

XI. SEPT 2011

Friday, March 6, 2020

11:35 AM

$$U_A = X_A^{1/2} Y_A^{1/2}$$

$$U_B = X_B^{1/2} Y_B^{1/2}$$

$$W_A = (100, 90)$$

$$W_B = (0, 10)$$

$$P_Y = 1$$

$$\hat{W}_A = (100, 90 - Y^6)$$

$$\hat{W}_B = (0, 10 + Y^6)$$

EQ

$$\text{MAX } U_i = X_i^{1/2} Y_i^{1/2} \text{ s.t. } P_x X_i + P_y Y_i \leq P_x W_x^i + P_y W_y^i$$

CPO

$$\frac{1}{2} X_i^{-1/2} Y_i^{1/2} - \lambda P_x = 0$$

$$\frac{1}{2} X_i^{1/2} Y_i^{-1/2} - \lambda P_y = 0$$

$$\frac{Y_i}{X_i} = \frac{P_x}{P_y}$$

$$Y_i = \frac{P_x}{P_y} \cdot X_i$$

$$P_x X_i + P_y Y_i = P_x W_x^i + P_y W_y^i$$

$$P_x X_i + P_y \left( \frac{P_x}{P_y} X_i \right) = P_x W_x^i + P_y W_y^i$$

$$X_i = \frac{P_x W_x^i + P_y W_y^i}{2 P_x}$$

$$Y_i = \frac{P_x W_x^i + P_y W_y^i}{2 P_y}$$

MC DOS VACIAN

$$\frac{P_x W_x^A + P_y W_y^A}{2 P_x} + \frac{P_x W_x^B + P_y W_y^B}{2 P_x} = 100$$

$$\frac{P_x (W_x^A + W_x^B) + P_y (W_y^A + W_y^B)}{2 P_x} = 100$$

$$\frac{P_x (100) + P_y (100)}{2 P_x} = 100$$

$$50 + \frac{50}{P_x} = 100 \quad (P_y = 1)$$

$$\frac{50}{P_x} = 50$$

$$P_x = 1$$

$$X_A = \frac{P_x W_x^A + P_y W_y^A}{2 P_x} = \frac{W_x^A + W_y^A}{2} = \frac{100 + 90 - Y^6}{2} = 60$$

$$Y_A = \frac{P_x W_x^A + P_y W_y^A}{2 P_y} = \frac{W_x^A + W_y^A}{2} = \frac{100 + 90 - Y^6}{2} = 60$$

$$\Rightarrow 100 + 90 - Y^6 = 120$$

$$190 - 120 = Y^6$$

$$70 = Y^6$$