

The AE model

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The Model

$$AE = C + I + G + X - M \quad (0)$$

$$C = a + bY^d \quad (1)$$

$$I = I_0 \quad (2)$$

$$G = G_0 \quad (3)$$

$$T = T_0 + tY \quad (4)$$

$$Y^d = Y - T \quad (5)$$

$$X = X_0 \quad (6)$$

$$M = M_0 + mY \quad (7)$$

To get the Aggregate Expenditure function from

$$AE = C + I + G + X - M$$

Do the following:

- Substitute eq. 4 into eq. 5.
- Then substitute eq. 5 into eq. 1.
- Finally, substitute eqs. 1,2,3,6,7 into eq. (0), the AE formula, to get

$$AE = \underbrace{(a + I_0 + G_0 + X_0 - M_0 - bT_0)}_A + \underbrace{(b(1-t) - m)}_z \cdot Y$$

or

$$AE = A + zY$$

In equilibrium, $Y = AE$ (this is where the AE function crosses the 45 degree line)

$$Y = AE$$

$$Y = A + zY$$

$$Y - zY = A$$

$$(1 - z)Y = A$$

$$Y^* = \frac{A}{1 - z}$$

Now substitute in the values

$$Y^* = \frac{a + I_0 + G_0 + X_0 - M_0 - bT_0}{1 - (b(1-t) - m)}$$