

Chapter 9, Instruments of Trade Policy, Problems

Problem 1.

Answer:

Home country:

$$D = 100 - 20P$$

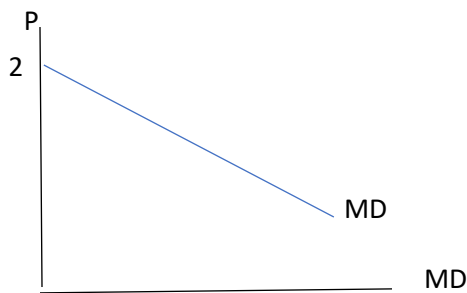
$$S = 20 + 20P$$

$$\text{Demand for imports: } MD = D - S = 100 - 20P - (20 + 20P) = 80 - 40P$$

Price of wheat in the absence of trade:

$$D = S \Rightarrow D - S = 80 - 40P = 0 \Rightarrow P = 2$$

Demand for Imports (MD)



Problem 2.

Answer:

Foreign Country:

$$D^* = 80 - 20P$$

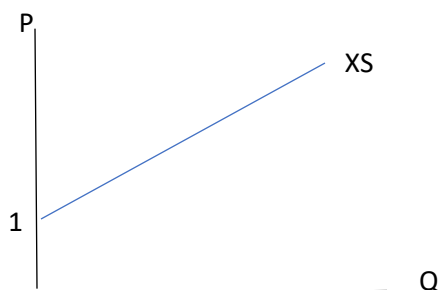
$$S^* = 40 + 20P$$

$$\text{Supply of exports: } XS = S^* - D^* = 40 + 20P - (80 - 20P) = 40 - 40P$$

Price of wheat in the absence of trade:

$$D^* = S^* \Rightarrow S^* - D^* = 40 - 40P = 0 \Rightarrow P = 1$$

Supply of exports (XP)



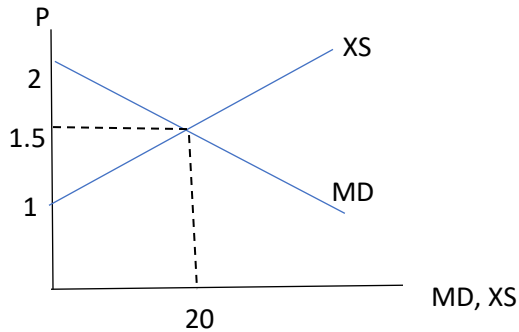
b) When trade starts between the two countries:

Equilibrium: $MD = XS$ (imports of the Home country will be equal to the exports of the Foreign country).

$$MD = XS \Rightarrow 80 - 40P = -40 + 40P \Rightarrow P = 1.5 \text{ (international price under free trade)}$$

The volume of trade is MD or XS:

$$MD = XS \Rightarrow 80 - 40P = -40 + 40P \Rightarrow 80 - 40 \cdot 1.5 = -40 + 40 \cdot 1.5 = 20 \text{ (volume of trade)}$$



Problem 3.

Answer

a)

(1) The price of wheat in each country, after the imposition of the tariff.

So, after the tariff:

$$\left. \begin{array}{l} MD = 80 - 40(P + 0.5) \\ XS = -40 + 40P \\ MD = XS \end{array} \right\} \Rightarrow$$

$\Rightarrow P = 1.25$ (international price after the tariff). This is the price in Foreign country.

In the Home country, after the imposition of the tariff, the price is $1.25 + 0.5 = 1.75$

(2) In the Home country:

Quantity demanded is $D = 100 - 20 \cdot 1.75 = 65$

Quantity supplied is $S = 20 + 20 \cdot 1.75 = 55$

Imports = $65 - 55 = 10$

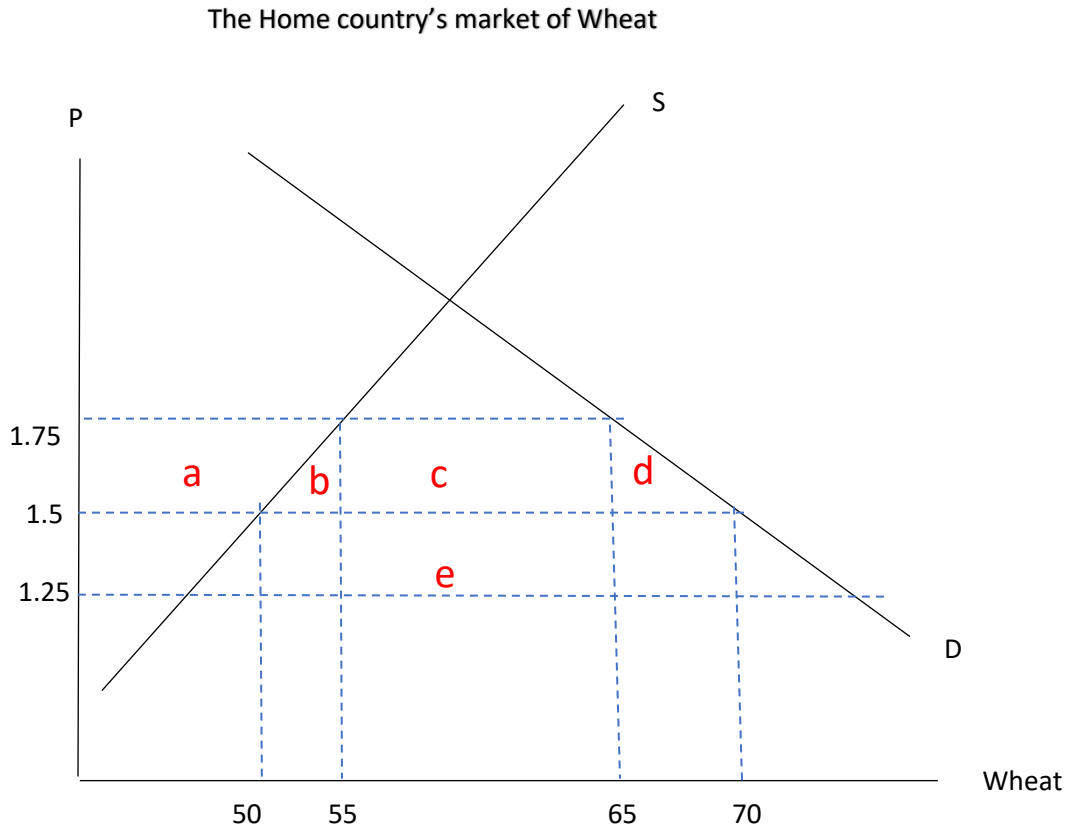
In the Foreign country:

$D^* = 80 - 20 \cdot 1.25 = 55$

$$S^* = 40 + 20 \cdot 1.25 = 65 \Rightarrow XS = 65 - 55 = 10$$

(3) the volume of trade is equal to 10 ($MD=XS=10$). We observe that the volume of trade has decreased because of the tariff.

b) the effect of the tariff on Home country's market of Wheat:



- (1) The welfare of the Home import competing producers increases by area (a).
- (2) The welfare of Home consumers decreases by area (a+b+c+d).
- (3) The Home country's government has a revenue equal to area (c+e) (this is considered as an increase of the country's welfare, as a higher revenue of the government leads to increased expenses on its citizens).

c) Efficiency loss = (b+d)

where

b, is the production distortion loss.

d, is the consumption distortion loss.

The terms of trade gain is equal to area, e. (the Home country's terms of trade have improved, as the international price of wheat has decreased).

Total effect on the country's welfare: **-(b+d-e)**

Hence,

The terms of trade gain is area $e = (65-55) \cdot (1.5-1.25) = 2.5$

The efficiency loss is **$b+d=0.625+0.625=1.25$**

Where $b = 1/2 (55-50) \cdot (1.75-1.5) = 0.625$

$d = 1/2 (70-65) \cdot (1.75-1.50) = 0.625$

and

Total effect of the tariff on welfare is **$-(b + d - e) = (0.625 + 0.625 - 2.5) = -1.25$**