The Keynesian Cross diagram continued
(Figure 10.6, Parkin Ch. 10, page 238)
We saw that only at the equilibrium level of RGDP is output demanded (planned expenditure) equal to output supplied in this diagram. At all other points this condition is not satisfied

At this point of our discussion we need to understand the concept of ‘inventory accumulation’ in the economy.

Q. What are ‘inventories’?
Ans. Inventories are stocks held by firms of its produced items. Example: If Ford produces 5 cars & sells only 3 of them, then the other 2 accumulate as inventories in its warehouses.

The aggregate unplanned real inventory accumulated in the economy is given by:

\[ IN = Y - AE \]
= Supply (i.e. Production) – Output Demanded (i.e., planned real expenditure)

Q. What does \( IN < 0 \) mean?
Ans. When \( AE > Y \). Firms do negative unplanned inventory accumulation, i.e. they put cars which they have produced today planning to sell them tomorrow, on the market today itself.

Discussion of the Keynesian Cross diagram:
Basically, the AE curve shows us what planned real expenditure would be if the RGDP were at various levels. However, though at every point actual expenditure (i.e. planned expenditure plus inventory accumulation) equals RGDP, there is only one point where planned expenditure equals RGDP. At this point planned expenditure equals actual expenditure, and there is no unplanned inventory accumulation (positive or negative). At all other points since quantity supplied does not equal quantity demanded of goods & services, we have unplanned inventory accumulation (positive or negative).

Note: It is very important to distinguish between planned expenditure and actual expenditure.
Q. What happens when the economy is off-equilibrium?

Ans. RGDP (i.e. supply) adjusts so that convergence to equilibrium occurs. When planned expenditure is more (less) than actual expenditure, firms increase (decrease) production in order to curtail unplanned inventory depletion (increases). This process continues until the equilibrium level of RGDP is reached, for which unplanned inventory change is zero.

**Shifts of the AE curve**

Once again let us look at the factors that affect the equilibrium level of RGDP. Note that this equilibrium we see here may not be the long-run full-employment equilibrium. So the government might want to effect policies that might vary *this* equilibrium level in order to bring the economy closer to the full-employment equilibrium. In a model like this, a change in the equilibrium level of RGDP may be effected through demand-side policies (like fiscal policies) by the government.

In equilibrium:

\[
Y^* = \frac{A}{(1-B + m)}
\]

\[
= \frac{(\alpha + I + G + X)}{[1-b(1-t) + m]}
\]

\[
= \frac{(a - bT + b \tau + I + G + X)}{[1-b(1-t) + m]}
\]

\[
= (a - bT + b \tau + I + G + X) / [1-b(1-t) + m]
\]

So \( Y^* \) can go up either if \( A \) (the numerator) goes up, or \( 1- B + m \) (the denominator) goes down. (See Keynesian Cross diagram drawn in class).

\( A \) goes up if:

1. \( \alpha \) goes up (depends on households)
2. \( T \) goes down (depends on the government).
3. \( \tau \) goes up (depends on the government).
4. \( I \) goes up (depends on firms).
5. \( G \) goes up (depends on the government).
6. \( X \) goes up (depends on the ROW).

\( (1-B + m) \) goes down if:

1. \( B \) goes up: \( b \) goes up (depends on the tastes & preferences of households) or \( t \) goes down (depends on the government)
2. \( m \) goes down (depends on household, firms, & government)
Which of the above factors can be controlled through ‘fiscal policy’ by the government?

G: Government expenditure
T: Lump-sum Taxes
t: MPT (marginal propensity to tax income)
τ: Lump-sum Transfers

So the government can move the economy towards the long-run equilibrium by using the above policy instruments. Changing these instruments will cause the AE curve to shift due to a change in either its intercept or slope (or both).

(Recalling that \( AE = A + (B - m)Y \), figure out the changes in which of the above factors affect the intercept of the AE curve, and which its slope).

The same effects can be alternately analyzed using the algebraic expression for the equilibrium level of RGDP seen above. Noting that a change in these policy instruments will change the numerator and/or denominator in that expression, we can figure out how these instruments affect the equilibrium level of RGDP.

(Please consider all possible changes in these instruments and practice using both the Keynesian Cross diagram and the algebraic expression, to familiarize yourself with the effects of various fiscal policy measures)