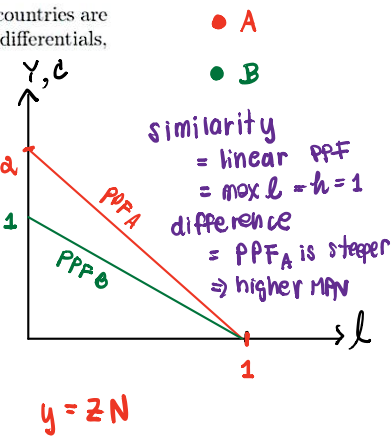
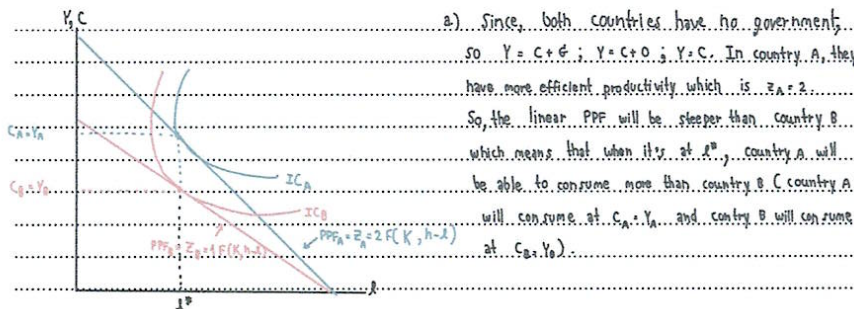
3) SE < IE : $Y \uparrow, C$ _____, N (depend on which effect is greater)

After increasing $G(\uparrow)$ and $K(\uparrow)$, it will affect a higher Y and hire more labor that will lead to an increase in welfare for customer

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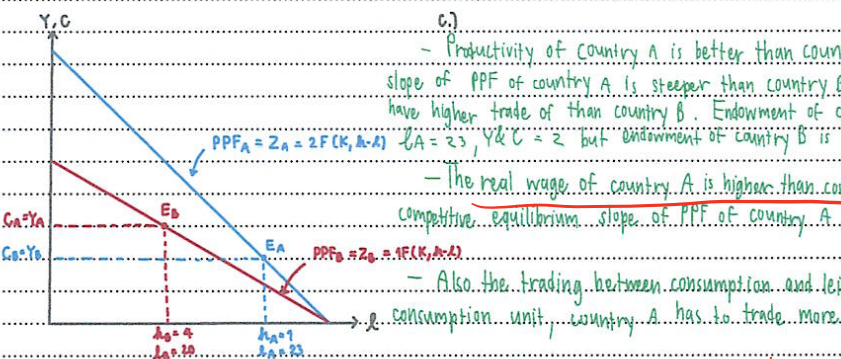
3. Suppose there are but two countries, namely A and B. Each country is indexed by "j" for $j = A$ and B. Both countries have no government, i.e. $G_j = T_j = 0$. Suppose the technology of both countries are linear production in labor hours. That is, $y_j = z_j N_j$ where N_j is the number of working hours in country j and z_j is the level of technology in country j . Suppose that $z_A = 2 > z_B = 1$ and preferences of consumers in both countries are identical

- Assuming a fixed time endowment in both countries to be equal to 1 unit, construct the PPF of each country. Putting both PPFs in the same figure and locate all important points. Comments on the differences and similarities between the two PPFs.
- Determine the competitive equilibrium in both countries. Is there any wage differentials in the equilibrium? Which one of the country is supposed to experience a higher wage? Why? How about the allocation in both countries?
- Redo the problem (a) and (b) above, but instead assume that the labor endowment in both countries are different, i.e. $h_A = 1$ and $h_B = 4$. Comment on the possible sources that generate the wage differentials, if any?



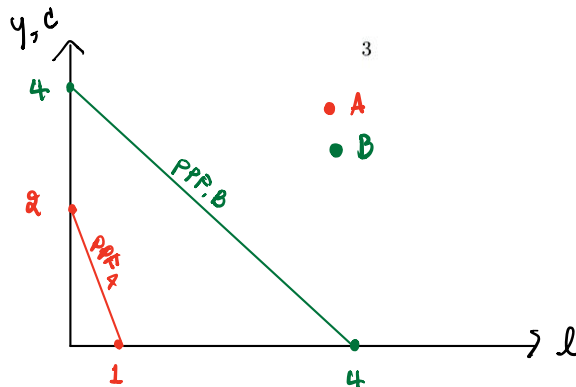
b. Wage = slope of PPF at the point where IC is tangent to PPF
Hence, country A is supposed to experience a higher wage.

b). According to steeper PPF of country A, MPN (real wage) of country B will be higher than country A leading to increasing labor supply in country A because the trade off between consumption and leisure in country A costs more than country B to get 1 hour of leisure, country A needs to sacrifice more units of consumption than country B. Or, we can say that when real wage is higher, leisure becomes relatively more expensive.



graph is wrong.

c)



source of wage differential = productivity of worker.