Classical Theory of Trade

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- Based on labour theory of value.
- Assumptions:

1) Labour is the only factor of production, $Q = f(L)$

- capital has the role of helping labour in raising production.

2) Labour is the only factor of production which gets remuneration.

3) All units of labour are homogeneous

Smith's Theory

	Labour-hours required to produce one unit of	
	X	Y
Country A	10	20
Country B	20	10

Smith's Theory

Country	Resources	Production & Consumption before Trade	Production after Trade	Consumption after Trade
A	30 labour-hrs	1X+1Y	3X	2X+1Y
B	30 labour-hrs	1X+1Y	3Y	1X+2Y

Ricardo's Theory

	Labour-hours required to produce one unit of	
	X	Y
Country A	80	90
Country B	120	100

Ricardo's Theory

Country	Resources	Production & Consumption before Trade	Production after Trade	Consumption after Trade
A	170 labour-hrs	1 X+1Y	$2\frac{1}{8}$X	$1\frac{1}{8}$ X+1Y
B	220 labour-hrs	1X+ 1Y	$2\frac{1}{5}$Y	1X+ $1\frac{1}{5}$ Y

Ricardo's Theory

- Assume

a_{LX}, a_{LY} = fixed labour-coefficients in the production of X and Y respectively at home country.

L = amount of labour-hours available at home country .

Equation of Production Possibility Curve(PPC) for home:

$$L = a_{LX} X + a_{LY} Y$$

Ricardo's Theory

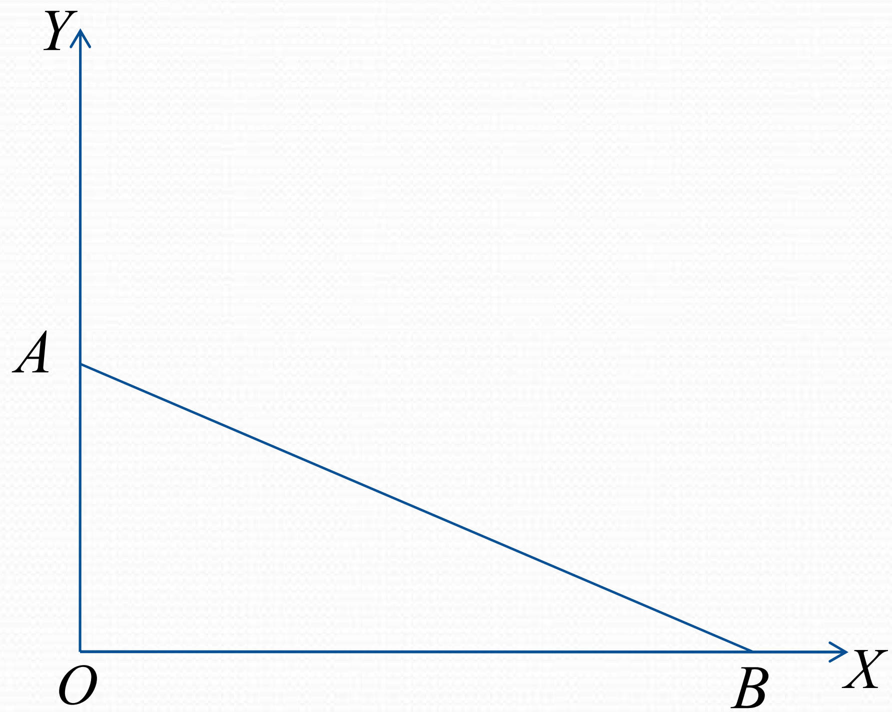
$$L = a_{LX} X + a_{LY} Y$$

$$\Rightarrow \; Y = \frac{L}{a_{LY}} - \frac{a_{LX}}{a_{LY}} X$$

By assumption country A has comparative advantage in X production. Therefore,

$$\frac{L}{a_{LX}} > \frac{L}{a_{LY}}$$

$$\Rightarrow \; OB > OA$$



PPC for Home Country

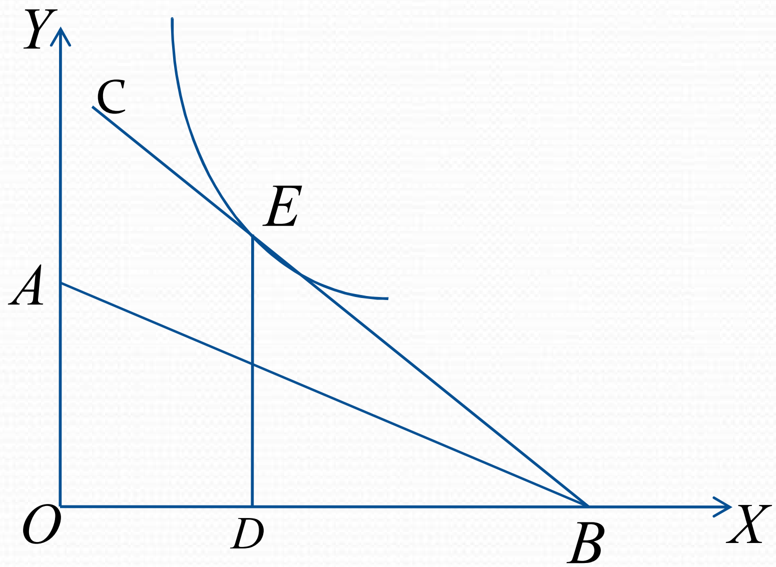
Ricardo’s Theory

- The price ratio uder autarky:

$$\frac{P_X}{P_Y} = \frac{a_{LX}w}{a_{LY}w} = \frac{a_{LX}}{a_{LY}}$$

- Therefore, the slope of the PPC is same as that of the price line.
- Hence, under autarky the price line coincides with the PPC.
- Equilibrium is established under autarky at the tangency point between the CIC and AB line.

Ricardo's Theory



- CB is the international price line.
- When trade occurs production equilibrium is established at point B.
- Consumption equilibrium is at point E.

- Assume

  a^*_{LX} , a^*_{LY} = fixed labour-coefficients in the production of X and Y respectively at foreign country.

  L^* = amount of labour-hours available at foreign country .

- Equation of Production Possibility Curve(PPC) for foreign country:

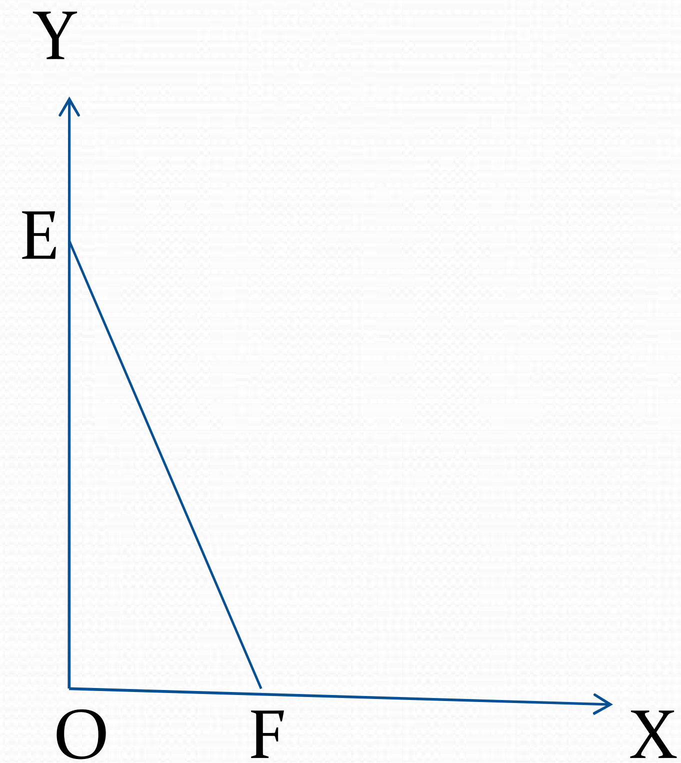
$$L^* = a^*_{LX} X + a^*_{LY} Y$$

$$\Rightarrow Y = \frac{L^*}{a^*_{LY}} - \frac{a^*_{LX}}{a^*_{LY}} X$$

- By assumption country A has comparative advantage in X production. Therefore,

$$\frac{L^*}{a^*_{LX}} < \frac{L^*}{a^*_{LY}}$$

or, OF < OE

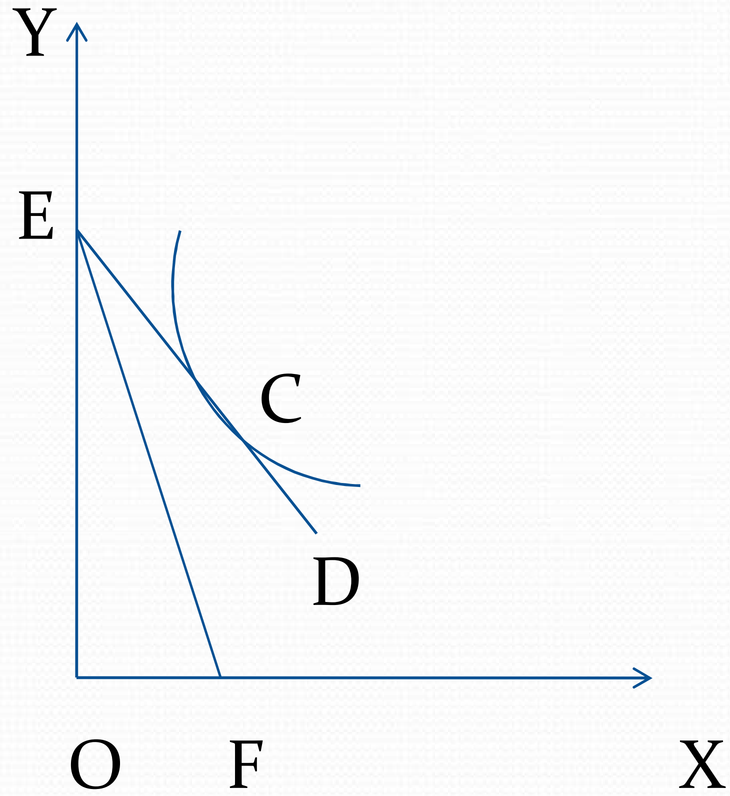


PPF of Foreign Country

- The price ratio under autarky in foreign country:

$$\frac{P_X^*}{P_Y^*} = \frac{a_{LX}^*}{a_{LY}^*}$$

- Therefore, the slope of the PPC is same as that of the price line.
- Hence, under autarky the price line coincides with the PPC.
- Equilibrium is established under autarky at the tangency point between the CIC and EF line.



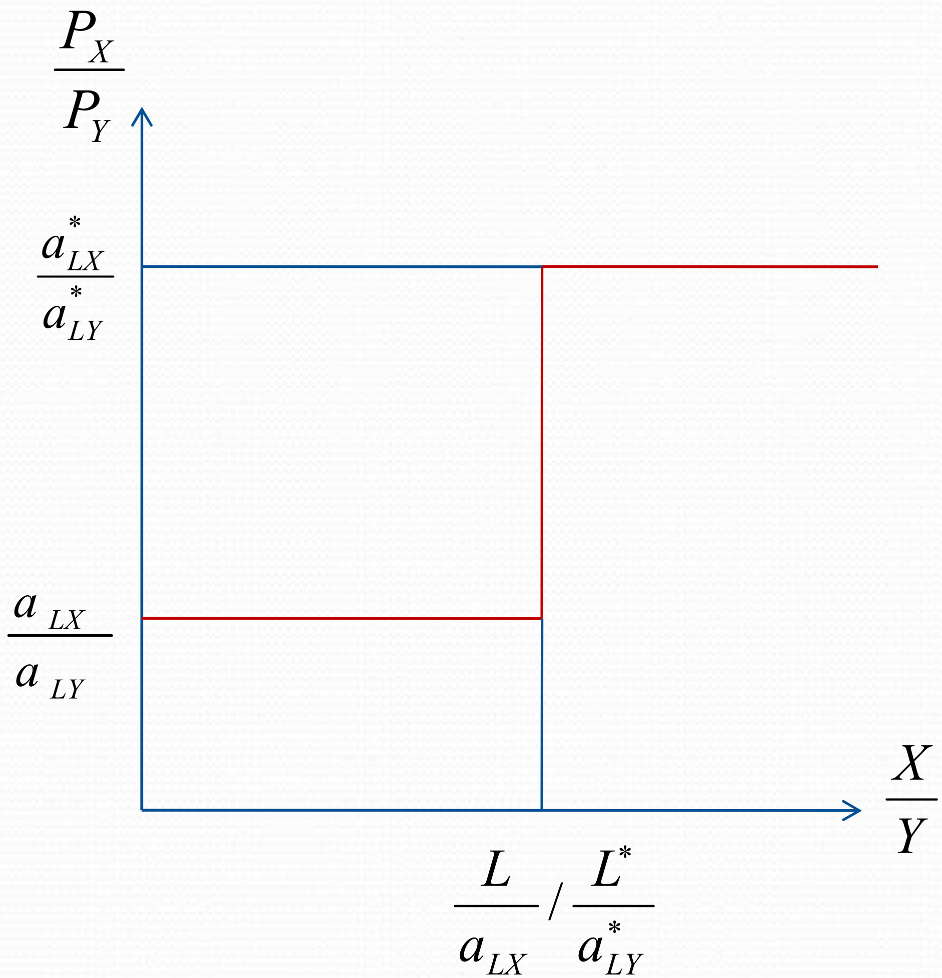
- The same international price line is now tangent with the foreign PPF at point F. So F is the production point after trade which implies complete specialization in Y production in foreign country.

- The consumption equilibrium is established at the tangency point between the international price line and the CIC of foreign country.

- In both home and foreign countries the consumption space is now determined by the international price line which lies above the PPFs of both the countries.

- Hence trade leads to an expansion of the consumption opportunities of both the countries.

Relative Supply Curve



Relative Supply Curve

- Below the price level $\frac{a_{LX}}{a_{LY}}$, no country will be interested to produce commodity X. Therefore, RS curve of X will coincide with the vertical axis.
- At the price level $\frac{a_{LX}}{a_{LY}}$, the international price line will coincide with PPF of home country $\Rightarrow$ RS curve of X will be horizontal.
- At the price levels between $\frac{a_{LX}}{a_{LY}}$ and $\frac{a^*_{LX}}{a^*_{LY}}$ The home and foreign countries will completely specialize in X and Y respectively $\Rightarrow$ RS curve vertical straight line

Relative Supply Curve

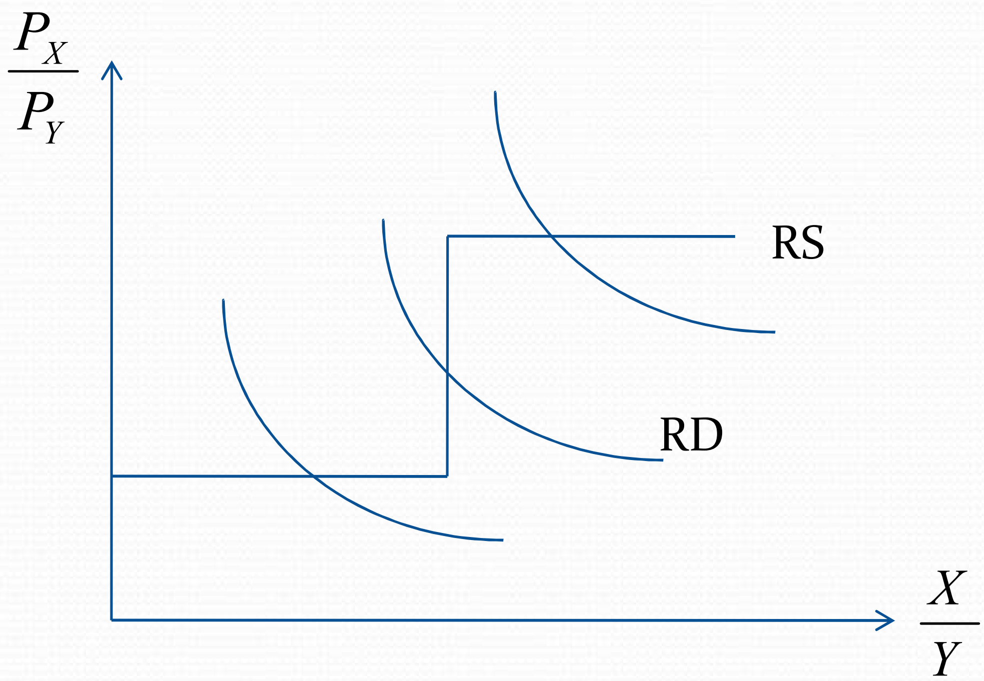
- At price $\frac{a^*_{LX}}{a^*_{LY}}$ the international price line coincides with foreign offer curve $\Rightarrow$ RS curve horizontal straight line

- At the prices above $\frac{a^*_{LX}}{a^*_{LY}}$, both countries will produce X

$\Rightarrow$RS of X will be infinite

Determination of Equilibrium Price

- Equilibrium price is determined in the international market at the point of intersection between the RS and RD curves.



References

- Krugman and Obstfeld
- Caves, Frankel and Jones