

NOTATION

- Endogenous Variables
- Exogenous Variables
- Behavioral Equations
- Identities (\equiv)
- Equilibrium Conditions
- Parameters or Coefficients
- Reduced Form Equations
- Structural Equations: Behavioral Equations, Identities, Equilibrium Conditions

THE MULTIPLIER MODEL

Y : output *and* income

$$AE \equiv C + I$$

$$S \equiv Y - C$$

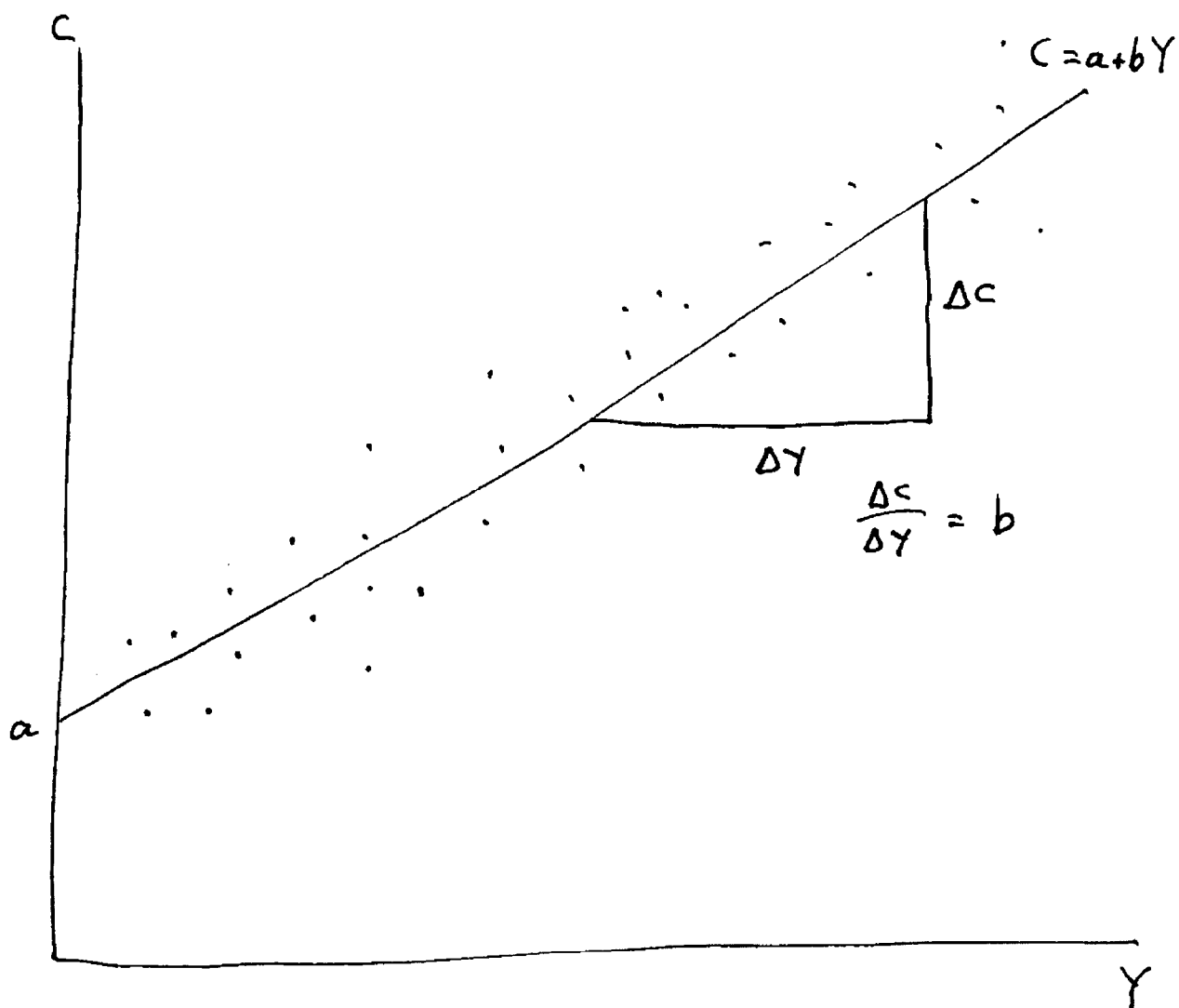
$$C = a + bY$$

$$\frac{\Delta C}{\Delta Y} \equiv MPC \equiv b$$

$$\frac{C}{Y} \equiv APC$$

$$\Delta S \equiv \Delta Y - \Delta C$$

$$\frac{\Delta S}{\Delta Y} \equiv MPS \equiv \frac{\Delta Y - \Delta C}{\Delta Y} \equiv 1 - \frac{\Delta C}{\Delta Y} \equiv 1 - MPC$$



least squares

EQUILIBRIUM

$$Y = AE$$

or

$$Y = C + I, \text{ since } AE \equiv C + I$$

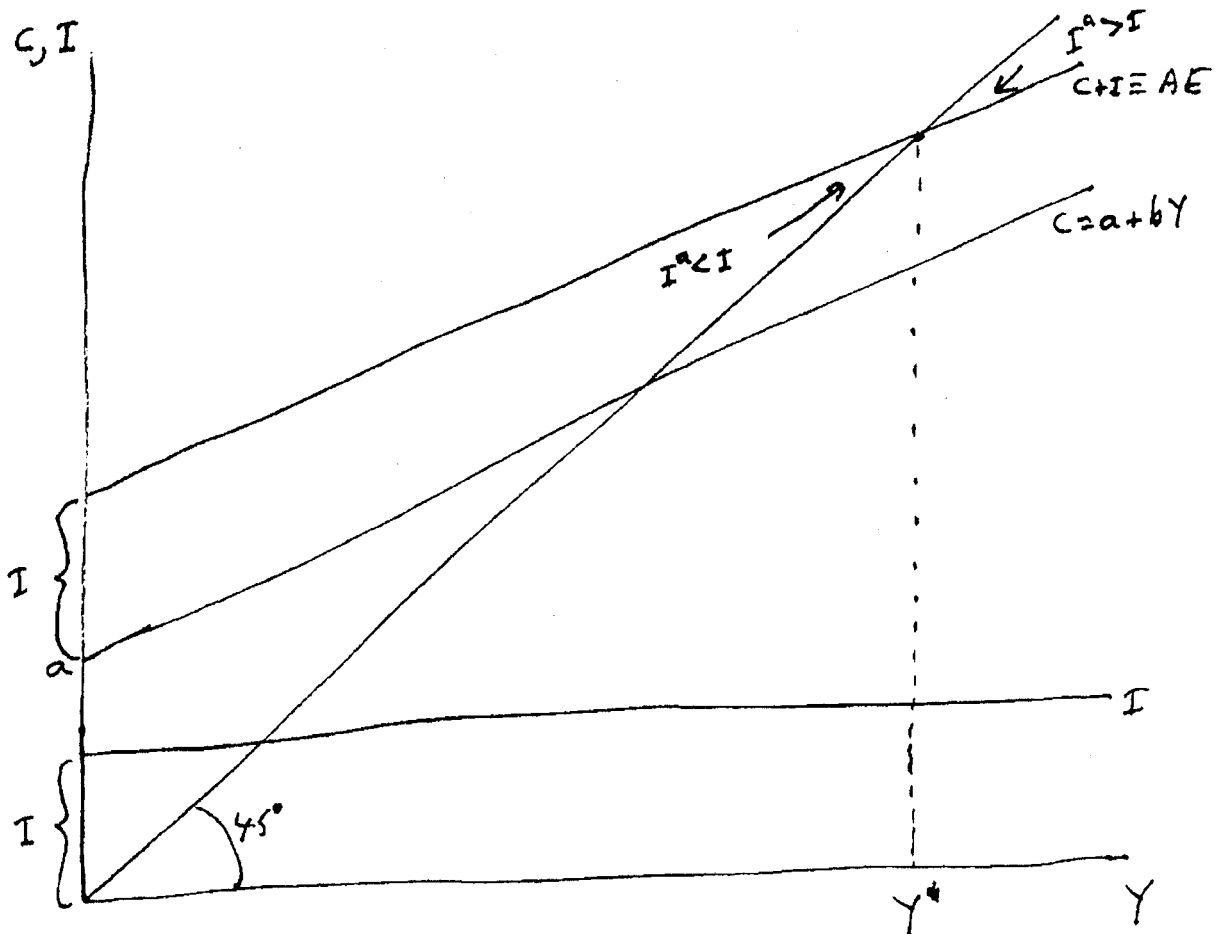
Let

$$Y \equiv C + I^a$$

$$\text{If } Y = AE, \text{ then } I^a = I$$

$$\text{If } Y > AE, \text{ then } I^a > I$$

$$\text{If } Y < AE, \text{ then } I^a < I$$



$$C = a + bY \quad \text{Behavioral}$$

$$Y = C + I \quad \text{Equilibrium Condition}$$

$$Y = a + bY + I$$

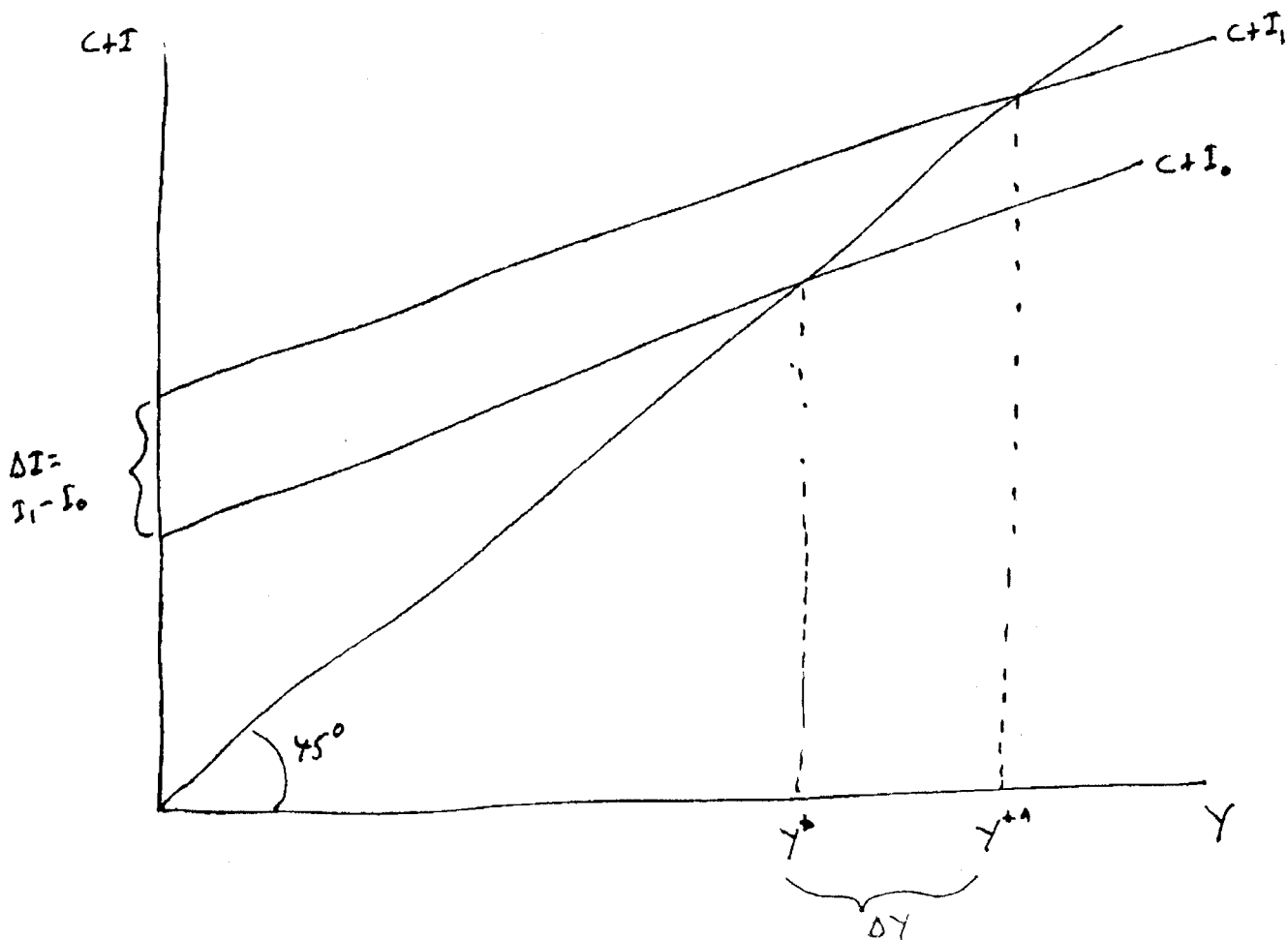
$$Y - bY = a + I$$

$$Y = \frac{a}{1-b} + \frac{1}{1-b}I \quad \text{Reduced Form Equation}$$

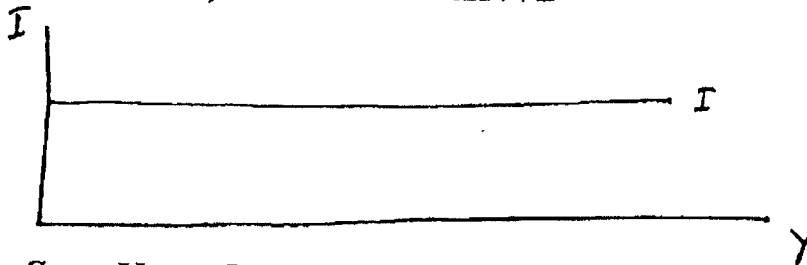
$$C = a + b(C + I)$$

$$C - bC = a + bI$$

$$C = \frac{a}{1-b} + \frac{b}{1-b}I \quad \text{Reduced Form Equation}$$



SAVING, INVESTMENT

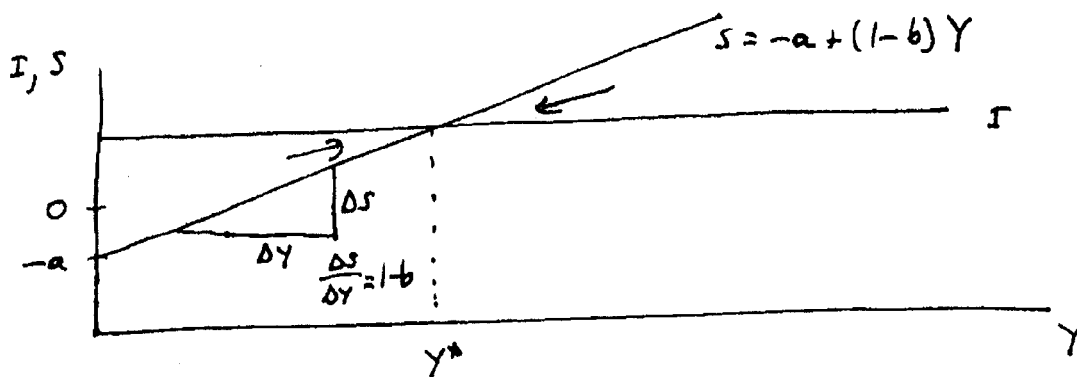


$$S \equiv Y - C$$

$$Y \equiv C + I^a, \text{ so } S \equiv C + I^a - C \equiv I^a$$

In equilibrium: $Y = C + I$, so $S = C + I - C = I$

$$S = Y - a - bY = -a + (1 - b)Y$$



PARADOX OF THRIFT

