

Neoclassical Trade Theory

Chayun Tantivasadakarn

Faculty of Economics, Thammasat University

Outline

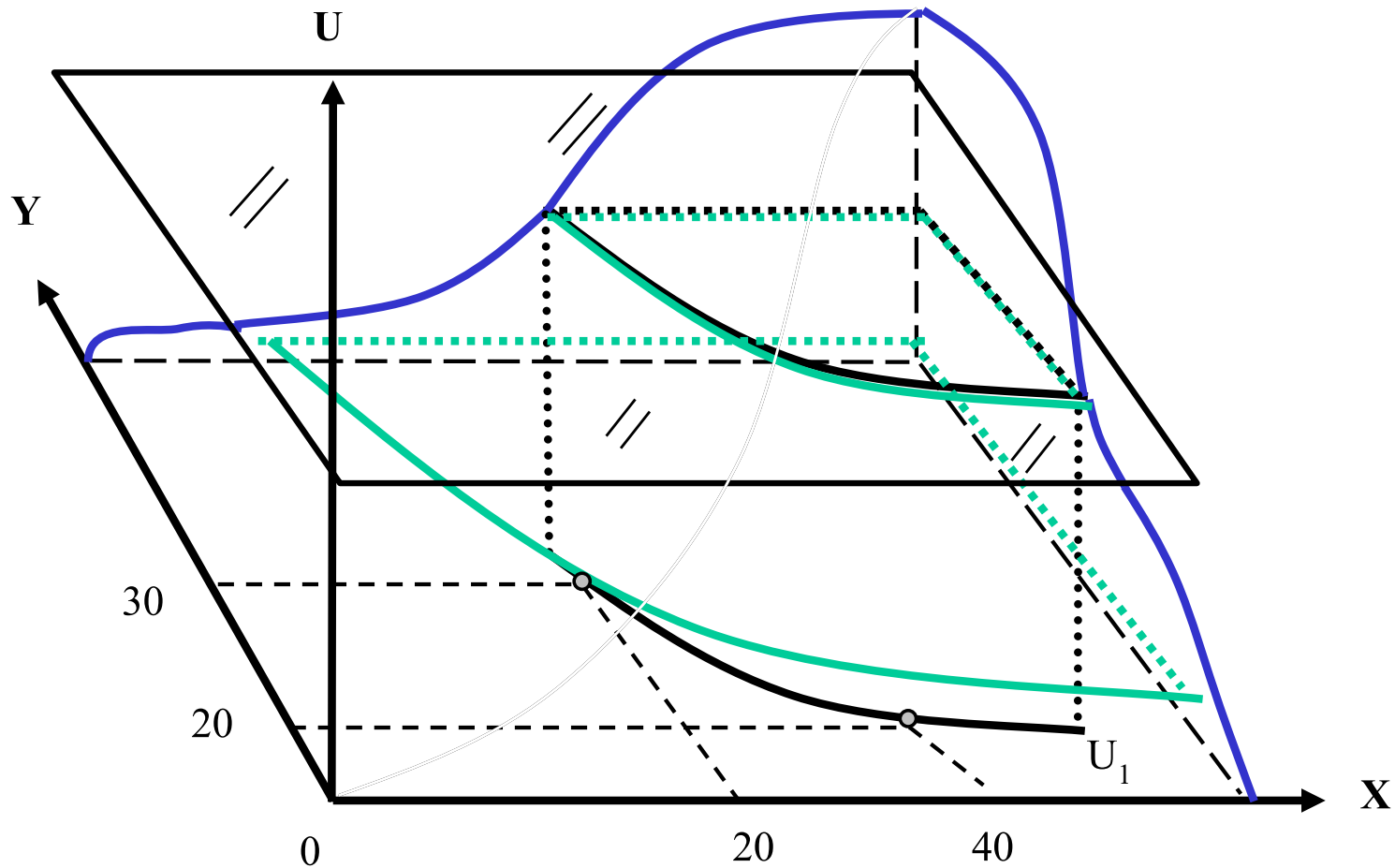


- Basic Tools
 - Consumer Behavior Theory
 - Production Theory
 - Edgeworth Box Diagram and PPC
- Gains from Trade in Neoclassical Theory
 - Autarky Equilibrium
 - Production and Consumption Gains from Trade
- Offer Curves and Terms of Trade

Consumer Behavior Theory



Utility function: $U = U(X, Y)$

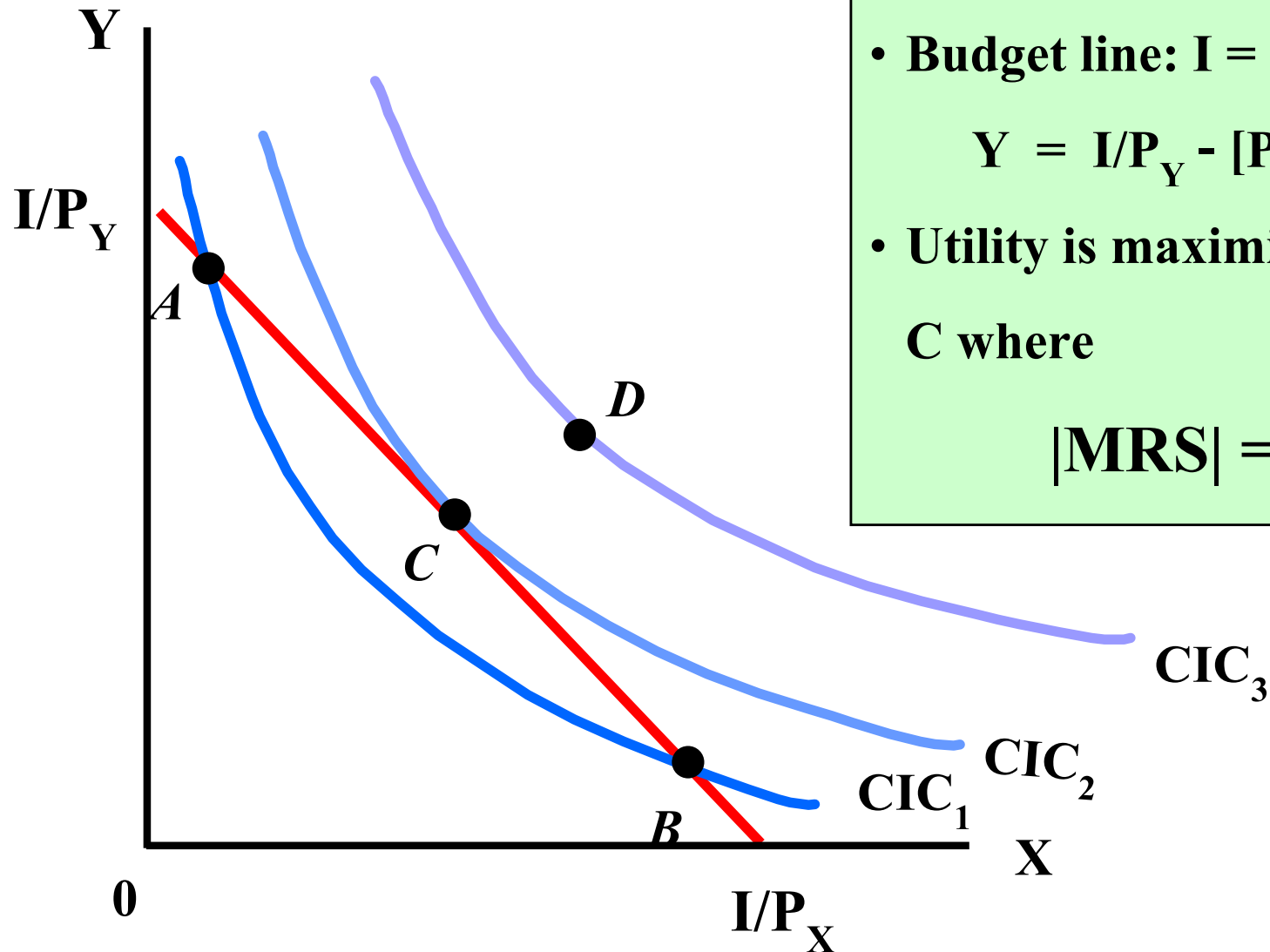


Indifference Curves: Properties



- They slope downward to the right.
 - Goods are substitutable
 - If F rises, C must fall to maintain the same U_1 .
- Any basket lying northeast of an IC is preferred to any on the IC
- Convex to the origin
 - Variety is preferred to extreme
- Indifference curves can not cross
- Continuous: no gaps

Utility maximization



- Budget line: $I = P_X X + P_Y Y$
 $Y = I/P_Y - [P_X/P_Y] X$
- Utility is maximize at point C where

$$|MRS| = P_X/P_Y$$

Aggregating Individual Preferences

- In order to aggregate individual preferences into community preferences without any problems, we need to assume that preferences are identical and **homothetic or the proportion of consumption bundle does not vary with income.**
- Homothetic preferences imply that the summation of all individual demand is equal to the demand of a representative individual with the summation of all individual income or

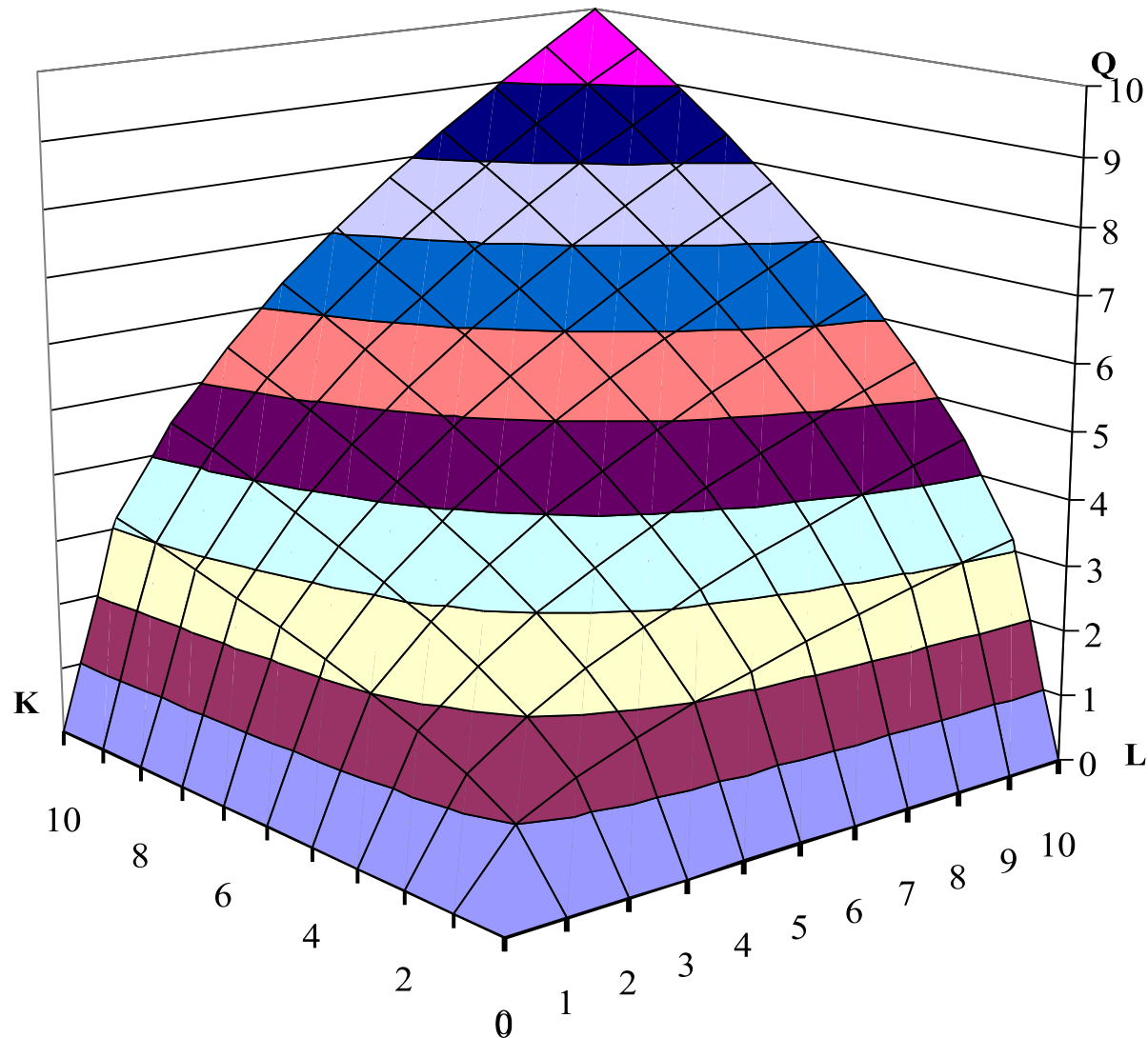
$$\sum_j^n D_j(P_1, P_2, I_j) = D(P_1, P_2, I) \text{ where } I = \sum_j^n I_j$$

Assume: Income distribution does not change the total demand

Production Theory



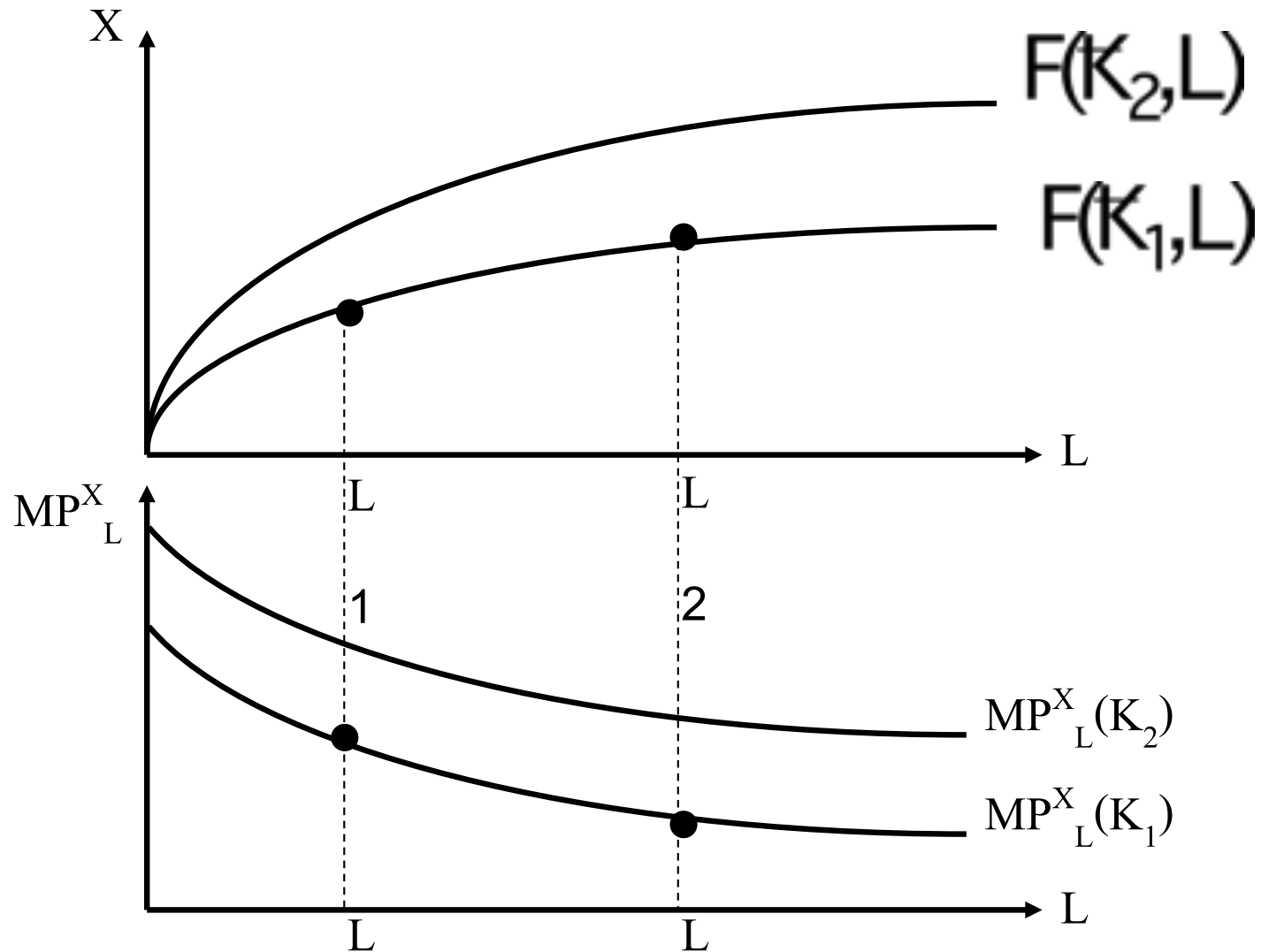
$$X = F(K_X, L_X), \quad Y = G(K_Y, L_Y)$$



Production Theory



$$X = F(K_X, L_X),$$



Production Theory



- Production function

$$X = F(K_X, L_X), \quad Y = G(K_Y, L_Y)$$

- Constant returns to scale or homogeneous of degree 1

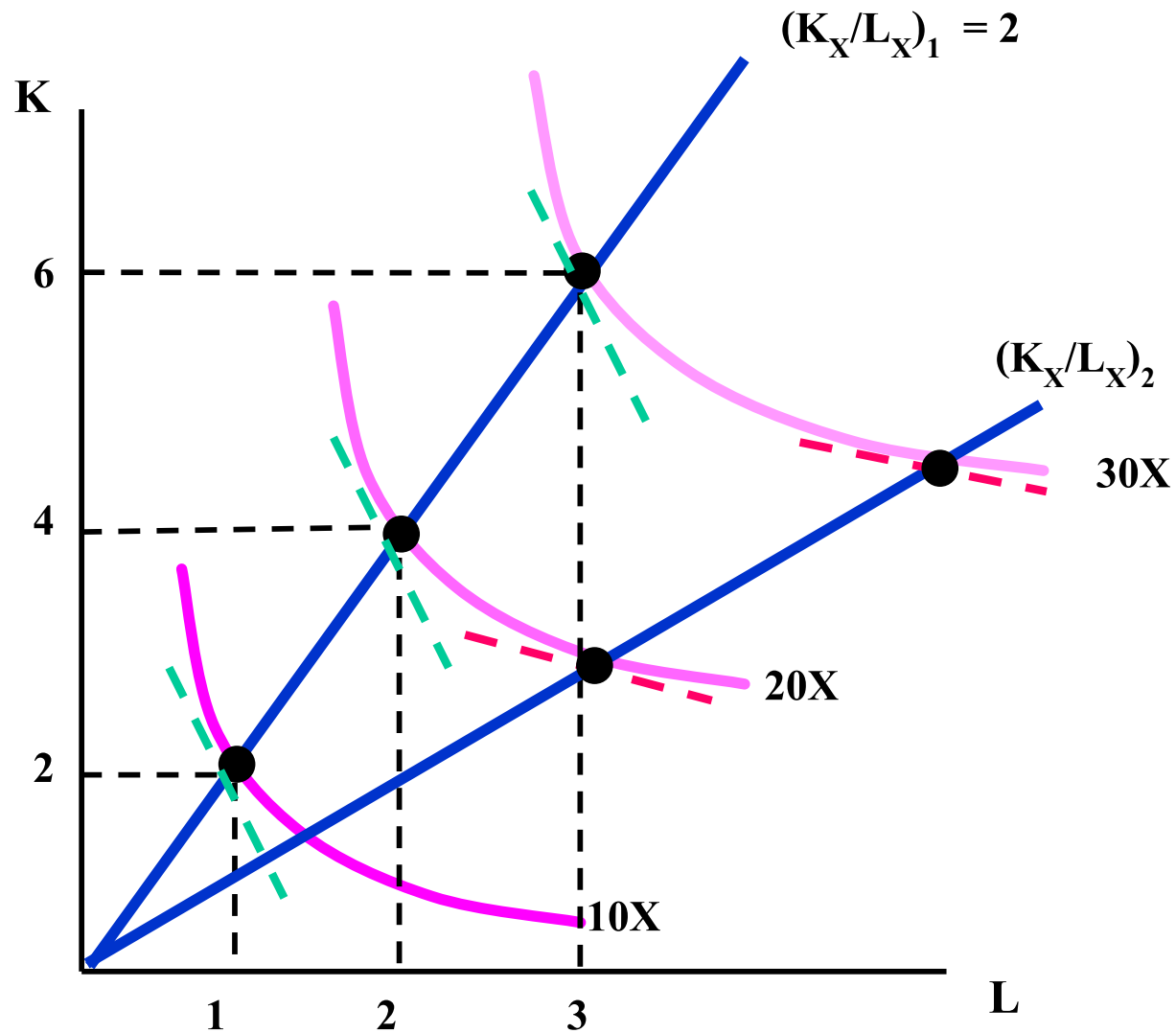
$$X = F(K_X, L_X)$$

$$Y = G(K_Y, L_Y)$$

the output grows at the same rate as the rate of both inputs

- Average products, marginal products, and MRTS are constant along the ray from the origin

Production Theory

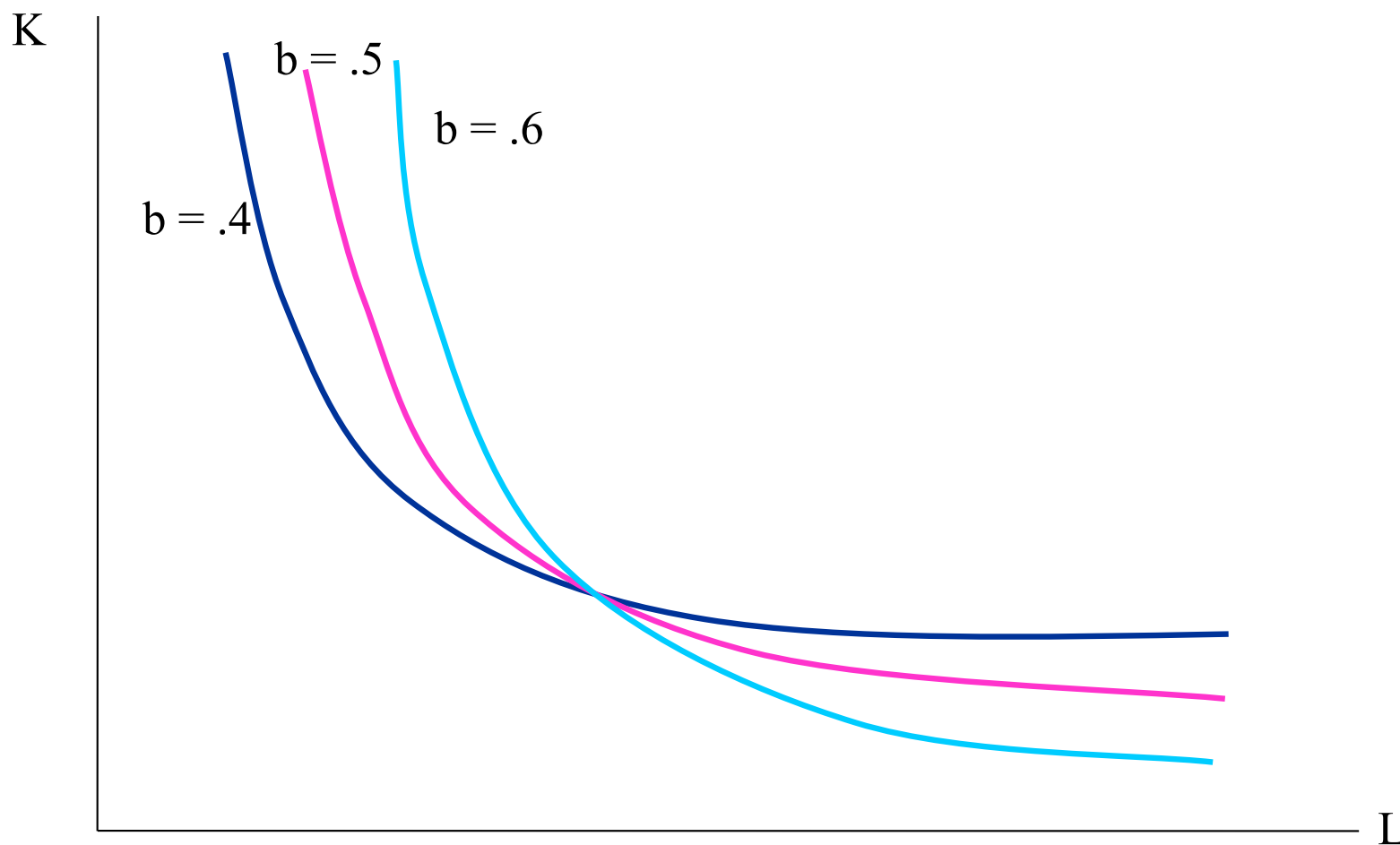


Production Theory

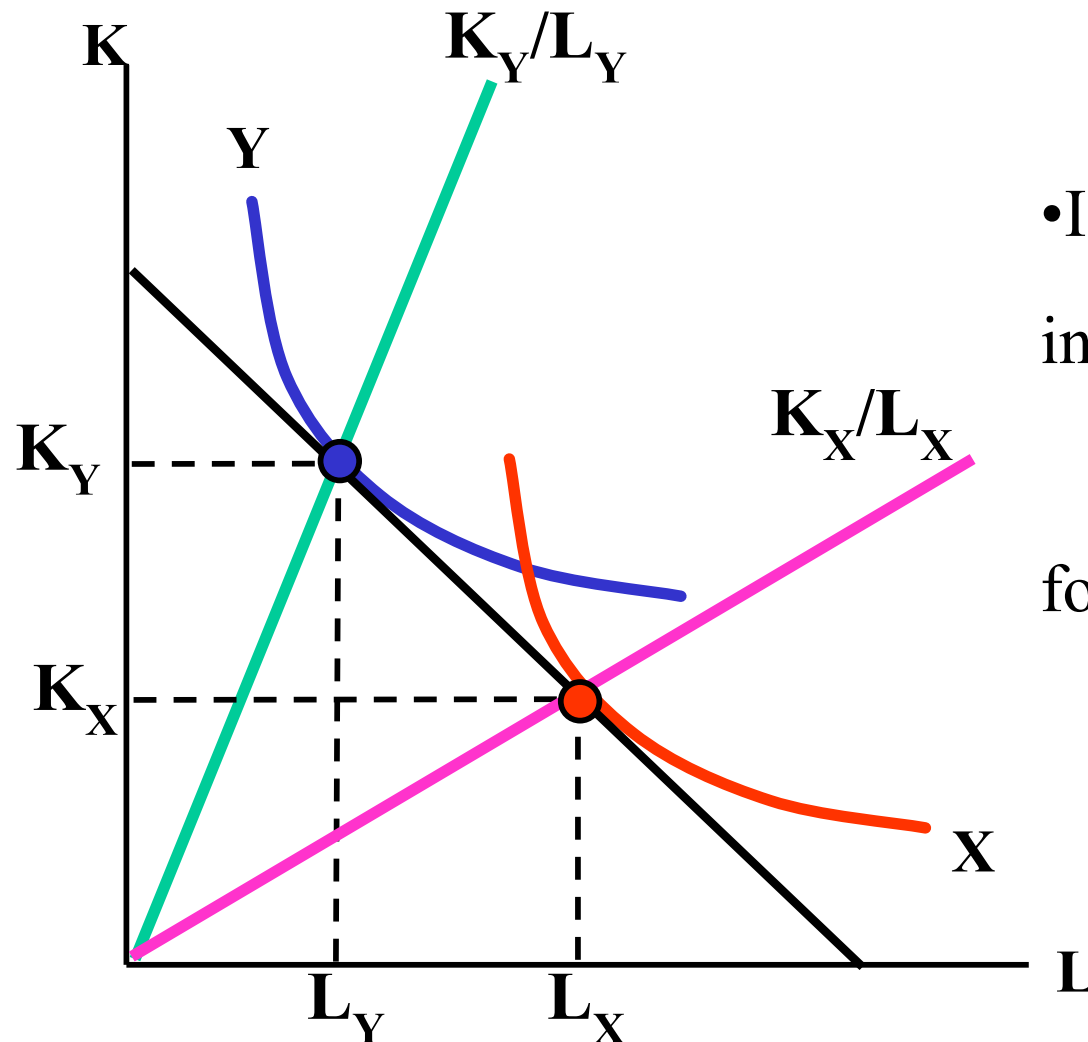
- From $X = L^b K^{(1-b)}$, $K^{(1-b)} = X/L^b \rightarrow K = [X/L^b]^{(1/1-b)}$

$X = 10$

the value of b influences substitution between K and L



Production Theory



- Least cost combination requires

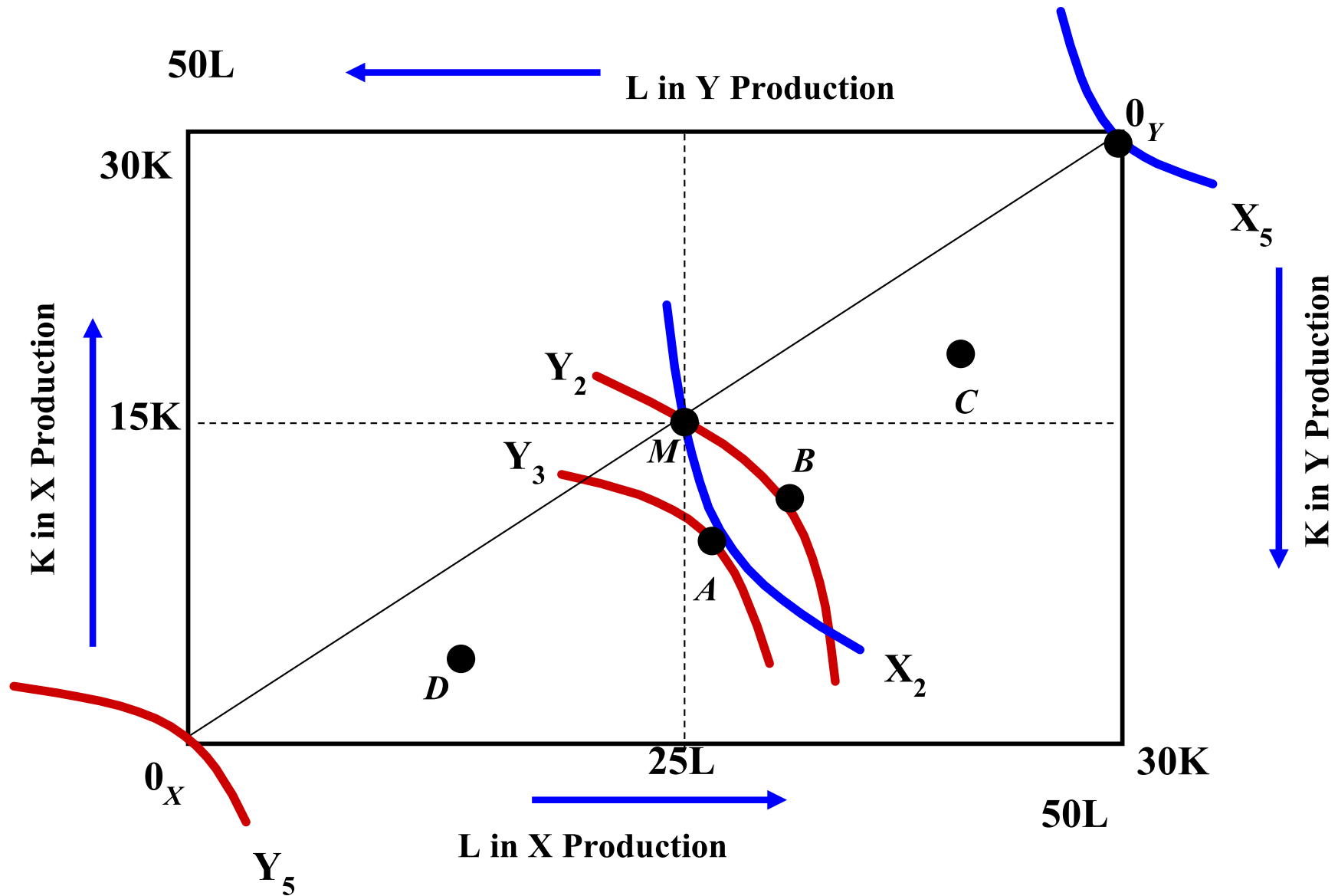
$$MRTS^X = w/r = MRTS^Y$$

- If Y production is capital intensive relative to X,

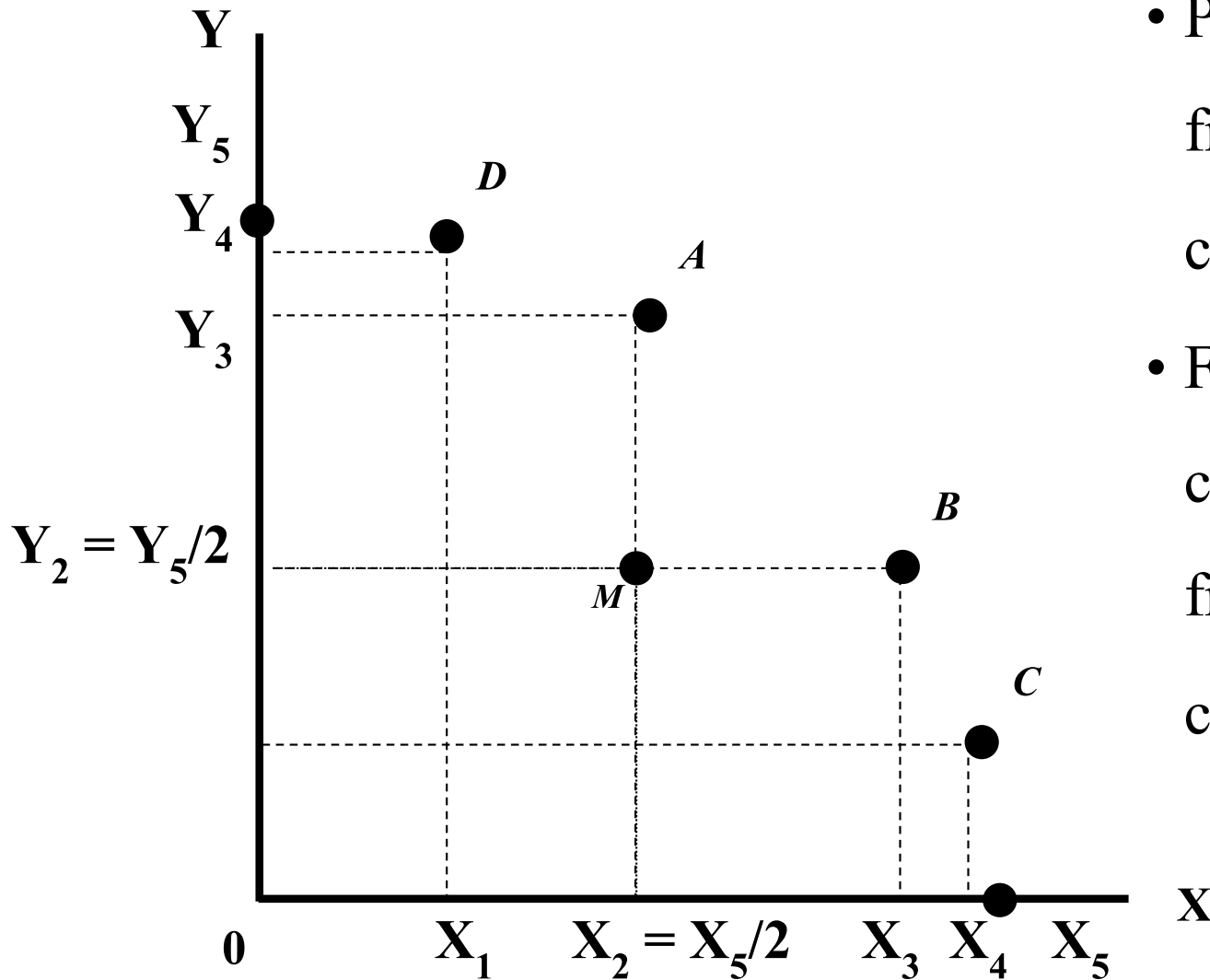
$$K_Y/L_Y > K_X/L_X$$

for any w/r .

Edgeworth Box Diagram



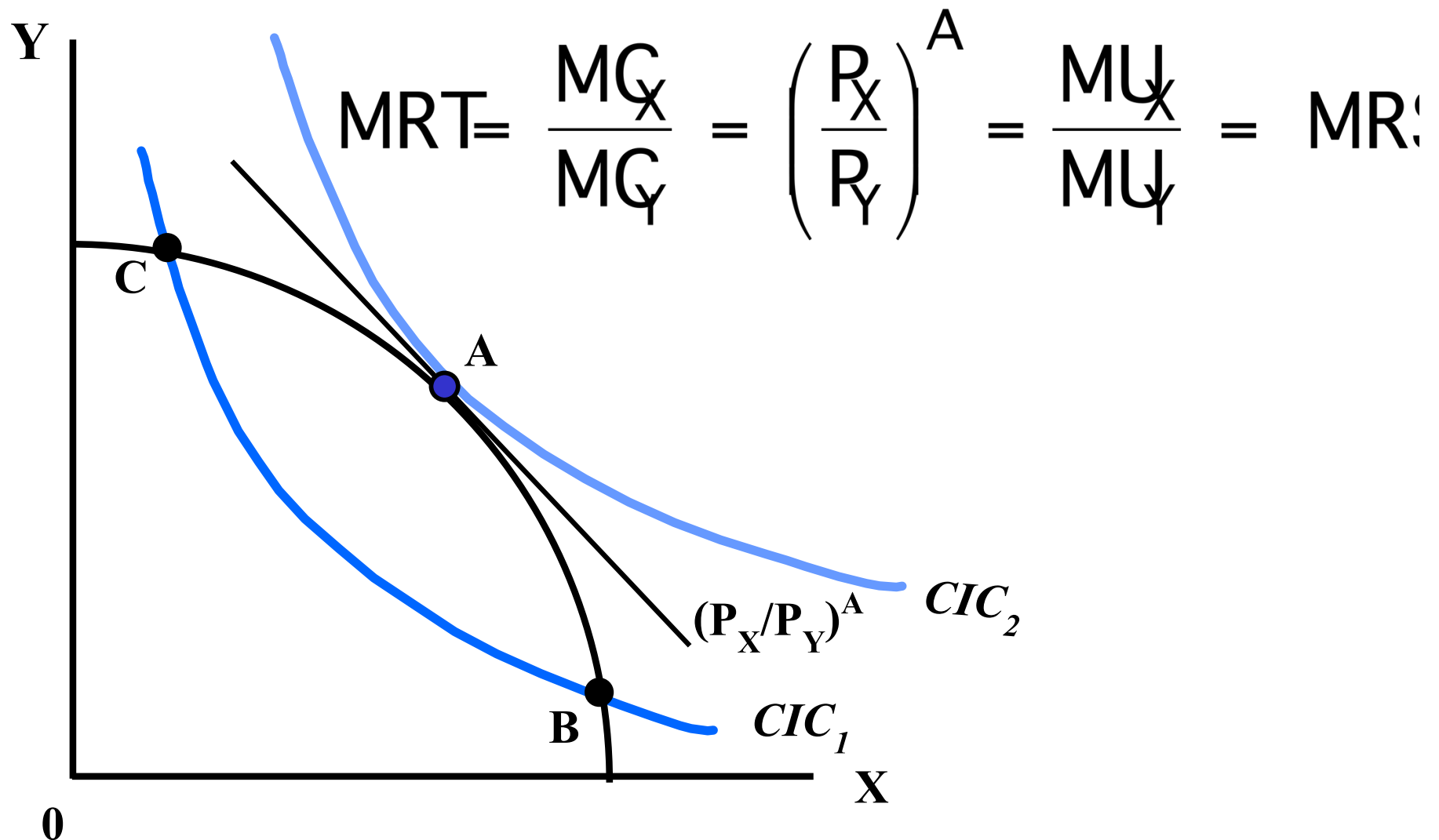
Production Possibility Curve



- PPC can be constructed from the production contract curve.
- For instance, point A comes from X_2 and Y_3 from on the contract curve.

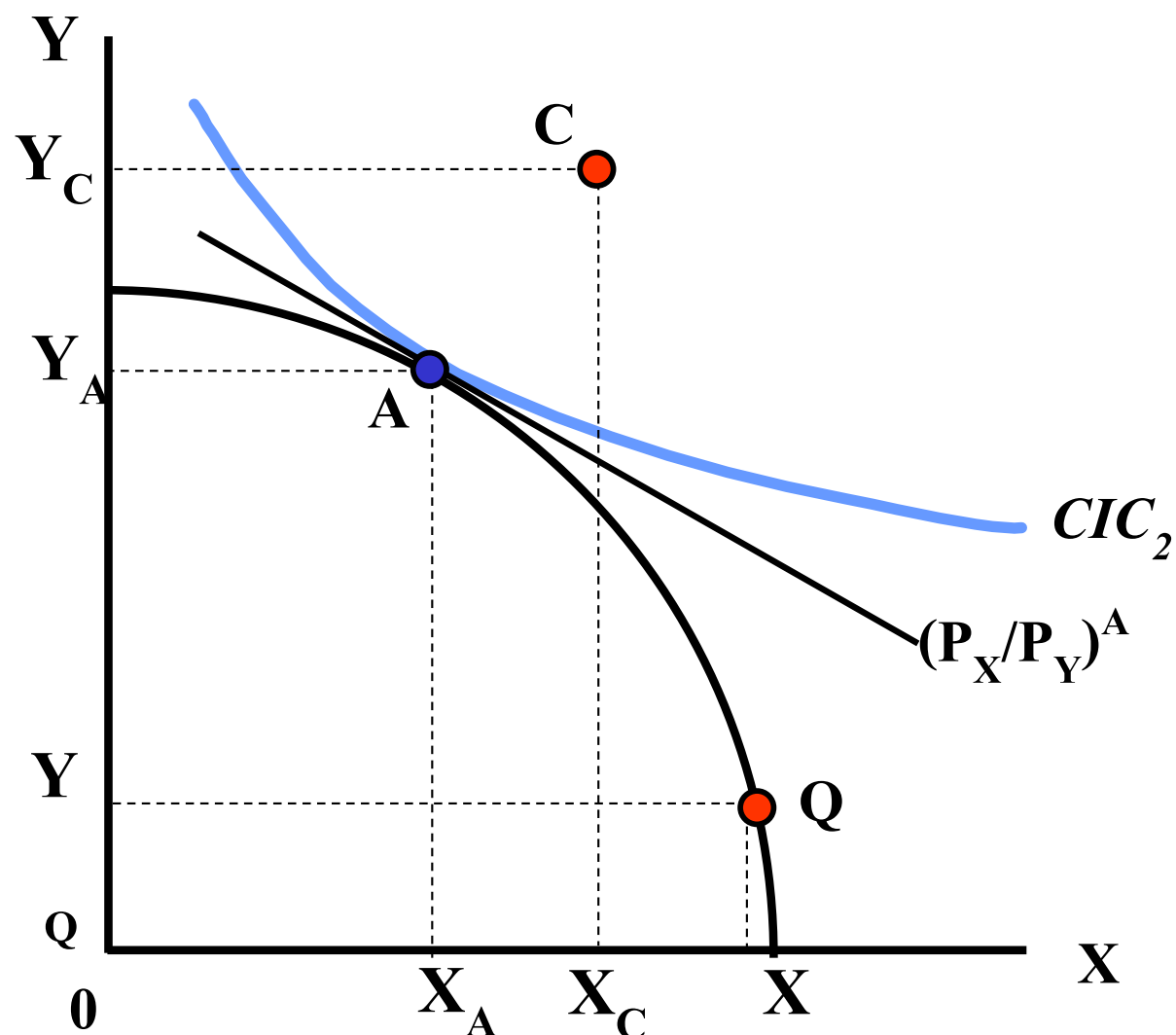


Autarky equilibrium



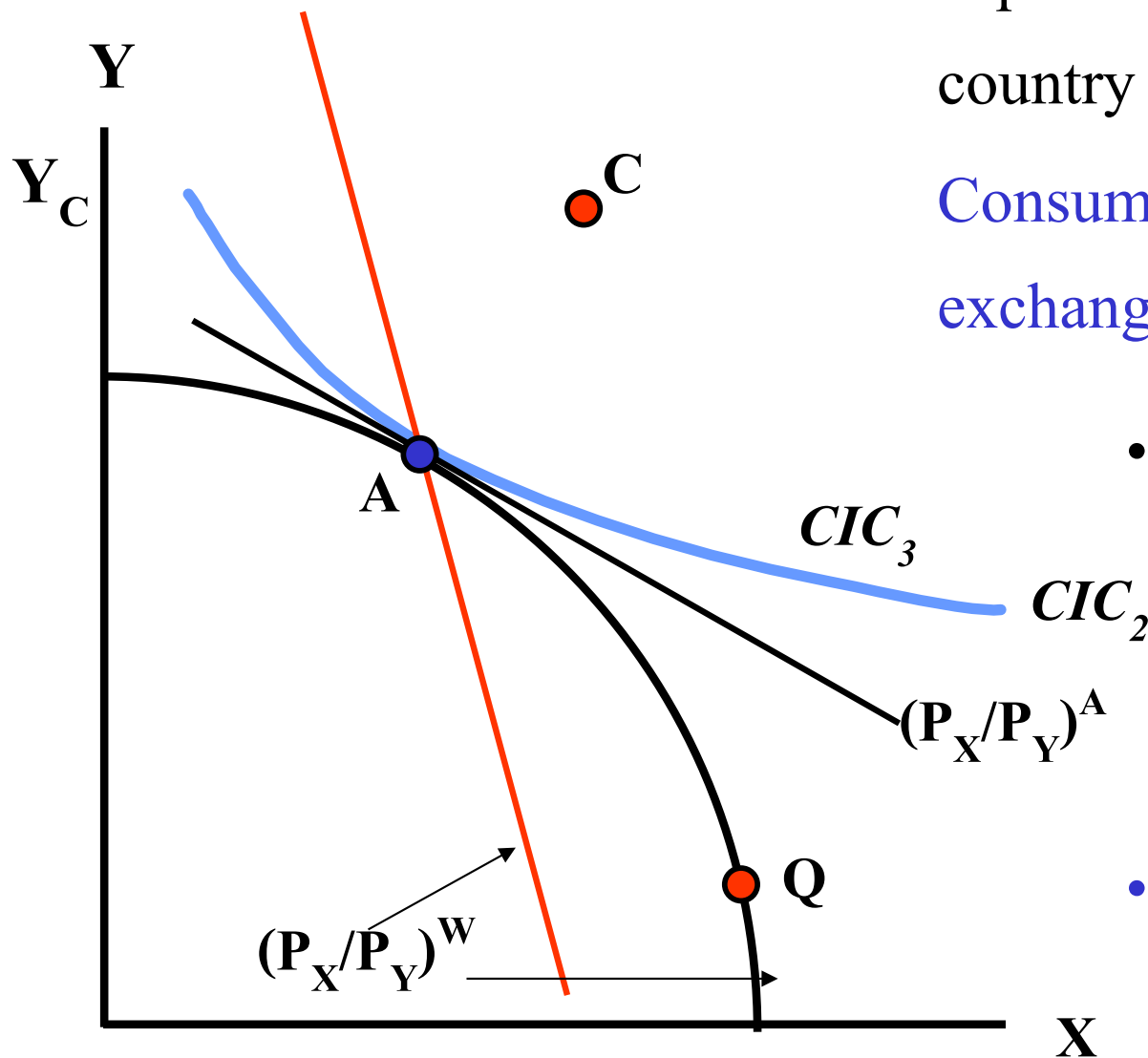
International equilibrium

- Suppose the world relative price of X is higher.



- Production moves to point Q.
- Consumption moves to point C.
- Exports X = $X_Q - X_C$.
- Imports Y = $Y_C - Y_Q$.

Gains from trade

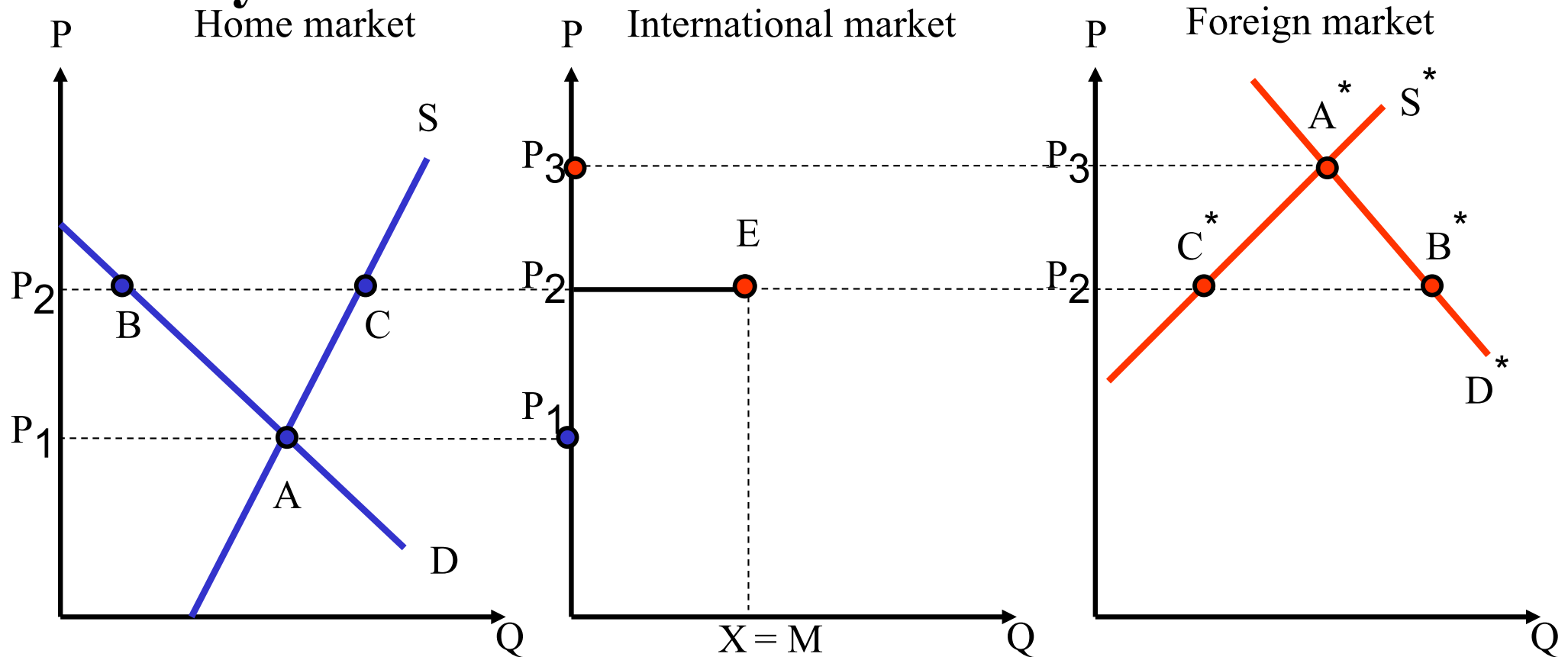


- If production remains at A but the country trade at world price. --> Consumption gain or gains from exchange: movement from A to C'.
- If production can change to Q --> Production gain or gains from specialization: movement from C' to C.
- Total gains from trade: movement from A to C.

Equilibrium Price: Partial equilibrium

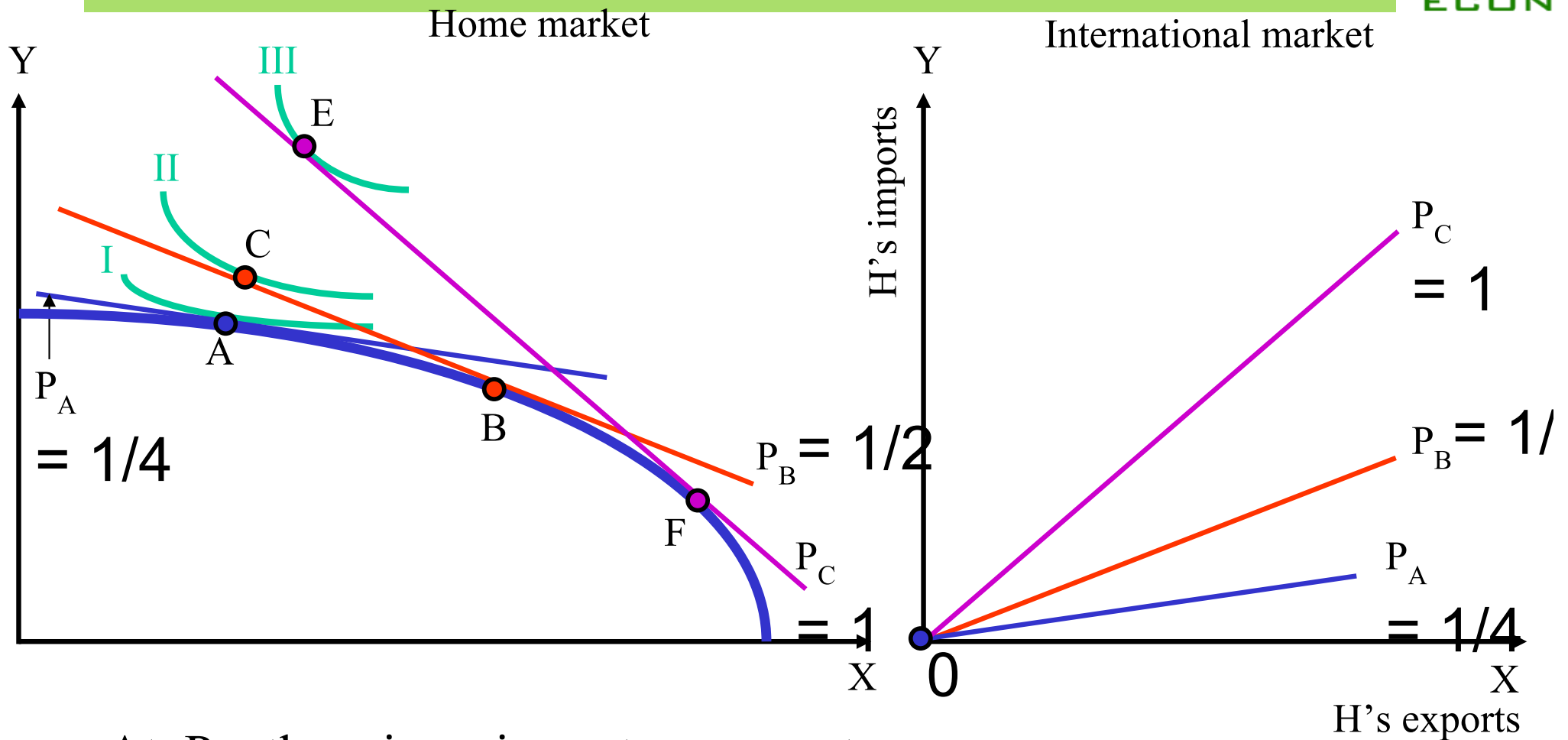


analysis



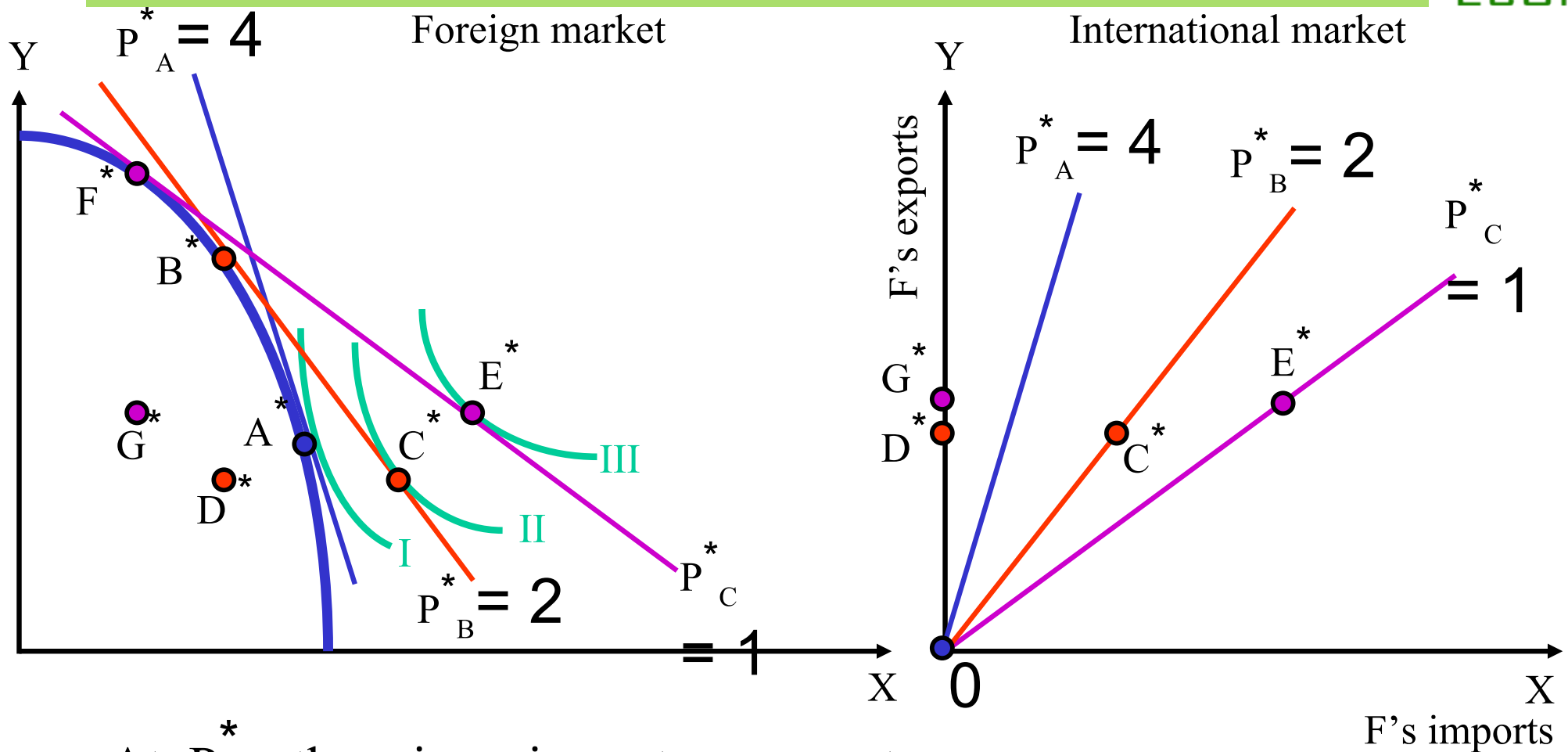
- Home's export supply curve, S_E , comes from its excess supply.
- Foreign's import demand curve, D_M^* , comes from its excess demand.
- International equilibrium price occurs where $S_E = D_M^*$ at point E.

Equilibrium relative price: Offer curves



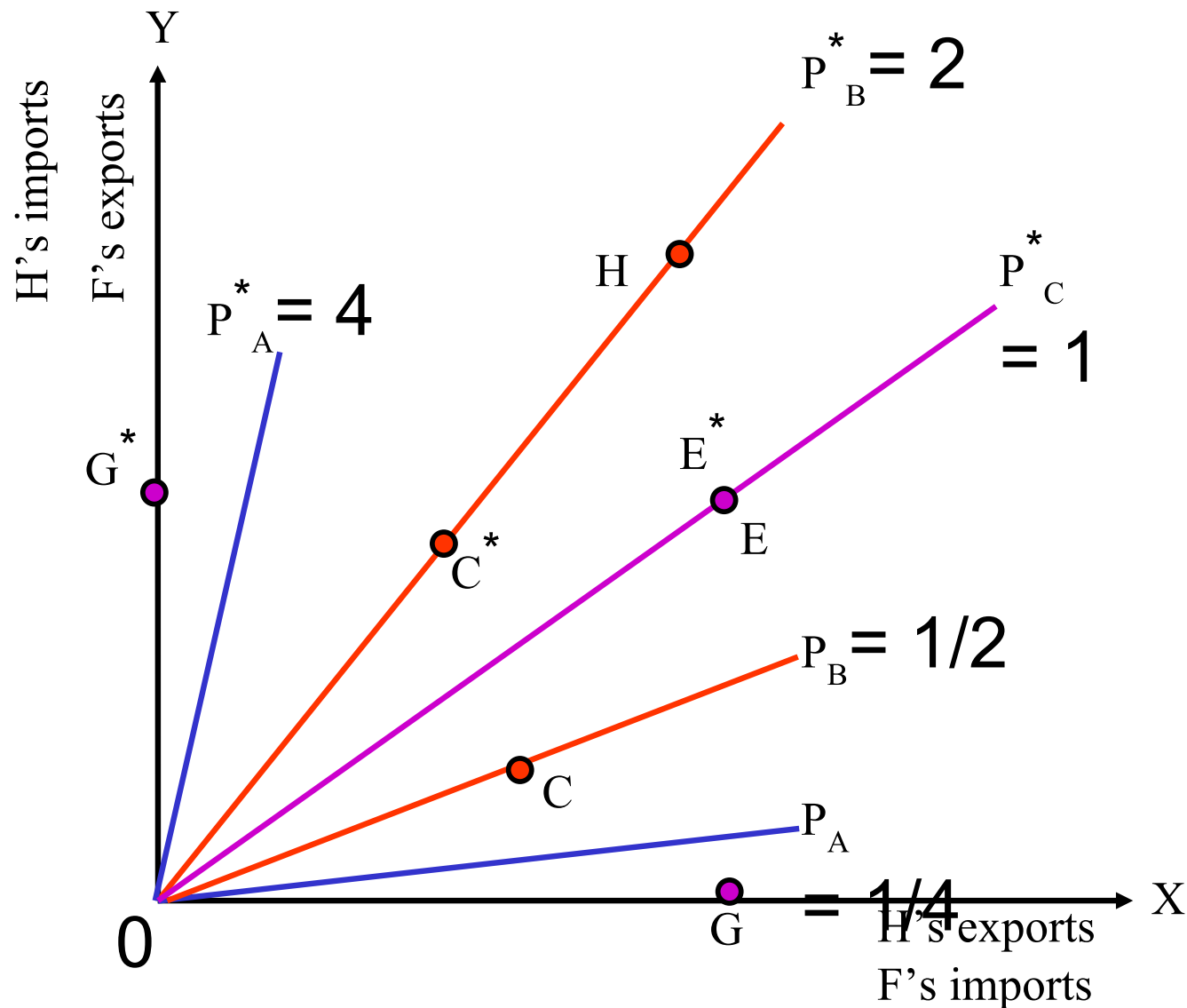
- At P_A , there is no imports or exports.
- At P_B , H imports $Y = \overline{CD}$ exports $X = \overline{DB}$.
- At P_C , H imports $Y = \overline{EG}$ exports $X = \overline{FG}$.

Equilibrium relative price: Offer curves



- At P_A^* , there is no imports or exports.
- At P_B^* , F imports $X = \overline{C^* D^*}$ exports $Y = \overline{B^* D^*}$.
- At P_C^* , F imports $X = \overline{E^* G^*}$ exports $Y = \overline{F^* G^*}$.

Equilibrium relative price: Offer curves



- The equilibrium relative price is at the intersection of offer curves.