Fiscal Policy

The aggregate demand curve shows the relationship between the price level and the corresponding level of GDP at which planned production equals planned purchases. If b represents the marginal propensity to consume and $a(P)$, $I_g(P)$, G, T, and $X_n(P)$ represent autonomous consumption, gross planned investment, government spending, total tax receipts, and net exports, respectively, then the AD curve takes the form: $Y = \left(\frac{1}{1-b}\right) \cdot [a(P) + b(Y - T) + I_g(P) + G + X_n(P)]$. (Note that autonomous consumption, gross planned investment, and net exports are all decreasing functions of the price level.)

Holding the price level constant, it is apparent that a change in government expenditures of ΔG or taxes of ΔT will shift the AD curve according to the multipliers:

$$\left(\frac{\Delta Y}{\Delta G}\right)_{P=\text{Constant}} = \left(\frac{1}{1-b}\right)$$

$$\left(\frac{\Delta Y}{\Delta T}\right)_{P=\text{Constant}} = \left(\frac{-b}{1-b}\right)$$

Then, the horizontal shift in the AD curve is $\Delta Y_{P = \text{Constant}} = \left(\frac{1}{1-b}\right) \cdot \Delta G + \left(\frac{-b}{1-b}\right) \cdot \Delta T$.

For example, suppose that $b = .75$, $\Delta G = \$2$ billion and $\Delta T = -\$4$ billion; that is, the MPC is .75 and the government plans to increase its spending by $2 billion while lowering taxes by $4 billion. The resulting shift in the AD curve is $\Delta Y_{P = \text{Constant}} = \left(\frac{1}{1-.75}\right) \cdot 2 + \left(\frac{-.75}{1-.75}\right) \cdot -4 = (4 \cdot 2) + (-3 \cdot -4) = \$20$ billion, a rightward shift of $20 billion.

One implication of these spending and tax multipliers is that if the government raises taxes to match an increase in government spending (that is, $\Delta G = \Delta T$), the result is a rightward shift of AD equal to the change in spending: $\Delta Y_{P = \text{Constant}} = \left(\frac{1}{1-b}\right) \cdot \Delta G + \left(\frac{-b}{1-b}\right) \cdot \Delta T = \left(\frac{1}{1-b}\right) \cdot \Delta G + \left(\frac{-b}{1-b}\right) \cdot \Delta G = \left(\frac{1-b}{1-b}\right) \cdot \Delta G = \Delta G$.