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Example 1.C (cont.): National income model

- From the example 1.B, it is straightforward to solve for all the endogenous equilibrium solutions, Y^*, C^*, Y_d^*.

$Y^* = AE = C + I + G$

$Y = C^* + I + G$

$Y = (a + bY_d^*) + I + G$

$Y = (a + b(Y - T)) + I + G$

$Y = a + bY - bT + I + G$

$Y - bY = a - bT + I_0 + G_0$

$Y^* = \frac{1}{1-b}(a - bT + I_0 + G_0)$

$\therefore Y^* = C^* = Y_d^*$

- Numerically, if a = 1, T_0 = \$0 I_0 = \$1, G_0 = \$1 and b = 0.5, this yields us,

$Y^* = \frac{1}{1-b}(a - bT + I_0 + G_0)$

$Y^* = \frac{1}{1-0.5}(1 - 0.5(0) + 1 + 1)$

$= \frac{1}{0.5}(1 - 0 + 2)$

$Y^* \frac{1}{0.5} \cdot 1$

$Y^* = 2$

Question: What if G is now changed to \$2, how big is the change in Y* and C*?

Answer:

New Y* = 2 → 4

A \$1 increase in G causes an increase in Y* by 2

$Y^* = \frac{1}{1-b}(a - bT + I_0 + G_0)$

$Y^* = \frac{1}{1-0.5}(1 - 0.5(0) + 1 + 2)$

$Y^* = \frac{1}{0.5}(1 - 3)$