Public Affairs 854 | Menzie D. Chinn
Fall 2015 | Social Sciences 7418
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Chapter 11 Equations

(11.1) $Y = AD$

(11.2) $AD = C + I + G + X - IM$

(11.3) $C = \bar{C} + c(Y - T)$

$T = \bar{T}$

$I = \bar{I}$

(11.4) $IM = \overline{IM} + mY$

$X = \bar{X}$

$G = \bar{G}$

(11.5) $Y = AD = \bar{C} + c(Y - \bar{T}) + \bar{I} + \bar{G} + \bar{X} - \overline{IM} - mY$

(11.6) $Y_0 = \bar{\alpha}\left[\bar{A} + \bar{X} - \overline{IM}\right]$

where $\bar{\alpha} = \left(\frac{1}{1-c+m}\right)$, $\bar{A} \equiv \bar{C} - c\bar{T} + \bar{I} + \bar{G}$

$AD = \bar{C} + c(Y - \bar{T}) + \bar{I} + \bar{G} + \overline{EX} - \overline{IM} - mY = \bar{A} + \bar{X} - \overline{IM} + (c - m)Y$

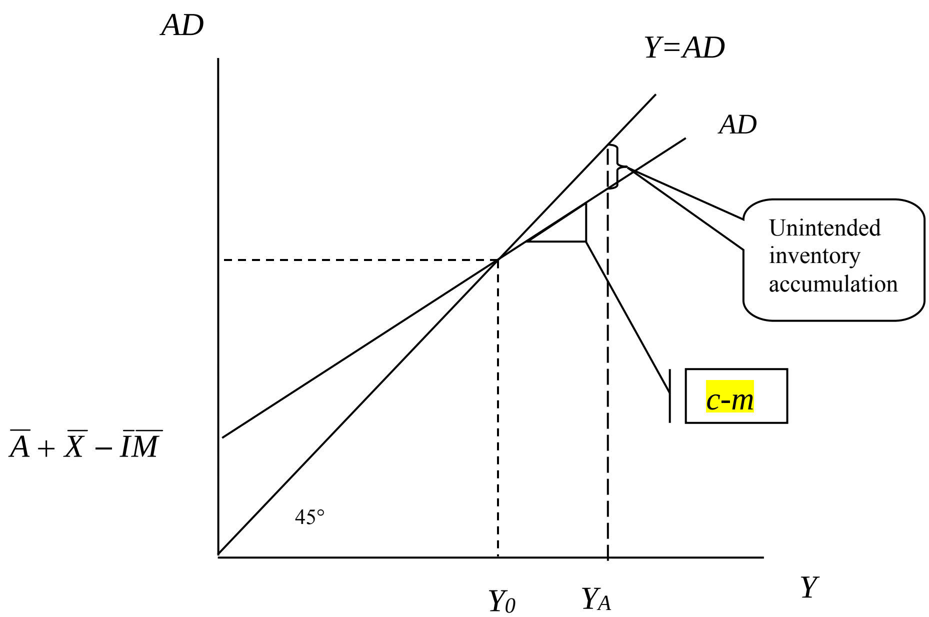

Figure 11.1: Equilibrium in the Keynesian Cross

(11.7) $\Delta Y = \bar{\alpha}\left[\Delta A + \Delta X - \Delta IM\right]$

(11.8) $\Delta Y = \bar{\alpha}\Delta G$

$\$1 + \$c + \$(c^2) + \$(c^3) + \ldots + \$(c^\infty) = 1/(1-c) > \$1$

$$\frac{\Delta Y}{\Delta GO} = \bar{\alpha} \equiv \frac{1}{1-c+m} > 1$$

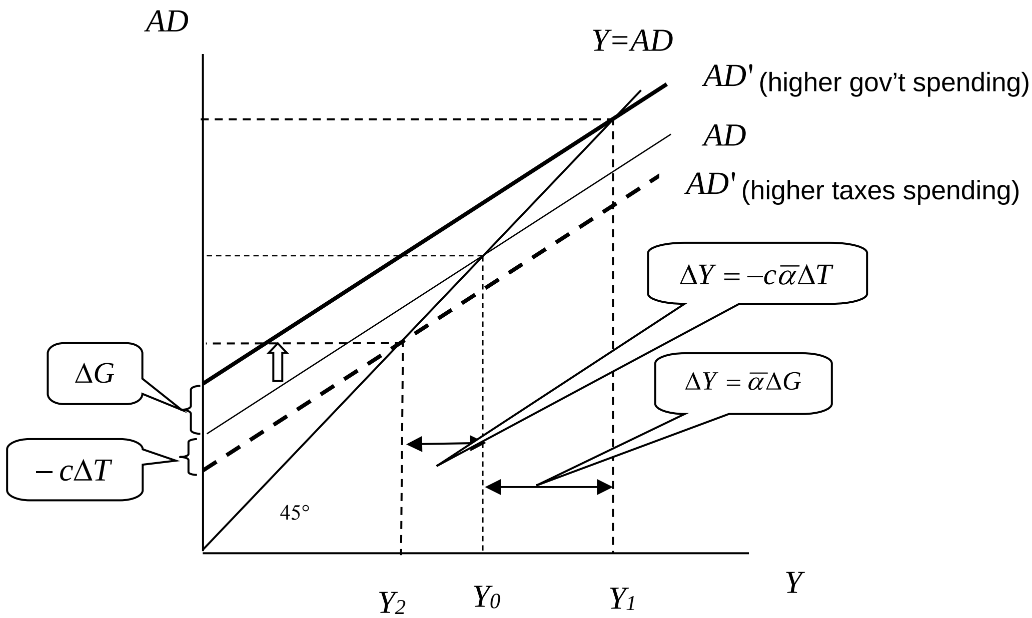

Figure 11.2: Change in income due to a change in autonomous spending

$$\frac{\Delta Y}{\Delta T} = -c\overline{\alpha}$$

- \$$c$ - \$(c^2) - \$(c^3) + . . . - \$(c^∞) = -c/(1-c) $= -c\overline{\alpha}$

(11.9) $TB \equiv X - IM = \bar{X} - \overline{IM} - mY$

(11.10) $BuS \equiv T - G = \overline{T} - \overline{G}$

$$\Delta TB = -m\bar{\alpha}\Delta G < 0$$
$$\Delta BuS = -\Delta G < 0$$

(11.4') $IM = \overline{IM} + mY - nq$

(11.11) $X = \bar{X} + vq$

(11.12) $Y_0 = \bar{\alpha}[\bar{A} + \bar{X} - \overline{IM} + (n+v)q]$ let $\bar{\alpha} \equiv \left(\frac{1}{1-c+m}\right)$

(11.13) $\Delta Y = \bar{\alpha}[\Delta A + \Delta X - \Delta IM + (n+v)\Delta q]$

$\Delta Y = \bar{\alpha}(n+v)\Delta q \qquad \frac{\Delta Y}{\Delta q} = \bar{\alpha}(n+v) > 0$

(11.9') $TB = (\bar{X} + vq) - (\overline{IM} + mY - nq)$

$\Delta TB = (\Delta X + v\Delta q) - (\Delta IM + m\Delta Y - n\Delta q)$

$\Delta TB = (v\Delta q) - (m\Delta Y - n\Delta q)$

$\Delta TB = (v+n)\Delta q - m\bar{\alpha}(n+v)\Delta q)$

$\Delta TB = (1 - m\bar{\alpha})(v+n)\Delta q$