ECON10003
INTRODUCTORY MACROECONOMICS
SEMESTER 1, 2021

REVIEW SESSION 2

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Keynesian Model

- Basic Keynesian Model is a short run model
- Prices do not change
- Firms adjust quantities
- Planned Aggregate Expenditure (PAE)
- All component of PAE are realised except for I^P
- Demand determines output
- Government policy can help stabilise the economy
- Multiplier
- Fiscal Policy - Theory => G and T
- Fiscal Policy – Empirics
    - GFC
    - COVID19
- Fiscal Policy and Public Debt

- $B_t - B_{t-1} = G_t + Q_t + rB_{t-1} - T_t$

1. A three-sector economy is described by the following equations

$$C^d = 300 + 0.6\,(Y - T)$$
$$I^P = 500$$
$$G = 1000$$
$$T = 1000 + 0.1Y$$

a) Find an equation linking planned aggregate expenditure to output.
b) What is the level of exogenous expenditure in this economy?
c) What do we mean by the marginal propensity to consume? What is the marginal propensity to consume in this economy?
d) What is the equilibrium level of GDP?
e) What is the value of the multiplier in this economy?
f) Sketch a graph of the PAE and the consumption function, labelling the axes of the graph. Discuss the economic meaning of (a) a movement from left to right along the graph of the consumption function; and (b) a parallel upward shift of the consumption function.

Answer:

a) The equilibrium condition of the model is that planned aggregate expenditure equals output. The following equation relates planned aggregate expenditure to output:

$$PAE = C^d + I^P + G$$

$$= 300 + 0.6(Y - T) + 500 + 1000$$

$$= 300 + 0.6\,(Y - (1000 + 0.1Y) + 500 + 1000$$

$$= 1800 + 0.6(Y - 1000 - 0.1Y)$$

$$= 1800 + 0.6Y - 600 - 0.06Y$$

$$= 1200 + 0.54Y$$

(b) The level of exogenous spending is 1200.

(c) The marginal propensity to consume reflects by how much consumption increases when there is a one unit increase in household disposable income. In this economy, the marginal propensity to consume is: 0.6 => 60% of disposable income will be spent on consumption.

(d) In equilibrium, PAE = Y

$\rightarrow Y = 1200 + 0.54Y$

$\rightarrow Y - 0.54Y = 1200$

$\rightarrow Y = 2608.7$

The exogenous level of planned aggregate expenditure is 1200. The equilibrium level of output, solving the above is Y = 2608.7

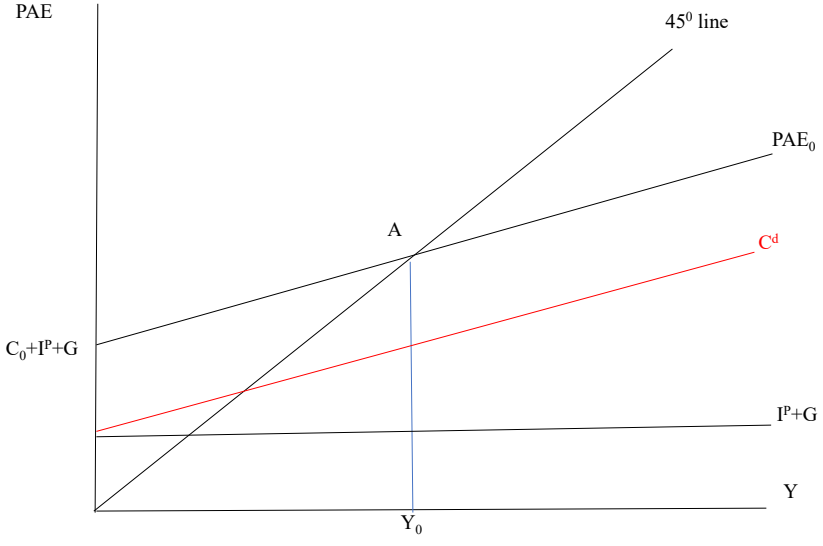
(e) The multiplier is given by

$$\begin{aligned} Y &= \bar{C} + c(Y - (\bar{T} + tY)) + I^P + G \\ \rightarrow (1 - c + ct)Y &= \bar{C} - c\bar{T} + I^P + G \\ \rightarrow Y &= \frac{\bar{C} - c\bar{T} + I^P + G}{1 - c + ct} \end{aligned}$$

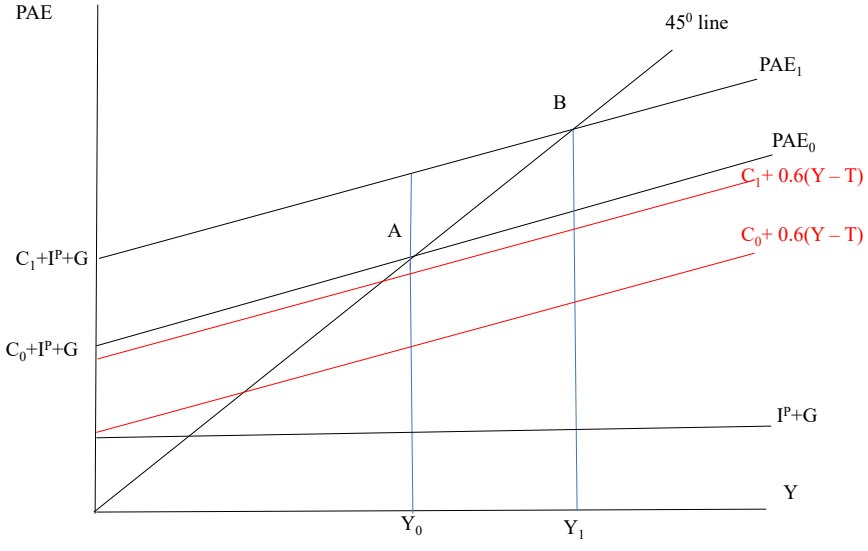
which implies the multiplier is $\frac{1}{1-c+ct}$.

1/(1- c + ct) = 1/ (1 – 0.6 + 0.6 x 0.1) = 1/ 1- 0.6 + .06) = 1/(1- 0.54) = 1/ 0.46 = 2.17

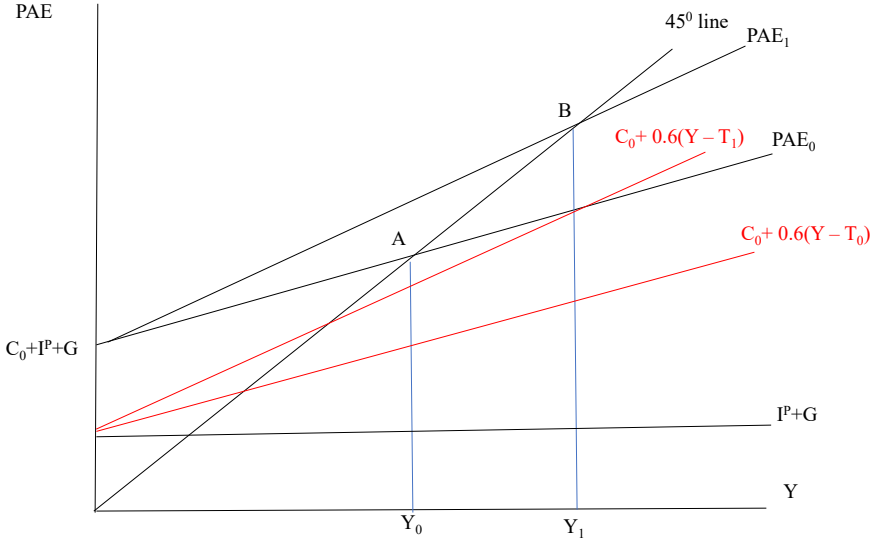
f)



f)


PAE
45⁰ line
PAE1
B
PAE0
C1+ 0.6(Y – T)
A
C0+ 0.6(Y – T)
C1+IP+G
C0+IP+G
IP+G
Y
Y0
Y1

f)



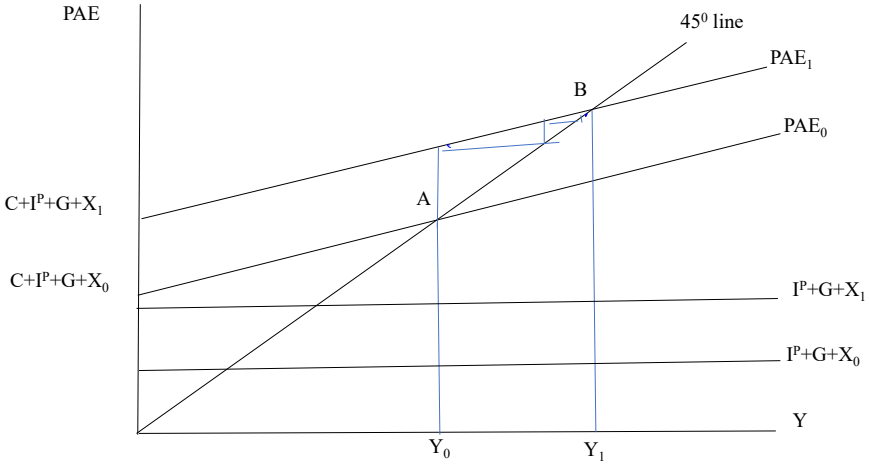
2. In recent months, there has been some discussion of a free trade agreement between Australia and Indonesia. Each country has agreed to abolish almost all tariffs on the goods of the other country.

Government of the both countries are hopeful that this agreement will benefit both the economies. Use the Keynesian model of the macroeconomy to describe what effect this will have upon the Australian economy. Be specific and describe what components of expenditure are affected and why. Discuss the adjustment process associated in moving from an initial equilibrium (before the agreement) to a final equilibrium (after the agreement) in detail. In particular, discuss the mechanism that leads to a change in output. Include a relevant diagram

Answer:

Initially assume that the economy is at an equilibrium that can be described by A with planned aggregate expenditure is equal to actual output. Keeping all else same, with the free trade agreement will increase our exports which will result in an exogenous shift of PAE upwards.

PAE: C + I + G + X − M.


PAE
45⁰ line
PAE1
B
PAE0
C+IP+G+X1
A
C+IP+G+X0
IP+G+X1
IP+G+X0
Y
Y0
Y1

This will increase PAE at Y_0 so that PAE > Y_0. We now have a disequilibrium, increase in export increase in output by the same amount but as output increases because of marginal propensity to consume there will be an increase in consumption. At this disequilibrium there will be unplanned decrease in inventories giving a signal for firms to produce more. This increase will increase output and the process will continue until we reach the equilibrium at point B. Through this multiplier effect we will achieve a larger increase in Y than the increase in exports.

At the new short run equilibrium the change in output exceeds the change in exogenous spending. This is because as output increases, incomes increased and, causing endogenous consumption to increase, leading to a multiplier effect on the change in output.

3. In the context of the basic Keynesian model studied in this subject, which of the following statements is incorrect?

(a) An increase in exogenous consumption results in a steeper planned aggregate expenditure line. *
(b) An exogenous payment from the government to households moves the withdrawals schedule downwards.
(c) An exogenous fall in exports results in an unplanned increase in inventories.
(d) Firms adjust their production in response to unplanned changes in inventories.

4. Suppose there is no government sector in an economy of Notaxland and is open to trade. So $PAE = C + I + X - M$. We will write the consumption function as $C = \bar{C} + cY$ and the import function as $M = \bar{M} + mY$. Exports (X) and investment (I) are exogenous. Imagine c has a value of 0.80 and that m has a value of 0.2. What is the (approximate) value of the "exogenous consumption multiplier" in this economy?

a) 1.33

b) 1.67

c) 2.50*

d) 5.00

5. Given the following information about a particular economy, by how much would exogenous expenditure have to change to eliminate the output gap?

$C = 2{,}000 + 0.75Y$

$I^P = 500$

$Y^* = 14{,}000$

a) 250

b) 500

c) 1000

d) 2,000