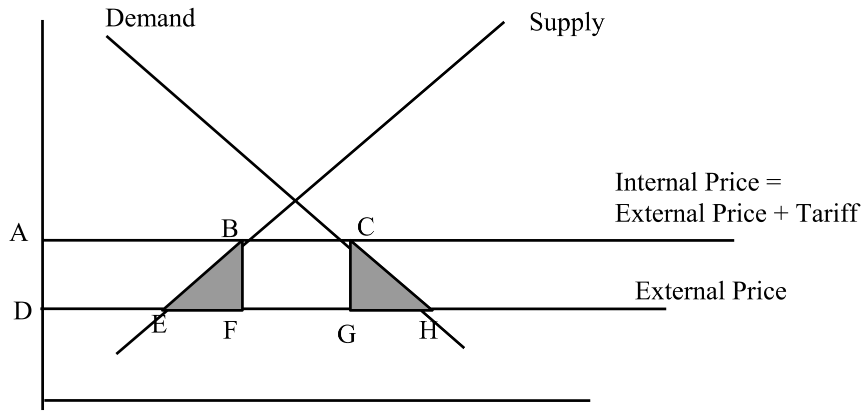
Consumer Surplus / Producer Surplus

Traditional treatment



Loss in Consumer Surplus	ACHD	
Gain in Producer Surplus	ABED	
Tariff Revenue	BCFG	
Net Loss		BFE+DHG

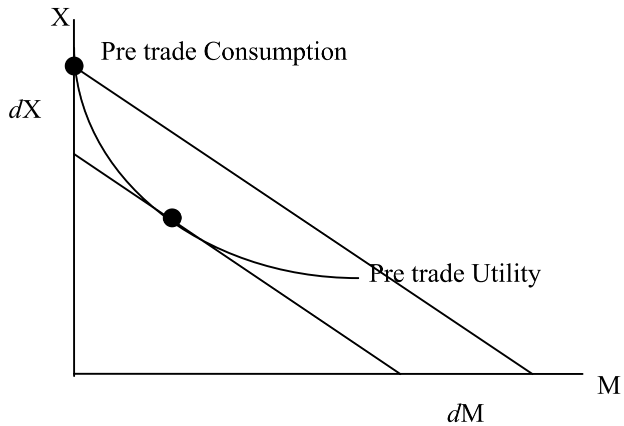
Loss = ½ tariff

$$\text{LOSS} = \frac{1}{2}\textit{tariff} \times \Delta\text{Imports} = \frac{1}{2}\textit{tariff} \times \frac{\Delta\text{Imports} / \text{Imports}}{\Delta price \,/\, price}\text{Imports} \times \textit{tariff} =$$

$$= \frac{1}{2}\textit{tariff}^{\,2} \times \text{Import Elasticity} \times \text{Import Quantity}$$

Consumer Surplus

X = exportable   M = importable



dX = the amount you would be willing to pay in terms of X to have the exchange opportunity
dM = the amount you would be willing to pay in terms of M to have the exchange opportunity
$dM = (p_X/p_M)\, dX$

These are areas below/above compensated demand curves: